

JOURNAL OF MILITARY LEARNING

October 2022

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JOURNAL OF MILITARY LEARNING

October 2022, Vol. 6, No. 2

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Welcome to the October 2022 edition of the *Journal of Military Learning (JML)*. This edition includes manuscripts from the U.S. Air Force, U.S. Army, and a member of industry. I hope you enjoy this selection of articles and encourage all our readers to submit manuscripts for a future edition's consideration.

I would like to thank everyone who participated in the 2022 Army University Symposium. The symposium was a complete success with over 1,000 virtual and in-person participants. We will be publishing a *JML* Conference Special Edition in February 2023 with articles submitted for the ArmyU Symposium and the Advanced Distributed Learning iFEST.

The *JML* brings current adult-learning discussions and educational research from the military and civilian fields for continual improvements in learning. Only through critical thinking and challenging our education paradigms can we as a learning organization fully reexamine and assess opportunities to improve our military education. We continually accept manuscripts for subsequent editions with editorial board evaluations held in April and October. The *JML* invites practitioners, researchers, academics, and military professionals to submit manuscripts that address the issues and challenges of adult education and training such as edu-



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cation technology, adult learning models and theory, distance learning, training development, and other subjects relevant to the field. Submissions related to outcomes-based military education (OBME) will be given special consideration as we develop strategies for implementing the new Department of Defense Instruction that established OBME as a learning standard. A detailed call for papers and manuscript submission guidelines are found at <https://www.armyupress.army.mil/Journals/Journal-of-Military-Learning>. 

Comparing In-Person and Online Air Force Professional Military Education Instruction during the COVID-19 Pandemic

Jason Keys
Air University

Abstract

U.S. Air Force enlisted professional military education taught leadership development courses in a facilitated online format for the first time in the program's history during the COVID-19 pandemic. This cross-sectional, quasi-experimental study collected and analyzed 12 months of data from three of the largest Airman leadership schools globally. This study examined students from nearly all enlisted Air Force specialties ($n = 1,183$). Comparing process, demographic, and student learning data from six months of in-person and six months of online instruction, independent samples t -tests revealed students generally earned significantly higher grades in online classes than in person. Course length and student travel costs were the same for both course types. Instructors took as long or longer to complete initial instructor qualification training when teaching online compared to teaching in-person courses. The switch to online instruction eliminated disciplinary disenrollments. Military decision-makers can utilize these data when considering the benefits of continuing to conduct professional military education in online learning environments.

U.S. Air Force (USAF) Enlisted Professional Military Education (EPME) shifted traditionally in-person leadership development courses to an online facilitated format due to the COVID-19 pandemic (Culbert, 2020). Keys (2021) evaluated the teachers' sense of efficacy of 26% ($n = 129$) of the 500 EPME in-

structors teaching in 80 schools worldwide. Results indicated that instructors across all military ranks teaching across all levels of EPME generally felt confident and competent when teaching EPME in online learning environments, despite not having received preservice or in-service training specific to online teaching and learning. While Keys (2021) relied solely on perceptions data (how staff felt about the learning environment), this research aimed to continue the work of Keys by evaluating additional data types: process, demographic, and student learning data. This study collected and analyzed 12 months of data from students ($n = 1,183$) attending three schools teaching the Airman Leadership School (ALS) curriculum both in person ($n = 558$, 47%) and online ($n = 625$, 53%) for six months preceding and six months after the onset of the COVID-19 pandemic and the shift to online instruction. EPME decision-makers of all military branches can utilize this study's results when determining the benefits of teaching professional military education online.

Background

Synchronous Online EPME—An Unprecedented Shift

The COVID-19 pandemic forced educators nationwide to shift traditionally in-person instruction to online learning environments in Spring 2020, and Air University was at the forefront of this mandated change in course delivery (Culbert, 2020). Over 500 enlisted USAF instructors teaching EPME leadership courses across 80 schools had no choice but to teach online for the first time in the history of the program (Culbert, 2020; Keys, 2021). Instructors had between one and four years of total teaching experience within the USAF EPME enterprise.

Tens of thousands of airmen who are chosen for promotion each year require EPME completion before assuming the next rank (AF/A1D 2018), spurring Air University to continue hosting courses online during the COVID-19 pandemic.

Air Force guidance stated, “distance learning instructors must complete the same qualification process as a traditional classroom instructor” (Community College of the

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Air Force, 2017, p. 25) but did not mandate preservice or in-service training specific to teaching online. Keys (2021) challenged the validity of this guidance by examining the efficacy of preservice training for USAF EPME instructors teaching online during the COVID pandemic. In this study, 26% ($n = 129$) of all instructors across all levels of USAF EPME responded to a teacher sense of efficacy survey focusing on Robinia and Anderson's (2010) four facets of teaching efficacy: technology use, classroom management, student engagement, and instructional strategies. Results indicated that instructors generally felt confident and competent teaching online despite not having specialized training to teach in online learning environments. Results also indicated a positive relationship between higher reported senses of teaching efficacy and years of instructor experience. Instructors who worked with an instructional support specialist (someone who provides coaching and mentorship, and models effective teaching strategies in areas such as educational technologies or educational psychology) showed a significantly higher sense of teaching efficacy than instructors who did not. Finally, the study recommended that future research incorporate process, demographic, and student learning data types, which will be described in the Conceptual Framework section.

This study aims to continue the work of Keys (2021) by comparing online and in-person process, demographic, and student learning data from the ALS level of USAF EPME to examine the efficacy of online courses during the COVID-19 pandemic.

EPME Instructor Training

USAF EPME instructors attend preservice training traditionally consisting of 158 hours of in-person instruction at the EPME instructor course taught at Air University (Air University, 2020). Preservice training focuses on teaching the basics of in-person instruction methodology, student engagement, and classroom management (Air University, 2020). After preservice training, instructors teach in the schoolhouse to certify on a specific curriculum under the guidance of an instructor trainer for 120 hours before teaching independently (Department of the Air Force [DAF], 2018).

Airman Leadership School

ALS is the first level of USAF EPME and is a 24-day leadership development course (Department of the Air Force [DAF], 2021). There are 68 ALS schools worldwide for active-duty airmen and one for Air National Guard airmen, all centrally managed by and subordinate to the Thomas N. Barnes Center for Enlisted Education (BCEE) within Air University (Air University, 2021). Senior airmen are mandated to complete ALS before promoting into the noncommissioned officer corps (AF/A1D, 2018; BCEE, 2021a; DAF, 2021). Per the BCEE (2021a), the mission of ALS is “to pre-



pare Senior Airmen to be professional, warfighting Air and Space professionals who can supervise and lead Air and Space Force work teams to support the employment of air, space, and cyberspace power” (p. 3). Airmen earn eight semester hours of college credit in leadership, management, and military studies through the Community College of the Air Force upon graduating ALS (BCEE, 2021b).

This study examined the ALS curriculum taught from September 2019 through September 2020. Per the BCEE (2019), the ALS program outcomes were as follows:

- ◆ students communicate their contribution to the wing and USAF missions,
- ◆ students collaborate and connect with members of the USAF team,
- ◆ students apply cognitive strategies to solve USAF problems, and
- ◆ students exhibit the USAF core values and instill them in others.

The ALS curriculum consisted of five graded assignments:

- ◆ a briefing on the USAF mission (individual oral presentation),
- ◆ a presentation on being a professional airman (individual oral presentation),
- ◆ a problem-solving presentation (group oral presentation),
- ◆ an evaluation of the USAF core values (individual written assignment), and
- ◆ a capstone assignment synthesizing all course concepts (individual written assignment).

Community College of the Air Force (2017) guidance did not mandate instructors attend preservice or in-service education tailored to the online learning environment when teaching ALS online. While some instructors potentially sought out best practices for online instruction to learn on their own, Air University did not provide formal training to prepare instructors to teach ALS online during the COVID-19 pandemic.

Conceptual Framework: Data-Driven Decision-Making for School Improvement

This study utilized Bernhardt’s (2018) data-driven decision-making for school improvement framework, utilized across myriad educational research studies to evaluate program efficacy (Dunn et al., 2013; Lange et al., 2012; Parham, 2015). Bernhardt posits that educational leaders can utilize data-driven decision-making for school improvement by collecting and analyzing four data types: perceptions, process, demographic, and student learning data.

Perceptions Data

Perceptions data include the opinions, values, beliefs, and convictions of educational stakeholders, including students, staff, administrators, parents, and community members (Bernhardt & Geise, 2009). Perceptions data answer the question



how do we do business, and can be collected via interviews, observations, surveys, and questionnaires (Al Ahbabi, 2019; Bernhardt, 2018). Administrators can use perceptions data to evaluate how faculty members perceive the school environment, utilizing the data in planning, resourcing, and allocating professional development opportunities to teachers (Akert & Martin, 2012).

Process Data

Per Bernhardt (2018), school processes are actions, decisions, and behaviors exhibited by school staff and faculty to achieve a school's vision. Examples of school processes include the techniques and strategies instructors employ in learning environments, those structures schools put in place to implement a shared vision, elements about schooling that we count, such as class sizes, and the structures and elements that help schools continuously improve their systems.

School process data include information about the processes employed to deliver educational programs, to include class sizes, assignment types, attendance, policies, use and number of staff, inclusion, differentiated instruction, and the school's mission and vision (Kowalski et al., 2008; Lange et al., 2012).

Demographic Data

Demographic data provide insight into the characteristics of the student population (Bernhardt, 2018). They include information, for example, about student and faculty ethnicity, teacher and student attendance, socioeconomic status, age, special needs status, number of students enrolled in a program, number of graduates, drop-out rates, and number of teachers by years and experience (Bernhardt, 2018; DuFour et al., 2013; Lange et al., 2012). Schools can leverage demographic data to analyze how it has served past and current populations and identify changes needed to meet the needs of future students and faculty (Bernhardt, 2018; Reeves, 2005).

Student Learning Data

Student learning data allows researchers to understand what students know because of instruction, what teachers are teaching, and where students need assistance (Bernhardt, 2018). Student learning data includes formal and informal assessments of learning, progress monitoring, grade distributions, benchmark tests, and formative and summative assessments (Moskal et al., 2008; Wilhelm, 2011). In addition, researchers can utilize quantitative and qualitative methods to obtain student learning data (Lange et al., 2012).



This study aims to continue the research of Keys (2021) by adding process, demographic, and student learning data types to already-reported perceptions data. Together, these data should present a holistic picture of the efficacy of online ALS courses during the COVID-19 pandemic.

Research Questions

This study began with three research questions:

1. Was there a difference in travel and lodging costs, instructor training timelines, and course length between online and in-person ALS courses (process data)? If yes, how significant were these differences?
2. Was there a difference in student body size or student disenrollment numbers between online and in-person courses (demographic data)? If yes, how significant were these differences?
3. Was there a statistically significant difference in grades across all graded assignments in the ALS course when comparing online and in-person courses (student learning data)? If yes, what were the effect sizes of these differences?

Hypotheses

Per the BCEE (2021a), schools can teach ALS online or in person. ALS graded assignments include briefings and written papers not tailored to a particular course delivery method (in-person or online; synchronous or asynchronous). Community College of the Air Force (2017) policy does not mandate online instructors complete preservice or in-service education tailored to the online learning environment. With this information as a foundation, this study's hypotheses were as follows:

1. There will be no statistically significant difference in travel and lodging costs, instructor training timelines, and course length between online and in-person ALS courses.
2. There will be no statistically significant difference in student body size or student disenrollment numbers between online and in-person courses.
3. There will be no statistically significant difference in grades across all graded assignments in the ALS course when comparing online and in-person courses.

Methods

While EPME consists of four levels of leadership training (DAF, 2021), this research focused on the ALS level due to the other levels teaching different course material



before and after the shift to online learning during the COVID-19 pandemic (Keys, 2021). ALS was the only EPME level to teach the same material online and in person, providing the opportunity to compare similar data between the delivery methods that could produce valid and reliable results utilizing a cross-sectional design.

There are 68 ALS schoolhouses worldwide for active-duty airmen and one for Air National Guard airmen globally (Air University, 2021). The author chose the representative sample in this study based on the following criteria:

- ◆ in the top 10% of ALS schools based on student population size,
- ◆ diversity of student body when considering students' specialties within the USAF,
- ◆ each school trained at least one instructor during in-person learning and at least one instructor during virtual learning,
- ◆ at least one school was located within the United States and at least one school was located outside the United States,
- ◆ each school taught at least three iterations of ALS in-person before the COVID pandemic, and
- ◆ each school taught at least three iterations of the same ALS curricula online after the start of the COVID pandemic.

Upon screening all 69 schools, the author chose three schools for this study once it was determined there would be students from all USAF career field specialty groups represented in the sample. The one exception was the special investigations career field, as airmen typically complete ALS before entering that career field. Schools 1 and 2 were located within the continental United States, while School 3 was in a country other than the United States. All three schools primarily served active-duty airmen. Therefore, results cannot be generalized to the Reserve Component population within EPME.

This study was granted exempt status from the institutional review board at Air University. The author obtained all relevant process, demographic, and student learning data for this study from the Academic Affairs department at the Thomas N. Barnes Center for Enlisted Education within Air University. This study analyzed data for the six months of in-person learning prior to the COVID-19 pandemic and six months of online learning immediately after EPME shifted to the online learning environment.

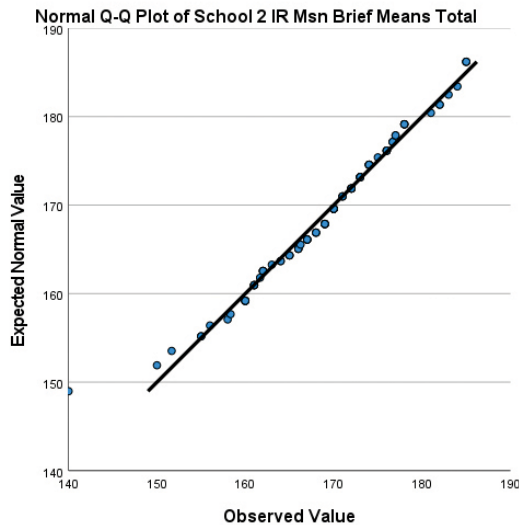
The Thomas N. Barnes Center for Enlisted Education provided student travel and lodging cost, course length, disenrollment, and instructor training data for in-person and online ALS courses for each of the three schools in this study. For these data, the center did not provide more granular data for each specific 24-day seminar or each student within the 12 months of data.

This study obtained student grades for all five assignments for in-person ($n = 558$, 47%) and online ($n = 625$, 53%) students at each school. The author calculated the mean, standard deviation, and range of each assignment's score for in-person and online instruction for each school using IBM SPSS Statistics (Version 28). Kolm-



Figure

Normal Q-Q Plots of School 2's In-Residence Mission Briefing Assignment



ogorov-Smirnov and Shapiro-Wilk tests were run for each school's in-person and online grade data and confirmed normality of data along with histograms and Q-Q plot charts (see Figure).

This research utilized independent samples *t*-tests to compare student learning data between each school's in-person and online iterations of ALS. Each school was compared against itself, as opposed to other schools, to ensure consistency across instructor personnel, populations from which students were chosen (each base aligned to each ALS schoolhouse), personnel experience, school leadership, and local rules and regulations specific to each school. Eliminating these variables ensured a valid, reliable, and unobscured analysis of student grades across all assignments, as the goal was to eliminate as many outside variables as possible, including differences in the execution of instruction between schools. In total, this study analyzed three sets of five different assignments completed in-person and online. This research used an alpha of 0.05 throughout all tests. Therefore, any independent samples *t*-tests resulting in an alpha of $p < 0.05$ would indicate that differences in grades are statistically significant, with the difference not simply occurring due to chance.

When examining statistically significant results, this study utilized Cohen's (1998) method to determine effect sizes, or how large a statistically significant difference is. This method involves calculating the mean difference between two groups, and then dividing the result by the pooled standard deviation.



Table 1*Average Instructor Internship Completion Time by School*

	In-Person	Online
School 1	7 months (1 instructor)	9 months (1 instructor)
School 2	3.5 months (3 instructors)	8 months (1 instructor)
School 3	9 months (2 instructors)	9 months (4 instructors)

Table 2*Average Student Cohort Size per 24-Day Airman Leadership School Seminar*

	In-Person	Online
School 1	56.3	55
School 2	73.3	64.6
School 3	82.5	88.6

Results

Process Data

Student Travel and Lodging Costs. Active-duty students attending ALS in person lived in the local area near their ALS schoolhouse and did not incur travel, lodging, or per diem costs when attending training in person. Air University provided no data on Air Guard or Reserve students who would have traveled to the in-residence course.

Active-duty students attending ALS online also incurred no travel or lodging costs, as there was no mandated travel for the online course.

Course Length. ALS courses were 24 academic days in length for all schools, both in person and online.

Instructor Training Timelines. New USAF EPME instructors are required to complete a 120-hour teaching internship before consideration for a fully qualified instructor (BCEE, 2021c). A total of 12 instructors completed internships during in-person ($n = 6$, 50%) and online ($n = 6$, 50%) courses. Instructors in the online environment completed internships at the same rate or slower than instructors teaching in person at the same school (see Table 1). Air University provided average instructor internship completion times for each school for in-person and online instruction and did not provide specific timelines for individual instructors.



Table 3*Total Airmen Disenrolled from Airman Leadership School In Person and Online*

	Sep 2019–Mar 2020 (in-person)			Apr–Sep 2020 (online)		
	Academic	Disciplinary	Administrative	Academic	Disciplinary	Administrative
School 1	0	3	0	0	0	1
School 2	0	0	0	0	0	0
School 3	0	0	0	0	0	0

Demographic Data

Student Population. This research studied data from 1,183 students across three schools; 558 (47%) attended in-person courses, while 625 (53%) attended online courses. Table 2 displays the average cohort size per 24-day course. Students were serving in the pay grades of E-4 or E-5 and were representative of all Air Force specialties, except for the special investigations specialty, as airmen typically complete ALS before entering the special investigations career field (Air Force Personnel Center, 2021).

Course Disenrollment. Per the BCEE (2021a), there are three EPME disenrollment types: academic, disciplinary, and administrative. Academic disenrollment occurs when a student fails to meet academic standards and an academic review board determines that the student should be disenrolled due to subpar academic performance. Students receive a disciplinary disenrollment when they violate USAF directives, school policies, or commit offenses under the Uniform Code of Military Justice. Administrative disenrollment occurs when a student is needed to return to his or her operational squadron to accomplish a military mission or in emergencies involving the student or an immediate family member.

Total disenrollments across all schools in a six-month period dropped from three to one after switching to online learning. Disciplinary disenrollment numbers were eliminated in the online environment, while they previously comprised 100% of the disenrollments from in-person courses (see Table 3). The only disenrollment in the online course was for administrative reasons.

Student Learning Data

Across all three schools, mean grades were higher in online courses than in-person courses on 13 of 15 assignments analyzed in this study. Grade ranges were higher in online learning environments than in-person learning environments on 14 of 15



Table 4
School 1 Student Learning Data by Assignment

Assignment	Mean		SD		Range		Sig
	In-Person	Online	In-Person	Online	In-Person	Online	
Mission	153.44	156.72	6.73	14.27	30	70	0.066
Prof. Amn.	119.2	123.6	4.24	7.99	20.5	40	< .001
Prob. Solv.	83.25	87.25	3.36	6.6	15	25	< .001
Core Value	120.2	126.12	4.05	10.39	20	45	< .001
Capstone	284.51	292.45	7.94	22.1	42	96	0.003

Table 5
School 2 Student Learning Data by Assignment

Assignment	Mean		SD		Range		Sig
	In-Person	Online	In-Person	Online	In-Person	Online	
Mission	169	181	8.09	10.04	45	55	< .001
Prof. Amn.	131.9	140.1	7.75	6.65	45	35	< .001
Prob. Solv.	91.39	93.58	4.39	4.41	20	20	< .001
Core Value	134.6	136.4	5.9	8.9	30	37.5	0.103
Capstone	330.3	341.2	21.64	25.31	96	114	0.002

assignments analyzed across all schools. In online learning environments, standard deviations were larger than for in-person environments in 14 of 15 assignments analyzed across all schools.

The group problem-solving presentation was the only assignment with statistically significant higher scores in the online learning environment across all three schools.

School 1. Independent samples *t*-tests were conducted to compare School 1 student scores across five assignments in online and in-person learning environments (see Table 4). There was a significant difference in scores on four of the five assignments: problem solving briefing in person ($M = 83.25$, $SD = 3.36$) and online ($M = 87.25$, $SD = 6.60$); $t(158) = -4.819$, $p < .001$; professional airman presentation in person ($M = 119.2$, $SD = 6.73$) and online ($M = 123.6$, $SD = 7.99$); $t(158) = -4.349$, $p < .001$; core values written assignment in person ($M = 120.2$, $SD = 4.05$) and online ($M = 126.12$, $SD = 10.36$); $t(158) = -4.759$, $p < .001$; and capstone assignment in person (M



Table 6*School 3 Student Learning Data by Assignment*

Assignment	Mean		SD		Range		Sig
	In-Person	Online	In-Person	Online	In-Person	Online	
Mission	177	174	10.14	16.8	44	60	0.208
Prof. Amn.	138.3	139	5.57	8.4	23	32.5	0.606
Prob. Solv.	96.1	97.3	2.8	3.4	12	10	0.03
Core Value	131.4	129	7.59	11.83	36.67	55	0.194
Capstone	353.3	360	14.07	28.61	69.6	120	0.117

= 284.51, $SD = 7.94$) and online ($M = 292.45$, $SD = 22.1$); $t(158) = -3.023$, $p = 0.003$. Effect sizes ranged from .48 to .75, which are considered medium per Cohen (1988).

These results suggest that online learning affects student achievement in School 1. Specifically, results suggest that students at this ALS schoolhouse achieve significantly higher grades when completing assignments online as opposed to in person.

School 2. Independent samples t -tests were conducted to compare School 2 student scores across five assignments in online and in-person learning environments (see Table 5). There was a significant difference in scores on four of the five assignments: mission presentation in person ($M = 169$, $SD = 8.09$) and online ($M = 181$, $SD = 10.04$); $t(188) = -9.34$, $p < .001$; professional airman presentation in person ($M = 1.32$, $SD = 7.75$) and online ($M = 140.1$, $SD = 6.65$); $t(188) = -8.511$, $p < .001$; problem solving briefing in person ($M = 91.39$, $SD = 4.39$) and online ($M = 93.58$, $SD = 4.41$); $t(188) = -3.432$, $p < .001$; and capstone assignment in person ($M = 330.1$, $SD = 21.64$) and online ($M = 341.2$, $SD = 25.31$); $t(188) = -3.189$, $p = .002$. The effect sizes ranged from .49 to 1.35, which are medium to much larger than typical, respectively, per Cohen (1988).

These results suggest that online learning influences student achievement in School 2. Specifically, results suggest that students at this ALS schoolhouse achieve significantly higher grades when completing assignments online as opposed to in person.

No School 2 students recorded a perfect score on the mission brief or capstone assignment in six months of in-resident courses, but 22% ($n = 39$) of students obtained perfect scores on the mission briefing, and 6% ($n = 12$) of students obtained perfect scores on the capstone in six months of online ALS.

School 3. This study conducted independent samples t -tests to compare School 3 student scores across five assignments in online and in-person learning environments (see Table 6). There was a significant difference in scores on the problem-solving assignment in person ($M = 96.1$, $SD = 2.8$) and online ($M = 97.3$, $SD = 3.4$); $t(114) = -2.203$, $p = .03$. The effect size was .49, which is typical per Cohen (1988).



These results suggest that online learning did not generally influence student achievement in School 3. Specifically, results suggest that students at this ALS schoolhouse do not achieve significantly higher grades when completing assignments online as opposed to in person.

Discussion

ALS schools around the globe pivoted to online learning environments due to the COVID-19 pandemic. To evaluate the efficacy of these online courses, this study examined 12 months of online and in-person process, demographic, and student learning data from three of the largest ALS schools, analyzing data from 1,183 students representing all Air Force specialties expected to attend ALS courses.

Data revealed no difference in course length or student travel and lodging costs when comparing online and in-person ALS courses. Instructor training took as long or longer to complete in the online environment compared to in-person learning environments.

The average student cohort size varied when comparing online and in-person learning. Schools 1 and 2 had a larger average student cohort size in person, while School 3 had a larger average cohort size online.

Total course disenrollments dropped from three to one in a six-month period after schools switched to online learning. There were no disciplinary releases from online courses, while in person they accounted for 100% of student disenrollments. These changes in disenrollments cannot be explained by currently available data and require a qualitative approach to investigate the cause(s) for this shift in demographic data.

Results indicated that students in Schools 1 and 2 displayed a significant difference in grades in the majority (80%) of assignments, scoring higher grades in online learning environments than in-person environments. Students in School 3 displayed a significant difference in grades on one assignment in the online learning environment, but generally did not have significantly different scores when comparing online and in-person learning environments.

Hypothesis Findings

Hypothesis 1 was partially supported, as there was no variance in course length. However, there was a variance in disenrollment rates and student body sizes when comparing online and in-person instruction. Hypothesis 2 was also partially supported, as School 3 instructors trained for the same amount of time online and in person. However, Schools 1 and 2 had longer training times in the online environ-



ment. Hypothesis 3 was not supported, as there was a statistically significant difference in grades across most assignments analyzed in this study.

Conclusion

Keys (2021) collected and analyzed perceptions data when evaluating the efficacy of online USAF EPME and found that instructors generally felt confident and competent when teaching online, despite not having received specialized training to do so. The study found that instructors felt online EPME courses to be generally effective. This study adds additional data supporting the efficacy of online EPME as process, demographic, and student learning data revealed that students in three of the largest ALS schools generally performed significantly better in online environments than in-person. There were no student disenrollments due to disciplinary issues in the online courses. In addition, the switch to online learning affected neither course length nor student travel and lodging costs.

Limitations and Future Research

This was a quantitative study focused on examining what the differences were between leadership training presented in two different delivery methods, but did not focus on why the data differed, as that data is best collected in a qualitative manner. Now knowing that there were statistically significant differences across data types in USAF EPME before and after the switch to online learning, future qualitative research should focus on learning why these differences occurred. Potential qualitative research questions follow:

- ◆ Why were instructor qualification timelines longer during online courses than in-person courses?
- ◆ Why did School 2 have perfect scores on assignments in the online environment, but not in the in-person environment?
- ◆ Why were there no disciplinary disenrollments in the online courses, while there were disciplinary disenrollments in person?
- ◆ Why were grades in School 3 significantly different on only one assignment, while grades in Schools 1 and 2 were significantly different across most of their assignments?

This research examined three of the largest ALS schools for active-duty USAF personnel. Future studies should collect data from additional ALS schools to generalize findings more accurately to the EPME enterprise. Additionally, while instructor training timelines were as long or longer in the online learning environment as they were in person, no data was available to determine whether instructors remained in a training



status when EPME courses were paused at the beginning of the COVID-19 pandemic. This possible inability to continue instructor training during class pauses may have potentially increased the length of instructor training timelines. Finally, while this study compared each school's in-person and online courses, future studies should compare schools to one another, including the ALS school for Air National Guard students. ❧

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Strengthening Army Systems to Support Learning in the Affective Domain

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Abstract

U.S. Army soldiers execute missions in increasingly complex operational environments (OE) that tax their abilities and skills across all human domains. Affective competencies, such as resilience, fortitude, and emotional intelligence, are vital to today's soldiers and leaders. Yet current Army training and education efforts do not adequately address affective domain learning, to the detriment of soldiers and of the Army as a whole. The roots of today's deficiencies in affective domain learning are founded on very real historical and theoretical realities that shaped the initial vision around the formation of the Army's Training and Doctrine Command (TRADOC). Changing conditions in the OE as well as in Army personnel suggest that the Army needs a revised approach to affective domain learning that is in keeping with recent research and with the initial strategic vision of TRADOC as a learning organization.


The U.S. Army is working to create a culture of comprehensive fitness (U.S. Department of the Army [DA], 2014). The Army's "People First" campaign highlights the value of individual soldiers and the importance of their health across all domains (DA, 2022). Initiatives such as Comprehensive Soldier and Family Fitness (DA, 2014), Holistic Health and Fitness (DA, 2021), and Master Resilience Training (MRT) (DA, 2014, para. 4-3) are vital; they seek to support the well-being and readiness of soldiers across the soldier's career life cycle. Yet these initiatives will not make lasting change unless the values they represent become more broadly established in Army institutions and culture (Neumann & Forsyth, 2008). While some domains of wellness have received significant attention, the emotional (or affective)

domain has generally garnered less emphasis. Several individuals, as diverse as a U.S. Military Academy professor (Cutright, 2022), a U.S. Army Command and General Staff College (CGSC) faculty member (Sewell, 2009, 2014), and a CGSC student (Taylor-Clark, 2015), have identified deficiencies in the Army's approach to the affective domain (see also Penrod, 2010; Walters, 2018; Waxler, 2020). But deficits in the affective domain development of soldiers have yet clearly to be traced in relation to U.S. Army Training and Doctrine Command (TRADOC) doctrine and practice. Affective domain development needs additional emphasis in Army learning contexts, but many Army learning systems are not currently well set up to support this need.

Past Revolutions; Promising Possibilities

The challenges identified here in relation to the Army and the affective domain are surmountable. The most difficult aspects of change may be changing culture. "Suck it up and drive on" is a common truism that encapsulates an aspect of the cultural mindset in the Army that downplays the importance of the affective domain. The ramifications of this attitude in the contemporary Army are many and various (Steele, 2011). Yet this dynamic within Army culture, especially as it relates to training and education, has not always existed, and it arose from specific historical realities. A clear understanding of the past can give insight into future possibilities.

The Vietnam-era draft Army influences the Army's relationship regarding the importance of the affective domain. This influence continues to be felt in the Army today. During Vietnam, Army training and education focused on preparing draftees, who by-and-large did not want to be there, for the horrors of combat. Affective motivation or development seemed both unnecessary and undesirable for a population who just wanted to get the job done, get home, and get out of the Army.¹ This attitude largely differed from that of the soldiers who fought in the Army's most recent conflicts at that time, Korea and World War II.² Gen. George C. Marshall said on the eve of the Second World War, "The soldier's heart, the soldier's spirit, the soldier's soul, are everything. Unless the soldier's soul sustains him he cannot be relied on and will fail himself and his commander and his country in the end" (Marshall, 1986, p. 535).³ Though the realities of Army training efforts did not always live up to this ideal during the World War II era (Stouffer et al., 1949, pp. 71, 78), similar emphases by senior Army leaders during past eras broadly indicate acceptance of and greater competency in the affective domain throughout American society.⁴



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Reforms after Vietnam in how the Army trained soldiers created, even inadvertently, very different emphases (Brownlee & Mullen, 1988, pp. 182–189; DA, 1976, para. 1-3-1-5; Hebert, 1988, pp. 54–56). The creation of TRADOC itself in 1973 was in response to senior Army leaders' frustrations with the Army's preparation of soldiers for the Vietnam War under the legacy Army Training Program that had been in place since World War I (Chapman, 1994, p. 3; TRADOC Military History Office, 2003, Preface). The beginning of TRADOC coincided with the rescission of the draft, and a related new approach to Army training that used time-to-task as a primary consideration for training a brand-new conscript force in the event of another large-scale conflict. Army senior leaders saw the Army Training Program model as ineffective for an anticipated future; a new "systems approach to training" replaced it (Chapman, 1994, p. 5). Central to this effort was

a new concept of performance-oriented training and a concept of a systematic way to go about the setting of training objectives through the careful determination of tasks to be trained, conditions under which certain training would be required, and the setting of standards. (TRADOC Military History Office, 2003, Chapter V)

This model, which is the basis for the system in use today, was a part of a "train-evaluate-train" program that would require soldiers to perform to established standards" (TRADOC Military History Office, 2003, Chapter V). These methodological changes were accompanied by organizational changes. TRADOC "reoriented so that it had a larger training, as opposed to educational, aspect" (TRADOC Military History Office, 2003, Chapter V). Something significant may have been lost by streamlining Army learning; calculated efficiency provides many benefits, but human complexity often resists its analysis. The "train-evaluate-train" cycle works well in relation to discrete task training, but falters in areas (such as education) where evaluation is more onerous, time-consuming, or requires more complex methodologies. Difficulties associated with measurement slow down the entire cycle, which is a significant issue for a process that was originally designed for speed and efficiency. Complexity in measurements also bucked against the guidance of TRADOC leadership who desired "not only realistic training but an instrumented environment that could take advantage of rapidly advancing technology to provide data that could be analyzed to evaluate the effects of training" (Chapman, 1994, p. 10). These policies, ever since their implementation, sidelined the ability of the Army to train and educate in the affective domain.

Many who are part of Army learning systems do not know the historical origins of processes and procedures that limit use of the affective domain within TRADOC and the Army more broadly. Many of the processes, procedures, and values of contemporary Army learning bear a striking resemblance to those of the Army almost 50 years ago. Even though the actual people who comprise the Army are different in both ob-



jective and more intangible ways, many learning frameworks remain unchanged in the five decades since these large-scale changes were implemented. Despite, and perhaps because of, this distance between these historical factors and today's personnel, continued analysis is needed. An all-volunteer force in the post-Vietnam draft era has different learning needs than the Army that arose out of that conflict, and the conflicts that followed it.

Affective Domain Functioning

Humans are affective beings (Krathwohl et al., 1964). Emotions are fundamental to soldiers precisely because soldiers are human beings (Ong et al., 2011; Ortner & Pennekamp, 2020; Pressman & Cohen, 2005; Sherman, 2011). While this reality is ever-present, there are important historical and societal reasons for considering it now, especially given recent dynamics in the Army named above. Properly regulated emotion is powerful in its ability to elicit self-reflection and self-discipline, to stir others to courageous action, to establish empathetic emotional bonds, and to support effective leadership (DA, 2019b, 2021; Hudson, 2016; see especially DA, 2021, para. 3-3, 9-7, 9-27). Immature emotional development, conversely, degrades human competency and can even erode achievement in other domains (Cohen & Pressman, 2006; DA, 2019b, para. 8-45). The competency of emotional intelligence (EQ) is vital to proper human functioning and is comprised of “self-awareness, self-management, social awareness, and relationship management” (Goleman & Boyatzis, 2017; see also DA, 2019b, para. 3-10, 4-11, 4-25, 5-9, 5-57, 6-7, 6-14, 6-31, 8-6; Goleman, 2005; Mayer et al., 2008). These areas encompass both healthy internal emotional functioning and healthy external relationship to others (Contreras-Huerta et al., 2020). The impact of EQ is demonstrable across a variety of realms. A lack of development in EQ leads to deficits in fundamental aspects of human functioning. EQ is significant in relation to trauma and stress responses (Austin et al., 2010; O'Connor et al., 2017), positive leadership capabilities (Garcia Zea et al., 2020; Koh & O'Higgins, 2018; Mills, 2009; Valor-Segura et al., 2020), and holistic health more broadly (Anand, 2021; Thomas & Zolkoski, 2020).

Army policy and doctrine support this assessment of the importance of emotional intelligence. Army Doctrine Publication 6-22, *Army Leadership and the Profession*, states, “The physical demands of leadership during repeated deployments or continuous operations can erode how well one thinks and emotional stability, both of which are essential to the effective decision making required for sound leadership” (DA, 2019c, para. 3-6). But this capability is about more than leadership. Emotional health is important at all levels of Army organizations: “Teamwork increases when teams operate in a positive, engaging, and emotionally safe environment” (DA, 2015a, para. 1-22).



If these key areas of functioning remain underdeveloped, potentially devastating consequences may follow for individuals and formations. Emotional regulation is especially important for soldiers because their duties inherently involve stressful situations away from the normal support structures that most individuals rely on (such as family, stability of place, and long-term friendships). The “closed” system of the Army organizational structure also means that the effects of poorly formed EQ in a leader can have far-reaching impacts (DA, 2019c, para. 5-47, 8-45). EQ competency, even in a very individualized area such as self-management, can impact relationships, readiness, and morale throughout an organization. Even so, individual change is possible; EQ can be trained and developed in individuals, as many studies suggest (Barron & Rose, 2021; Kotsou et al., 2019; Mattingly & Kraiger, 2019).

Affective Domain Development

Despite widespread evidence for the significance of affective elements of human development, this emphasis is not yet fully reflected in Army learning efforts or the organizational structures that support them. Recent changes in Army doctrine, such as revisions to Field Manual 7-22, *Holistic Health and Fitness* (DA, 2021),⁵ as well as chief of staff of the Army campaigns such as the “People First” campaign, and other Army-wide efforts (Azimuth Check,⁶ MRT), indicate a serious concern for the importance of emotional and relational health for soldier well-being and Army readiness. Army efforts have an organizational component as well. The Army seeks to develop soldiers, including in the affective domain, across the lifecycle and through institutional, operational, and self-development learning (DA, 2017, para. 1-2). A deficit in affective domain formation is most evident in Army learning systems and doctrine. TRADOC doctrine, policy, and procedures currently do not adequately account for the importance of affective domain formation in soldiers. The actual processes and products of Army learning systems are not fully aligned with the stated goals of the U.S. Army in relation to holistic health because they often exclude affective domain development. The practice of undervaluing learning in the affective domain is worrisome because the affective domain is fundamental to human well-being at both individual and communal levels (Asma & Gabriel, 2019; Ong et al., 2011; Pressman & Cohen, 2005).

The Department of Defense directs that all military departments develop training and education outcomes in three domains of learning: psychomotor, cognitive, and affective (U.S. Department of Defense [DOD], 2022, para. 6-3). TRADOC doctrine also recognizes these same three learning domains (DA, 2017, para. 3-2b[2]). This recognition is consistent with widely accepted educational learning models and theories. Standard learning taxonomies identify levels of learning within distinct domains. Bloom’s (1956) learning taxonomy is a well-known description of levels of



learning in the cognitive domain, which is foundational to TRADOC's Army learning model (ALM) (DA, 2017, para. 3-5; see also the revision of Bloom's original cognitive taxonomy, Anderson et al., 2001). TRADOC doctrine is not as focused on the affective domain. It describes affective learning as largely occurring through experience, rather than explicitly through training or education (DA, 2017, para. 3-2b[3]).

The affective domain is nevertheless interesting to Army learning communities. TRADOC policy suggests using Krathwohl's affective taxonomy,⁷ in which "levels are situated within the emotions and feelings related to the acceptance or rejection of the educational content" (DA, 2018a, para. 5-5b). The Army's approach to the affective domain differs markedly from its approach to other domains. The Army is largely interested in the affective domain to motivate and facilitate learning in the other two domains, rather than as a learning domain itself.⁸ Emotion primarily has to do with student motivation, leading to better internalization of content in Army learning. Affective growth is rarely a stated objective of Army learning. TRADOC Pamphlet 350-70-7, *Army Education Processes*, suggests that developers should design instructional materials to "[d]evelop the Taxonomy of Educational Objectives. Determine the cognitive domain level of your lesson. Consider ways to introduce affective domain behaviors into you lesson" (DA, 2018a, para. 5-2b[2]). The cognitive domain drives learning here; the affective domain is a nice add on.⁹

Army definitions of the affective domain reinforce its use to support learning in other domains, but these definitions include other possible uses. TRADOC Regulation 350-70, *Army Learning Policy and Systems*, defines the affective domain as "[t]he domain that examines a student's ability to internalize what is learned in the form of feelings and attitude" (DA, 2017, p. 127). The affective domain "concentrates on emotions, beliefs, attitudes, values, and feelings" (DA, 2018a, para. 5-5a[2]). Affect is especially important in relation to attitudes that promote soldier learning and performance because attitude is one of three key elements that facilitate learning through targeted design and development work (DA, 2017, para. 3-19b[3]; see Green & Batool, 2017, for evidence of this conclusion). The ALM enshrines this use of the affective domain in TRADOC policy—the concrete experience within the ALM is the most visible example of this treatment. The concrete experience "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" (DA, 2018a, p. 39). The affective domain becomes an enabling force rather than a discrete area of learning and growth.



Deficits in the Use of the Affective Domain in Army Learning

Programs of learning that do not fully leverage affective domain growth lose sight of fundamental aspects of soldier emotional health, expressed in concepts like EQ

and emotion regulation. Methodological realities constrain what the Army chooses to train. Critical training requirements in the Army focus on the performance of tasks that support the Army mission (DA, 2017, para. 3-14). Work in the Army is largely task-driven, with Army-identified tasks, or series of tasks, taking center stage: reading a map, cleaning a weapon system, or flying a helicopter, for instance. These tasks are discrete, observable, measurable, and achievable—all characteristics that TRADOC identifies as fundamental to the ability to train in support of the Army mission (DA, 2017, para. 3-14b[1]). For these reasons, Army learning centers on cognitive and psychomotor domains of learning—a soldier or group of soldiers knowing how to perform a task, and then performing it.

Observing and measuring learning is vital to Army training. If a soldier cannot read a map or clean a weapon, or if a pilot cannot fly a helicopter, these individuals are mission incapable. Army trainers, and ultimately commanders, must be able to validate that a soldier can adequately accomplish assigned tasks. These tasks are foundational to Army learning; each career field has an ICTL (individual critical task list) and a CCTL (collective critical task list) that define minimum basic functioning. These tasks and lists are drawn solely from the cognitive and psychomotor domains.

Terminal learning objectives (TLOs) are central to training and education. These specific learning objectives define learning goals for Army learning products through identifying task, condition, and standard (DA, 2017, para. 3-14b[2]). Yet the Army needs soldiers to do things that cannot be fully or solely captured through tasks. Army education centers on the development of professional competencies (DA, 2017, para. 3-2b[2]). Professional certifications, standards, and ethical principles define benchmarks of professional competence in the same way that critical task lists provide standards for tasks. Education tends to be more compatible with affective domain development than training, but the Army made a conscious decision to emphasize training over education for specific historical reasons (TRADOC Military History Office, 2003, Chapter V). The effects of this decision are still realized. The Army's focus on training addresses critical tasks in the psychomotor and cognitive domains that are necessary for mission accomplishment. Yet soldiers can become mission incapable for reasons outside of an inability to meet training standards in the cognitive and psychomotor domains.

The Army should therefore consider how an increased focus on affective domain development in soldiers might increase readiness. Deficits in soldier affective functioning in recent history (Suits, 2020) suggest that the Army could strengthen its training and education in the affective domain. Anecdotally, the author is aware that planned training relating to emotion has been scrapped because instructors felt uncomfortable or unqualified to teach with the material. This reluctance extends beyond instructors. Soldiers, it seems, are often reticent to engage with training related to the affective domain. This reality can push aside soldiers' human experience while at the same time fails to provide soldiers with tools to properly address affective



components of their experiences. Soldiers who do not have adequately developed EQ can act out in negative ways (Keeling et al., 2020): they may have trouble creating meaningful relationships (Contreras-Huerta et al., 2020) or they may become toxic leaders (Mills, 2009; Steele, 2011). Whether acknowledged or not, affective functioning affects almost every part of the Army's ability to accomplish its mission. To address these deficits, Army learning efforts must identify deficiencies to prevent and mitigate against them.

Ambivalence Around Soft Skills and Affective Assessments

Clear difficulties exist around these efforts, however, and affective domain learning is not currently emphasized in many TRADOC environments for some good reasons. Emotion cannot be directly assessed (DA, 2021, para. 9-2)¹⁰ and therefore, by definition, cannot be a learning objective in Army learning as policy currently allows (DA, 2018a, para. 5-5c). This requirement constrains training and educating about affect, emotion, and EQ in TRADOC learning contexts. Army TRADOC systems and processes constrain Army learning organizations from developing and training learning products that focus on the affective domain. Army schools and centers of excellence cannot create lesson plans or programs of instruction that center learning in the affective domain. TRADOC Regulation 350-70 has clear stipulations around learning objectives. For example, learning objectives must “[c]orrelate to an observable action so as to create measurable tasks (for example, ‘perform’ is an observable action verb, but ‘appreciate’ is not observable or measurable)” (DA, 2017, para. 3-14c[1][a]). This guideline, as well as the example that accompanies it, stipulates that affective domain learning is off-limits in TRADOC learning settings—to “appreciate” is, in fact, to say something about the affective state of the individual in question.¹¹ The absence of sustained training and education in the affective domain is pervasive in Army learning such that TRADOC's list of standard verbs for task titles (comprised of 195 total verbs and which defines what verbs are approved for use in TLO statements for lesson plans, see DA, 2019a) does not have a column for the affective domain. TRADOC's Combined Arms Center maintains an affective domain verb list, but this unofficial list primarily supports cognitive and psychomotor domain learning, rather than supporting affective domain learning as an end in itself (Zoch, 2020).¹² These realities mean that TRADOC policy does not allow for a single task or lesson plan (LP), of some 68,000 approved lesson plans housed in Training Development Capability and taught in 200 courses across dozens of schools, to center primarily in the affective domain.¹³ This seems like a large omission, given that this is one of three learning domains identified by DOD and the Army. It is also concerning because researchers increasingly recognize this domain as vital to human functioning (Ong et al., 2011).



The affective domain presents distinct difficulties in relation to assessment within Army learning systems. Assessment of whether a soldier has met affective learning standards is difficult for instructors to determine reliably and quickly. Self-reporting is the quickest and most readily used means of assessing affective domain competence, but it is also among the most unreliable. Emotional openness, on the part of an individual, and empathy toward others are significant affective goals with positive outcomes supported by research (Ratka, 2018; Wharne, 2020), but each is hard to validate externally. There are few, if any, external correlates to set reliably as learning goals or to use as standards against which to assess student learning. The difficulty of assessing affective domain growth makes affective domain learning challenging to conduct. The validity and necessity of affective domain learning, however, means that this cannot be the end of discussion. Growth (or lack thereof) in the affective domain has very real implications for individual soldiers and for the Army. Senior Army leaders have recently been receptive to strengthening affective domain learning, but more needs to be done through changes in policy and culture.

An additional difficulty with affective domain growth is that it is usually more easily seen in relation to its absence. External circumstances will often reveal a dearth of emotional regulation. Growth in the same arena, however, may only be recognized over time through observation in multiple contexts. This longitudinal individualized approach to assessment goes against TRADOC's historic desire for readily available cross-sectional information on a broad swath of trainees. The scope and methodology of assessment is quite different for each domain. Affective domain learning often occurs through indirect means rather than through the direct methods that are familiar to instructors more comfortable in the cognitive and psychomotor domains. This also speaks to the larger timescales required for affective domain growth, and for the measurement of this growth or regression. Affective domain learning, such as changes in beliefs or attitudes, generally takes much longer to occur than discrete knowledge accumulation or task competence. Affective domain learning, especially at advanced levels, may be best suited for operational or self-development learning contexts. TRADOC may most effectively influence learning in these contexts through the development of training support packages and other training products to facilitate this growth.

Growing in the Affective Domain

At stake here is a move to focus on subject matter in the affective domain itself, such as emotion regulation. This shift goes beyond merely identifying educational means of helping soldiers move up Krathwohl's affective taxonomy for the sake of increased student motivation or information retention. Concrete strategies (e.g., modeling, conditioning) exist for increasing affective domain functioning with effects in competencies



such as emotion regulation (Holt & Hannon, 2006; Neumann & Forsyth, 2008; Pagatpatan et al., 2020); the problem is that the Army is not systematically and comprehensively applying them to the specific subject matter of affective domain learning itself.

Affective domain learning is important even if it is difficult to quantify, measure, or observe (Hu et al., 2020; Witt, 2015). Affective competency matters both because soldiers function in the Army in their own rights as human beings and because soldiers interact with one another (Contreras-Huerta et al., 2020). It matters whether a leader can regulate emotion (DA, 2019b, para. 8-47–8-50). It matters whether soldiers feel a sense of loyalty to their country and to their teammates (DA, 2015a, Table 6-1). It matters whether a soldier can communicate empathetically with others (DA, 2015a, Table 6-1). None of these vital competencies can be specifically developed or measured within the affective domain inside many current TRADOC contexts. This reality does not diminish their centrality to soldier and unit well-being. Competencies in the affective domain are especially important for those whose roles in the Army depend on affective skills, such as leaders (DA, 2019b, para. 1-74; Friedman, 2017), behavioral health providers (Nelson et al., 2020), and chaplains (DA, 2015b, para. 3-3).

Existing Army learning efforts to address affective domain deficits in soldiers do not directly focus on affective domain growth or specifically employ affective domain learning strategies.¹⁴ Current attempts focus almost exclusively on cognitive learning at the expense of affective subject matter—for example, conveying information about topics related to emotion or changing thinking patterns that may affect emotion but nonetheless still targeting cognitive domain function and using cognitive domain tools. These efforts often can have tangible effects in the affective domain, as evidence regarding cognitive-behavioral therapy shows (Hofmann et al., 2012), but they are still not directly supporting affective learning (Olatunji, 2014).

Teaching to think about feeling is different than feeling. Growth in the cognitive domain, even growth in knowledge about emotion, is fundamentally different than affective domain growth itself and requires a different approach to learning. Lesson plans about EQ exist, for instance, but by the standards TRADOC itself sets, the goal of these lessons can never directly target increasing affective functioning. The lesson plan's TLO can only rise to the level of cognitively learning about EQ, not actually focusing on affective competence or personal emotional integration. Achieving affective growth is often much more difficult and prolonged than growing in psychomotor or cognitive prowess.

Emotional connection, relationships, and meaning making are all important to human wellness—and these capabilities must be developed, shaped, and formed. The Army cannot assume that soldiers have these capabilities. The Army should help soldiers learn to regulate emotion and develop healthy emotional connections. Positive steps toward portions of this goal are already underway. Existing Army efforts reliably measure holistic soldier fitness, including in the affective domain, through



efforts such as ArmyFit/Azimuth Check.¹⁵ The Army is measuring the effects of a deficit in affective domain functioning, but it is not systematically training or educating toward developing these competencies.

The ramifications of the Army's lack of education in the affective domain are increasingly clear. Soldiers' emotional health, overall, is poor, with negative consequences such as engaging in harmful behaviors and suicide (Keeling et al., 2020; Lieberman, 2018; Sparrow et al., 2017). The Army is often not teaching soldiers the affective domain skills they need to be successful as human beings, even less as representatives of the federal government entrusted with power to take life and limb. These, it seems, are not competencies that soldiers have received elsewhere in their formation or during their time as civilians, and these affective domain deficits are having a negative effect on the Army (Suits, 2020). Soldier health and readiness may decline if the Army does not address this deficit in affective domain development (Ong & Thompson, 2019). Such changes require organization-level solutions, with associated alterations to structures, systems, and culture.

A Way Ahead

Changes to Army learning begun in 1973 brought about many beneficial effects but also highlighted areas of concern. The move during this era to focus on discrete and measurable tasks has borne much fruit, even as it has limited the scope of what the Army can train or educate. It is true that very real difficulties exist relating to measurement in the affective domain. Affective domain measurement tends to require more individualized, longitudinal, and qualitative measures than the instruments that the Army has grown accustomed to use for quantifying psychomotor and cognitive domain growth. If the ability to quantify the effectiveness of Army learning efforts is one of the main hindrances to substantive inclusion of this domain, then this would seem to be a relatively low bar to meet. The cost and time associated with affective domain measures is worth the investment in the holistic health and wellness of soldiers. To meet this requirement, the Army could focus on the development of a specific theoretical assessment for the affective domain that draws upon current research to meet the needs of the Army as a learning organization.

Changing Army learning culture also requires further education about the importance and appropriate use of the affective domain, first for training developers and instructional support specialists, second for Army leaders such as school commandants, and third for the force at large. This effort would set the stage for developers to use the affective domain in all relevant learning products, supported by appropriate revision to Army learning policies and procedures.

The U.S. Army Chaplain Corps is developing one model for its internal professional development training and education that aims to close the gap in affective domain learn-



ing (U.S. Army Institute for Religious Leadership, 2022). The Chaplain Corps is ideally suited to pilot efforts to help bridge this gap. Because the affective domain “concentrates on emotions, beliefs, attitudes, values, and feelings” (DA, 2018a, para. 5-5a[2]), this would seem to fall in the realm of Chaplain Corps competencies to “Nurture the Living, Care for the Wounded, and Honor the Fallen” (DA, 2015b, para. 2-3c). The Chaplain Corps can play a vital role in the affective domain development and growth of Army personnel, as well as in their spiritual health (Chairman of the Joint Chiefs of Staff, 2013, para. A-3-E; Cook & White, 2018; DA, 2015b, para. 2-3b[2], 9-9, 16-6).


Yet, chaplains themselves do not always possess adequate EQ competencies. In 2020, Chaplain Corps leadership sought to address a gap in professional competency functioning through establishment of professional, including affective domain, benchmarks. The chief of chaplains, Chaplain (Maj. Gen.) Thomas Solhjem, approved a slate of proponent learning objectives called chaplain professional objectives that identify areas of professional function across three domains of function and across the life cycle (U.S. Army Institute for Religious Leadership, 2022). These competencies drive standards of education for chaplains. They complement, rather than replace, critical task lists and are not primarily about training. Capturing these professional objectives in Army learning systems is tricky because the systems focus primarily on tasks. These professional objectives are integrated across training, education, and personnel systems in the Chaplain Corps. They have been put into TRADOC’s training development capability as skills and knowledges rather than attempting to capture them in TLOs. In other words, these can be identified as supporting goals of a lesson plan but are constrained from being the primary goal. Curriculum developers across the Army could work in a similar manner with their proponents to identify relevant affective domain learning areas to integrate into learning products as skills and knowledges. This begins highlighting the importance of the affective domain across the Army learning enterprise by using existing Army systems. Developers and instructors should make use of the affective domain beyond simply aiding learning in other domains; affective domain content deserves to be addressed in its own right.

Army training systems work well for what they were designed to do—teach discrete and measurable repeatable tasks. The question is whether this is enough. The Army should assess its learning systems considering the outcomes-based education guidance given by the Department of Defense (DOD, 2022). It should also evaluate whether these systems still adequately meet the needs of the complex multi-domain operations environment of the future (DA, 2018b), within a mission command framework (DA, 2019c), and in relation to the holistic approach to soldier well-being toward which the Army is moving (DA, 2021). Past revisions of approaches to Army learning show that such change is possible, but it is yet to be fully realized in relation to affective domain development.

This article seeks to be part of the process of continual analysis of the Army’s learning needs that is essential for the success of the Army. This includes assessment



of where doctrine and focus need to be adjusted to meet potential shortfalls. Gen. Paul Gorman, TRADOC's second deputy chief of staff for training, expressed this same sentiment in 1994:

I truly believe that now, as DePuy [TRADOC's first commander] stressed often to me then, the ultimate service TRADOC can perform for the Army is analysis, for without sound concept, no undertaking was likely to prosper—especially one as daunting as providing the doctrine, force structure, weapon systems, and training technology for the future U.S. Army in a world of uncertain dynamism. (Gorman, 1994, p. vii) 

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Notes

1. Understanding the “will to fight” as having a large affective dimension is insightful in considering soldier motivation; it is also interesting to consider in light of changes in approaches to affective domain learning during Vietnam, an all-draft Army, and withdrawal of U.S. forces from Vietnam, in part, due to a lack of continued “will to fight” (see Connable et al., 2019).
2. Early Army leaders, such as George Washington, also made significant use of emotional intelligence in their leadership (Koyn, 2022).
3. While Marshall’s interchangeable use of “heart,” “morale,” “soul,” and “spirit” may lack definitional clarity, his use does place these concepts solidly in the affective domain.
4. Concerns were also present in the World War II-era Army about the ability to measure affective domain competence: “Even when we confine our attention to Army morale viewed as cooperative effort toward a goal set by the Army command, we find such behavior exceedingly difficult to observe and measure. Particularly crucial is the absence of suitable objective criteria” (Stouffer et al., 1949, p. 84).
5. The latest revision includes extensive sections on mental readiness (chapter 9—including a section on emotional capability), and on spiritual readiness (chapter 10).
6. Azimuth Check specifically assesses soldier health in five pillars of fitness: emotional, social, spiritual, family, and physical (see U.S. Department of the Army [DA], n.d.).
7. Significantly, Bloom also was instrumental in developing Krathwohl et al.’s (1964) affective domain taxonomy, but this taxonomy is often less well known and used. The Army also makes use of a psychomotor taxonomy (Dave, 1970).



8. Note, for instance, these further comments: “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” (DA, 2018a, para. 5-5e). This is very much in line with suggestions by some learning theorists, such as Posey (2018).

9. So, too, in the glossary entry in TRADOC Pamphlet 350-70-7: “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” (DA, 2018a, p. 37).

10. Some researchers have developed tools for measuring affective domain development, which hold promise for wider application. For example, see Camelia et al. (2018) and Stephens and Ormandy (2019).

11. This raises the question of how the Army can inculcate affective constructs like the Army Values (DA, 2015a, para. 1-2, 5-2, 5-5, 7-24 and Tables 6-1, 7-14, and 7-16) in soldiers given the identified constraints around training and educating in the affective domain.

12. It should be noted that there is some overlap between these lists, with some verbs (such as “receive”) having meanings across multiple domains, to include the affective.

13. This does not discount that affective domain verbs may be used in enabling learning objectives, but as the name clearly indicates, this use of the affective domain is only subservient to a measurable cognitive or psychomotor domain task. It is possible that lesson plans exist in the Army, and even in TRADOC, that focus on affective domain development, but their existence would be outside the guidance of TRADOC doctrine.

14. MRT is built around the positive psychology work of Martin Seligman. Its efficacy has been questioned in peer-reviewed work by other scholars (cf. Wong & Roy, 2018). The positive psychology that MRT is built on has certain weaknesses, such as needing integration of emotional processing. MRT, while having emotional content as its focus, addresses this material from largely a cognitive processing viewpoint. Even the efficacy of these programs is evaluated in terms of cognitive outcomes (cf. Gutierrez et al., 2021). Research suggests, however, that affective competencies are most closely associated with resilience following trauma (cf. Cook & White, 2018; Wingo et al., 2010).

15. The author served on the advisory board that redeveloped ArmyFit/Azimuth Check assessments for the emotional and spiritual dimensions.



Not That Straightforward

Examining and Enhancing Soldier Development

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Abstract

Within the Army, traditional assessment methods often focus on whether a soldier “has” or “does not have” an adequate level of an attribute or competency. An assumption underlying such straightforward methods is that soldier development is linear and consistent from one context to the next. When soldier development is assessed over time, the resulting graph will appear messy; it is likely to feature peaks and valleys rather than proceed straight forward toward a desired benchmark. This is because context matters. In this article, we present a conceptual approach to understanding the interactions between the elements of attributes/competencies and the contexts in which they are manifested that may facilitate moving from have/have not assessment methods to contextually sensitive methods. Using an example, we illustrate the decomposition of an attribute and the surrounding context to create more granular assessments sensitive to such interactions. We then explore the contextual elements more or less likely to impact specific attribute elements by considering how they relate. The final section of this article contains a short discussion of two potential assessment methods that may allow the concepts presented here to be investigated and applied.

Military personnel must operate in ever-changing environments throughout their careers. The requirement to respond effectively to various situations necessitates that soldiers possess an array of attributes and competencies beyond the tactical and technical skills needed for any given context. These attributes and competencies are described in the Army's leader requirements model (LRM) contained in Army Doctrine Publication 6-22, *Army Leadership and the Profession* (U.S. Department of the Army [DA], 2019a). Targeted assessments are critical to understanding whether and how soldiers are developing various aspects of their leadership capacity.

The Army has rigorous selection and assessment processes that incorporate both cognitive and noncognitive predictors of performance (e.g., Farina et al., 2019). In institutional and unit training environments, a soldier's specific skill or knowledge is often assessed using cutoff scores or other benchmarks that determine whether a soldier "has" or "does not have" an adequate level of a specific skill, attribute, or competency for a given purpose (see Truxillo et al., 1996). This straightforward approach is often necessary to maintain standards in selection and placement; however, the approach needed to support individual growth is one that both determines a soldier's current level of skill and informs strategies for further development. What does it mean for an individual to "have" a certain attribute? Based on that answer, what are the implications for development?

Imagine that a soldier is stationed at Fort Drum, New York. On a brisk, 20-degree early March morning, that soldier completed a two-mile run in a qualifying time. Based on this and other scores, the leader concludes that the soldier possesses high fitness, an element of presence within the LRM. Now that this soldier is deemed to have fitness, can that soldier be expected to have it if he or she maintains his or her workout routine? Suppose that his or her next professional military education course is at Fort Benning, Georgia. On a humid, 85-degree morning in late May, the soldier runs two miles in a nonqualifying time, resulting in a no-go mark on fitness. Does the soldier lack the attribute of fitness now? Did he or she ever have it? Is that even the right question to ask?

To further elaborate, based on what we know so far, the soldier may or may not have fitness; the probability is 0.5. If he or she moves on to Fort Lewis, Washington, that fall and completes the two-mile run in a qualifying time, the probability becomes 0.66. We may now be able to better assert that the soldier has fitness; it is more likely than not. Alone, this simple calculation is not enough. If our true purpose is to predict how this soldier is likely to perform when deployed, we need to know how (and if) Fort Drum and Fort Lewis are similar to each other and different from Fort Benning. We also need to know how the relevant features of such differences are manifested in the region of the upcoming deployment. Generally, we must refine our understanding of change in the attribute of interest and in the context in which that attribute is displayed. Only then may we develop informed predictions and targeted interventions.



In the case of testing for fitness, it is unsurprising that context matters. At a minimum, results are likely to be affected by the weather. Our argument is that regardless of the targeted LRM element, such dependency on context is the rule rather than the exception. Graphs of soldier development are likely to appear unique and jagged (e.g., Rose, 2016) featuring peaks and valleys rather than progressing straight toward a desired benchmark. Soldier assessment and development must be sensitive to these complexities. The Army must bolster traditional assessment approaches to better support individual development throughout a career. From an instructional perspective, the focus must shift from determining whether a soldier has or does not have an adequate level of an attribute or competency to maximizing the probability of a soldier behaving in a desirable way across a range of contexts. Given that the operational environments in which soldiers perform is often dynamic, an approach to assessment that accounts for the details of context will be more useful for predicting success and identifying areas of intervention.

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The purpose of this article is to present a conceptual approach to moving toward contextually sensitive assessment methods. These methods must account for the interactions between the measured attribute and the elements of the surrounding context. Within this article, we provide examples of decomposing the attribute or assessed competency and the surrounding context to create more granular assessments that are sensitive to such interactions. We use an exemplar to identify the contextual elements more or less likely to impact specific attribute elements by considering how the two relate. That level of information enables precise, systematic identification of the areas where soldiers may excel or where additional learning may be necessary. The final section of this article contains a short discussion of two potential assessment methods that may allow the concepts presented here to be investigated and applied. This work complements Army talent management initiatives such as the Army's "Project Athena" that seek to focus soldier self-development activities based on completed self-assessments (Center for the Army Profession and Leadership, n.d.). Our work adds to such efforts by examining how targeted assessments can become more precise by accounting for the surrounding context.

Theoretical Underpinnings

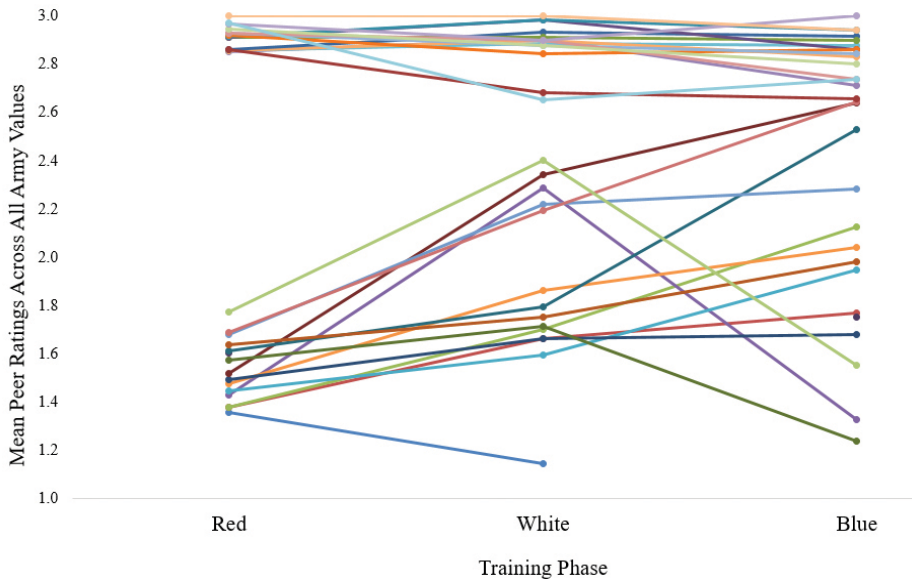
Many developmental theories are stage-based, whether they cover a topic as broad as the human personality or as narrow as leadership skill. Such theories characterize development as a progression through a series of underlying mental structures or schema that typify each stage. Initially simple mental representations become more complex understandings, and these changes potentially extend throughout the lifespan (Kegan, 1982; Kohlberg, 1969). Like Piaget's theory (1952, 1983) in which they are rooted, stage-based theories describe change over time as a progression in the mental structures that a person has, which in turn define his or her developmental stage. The problem with these theories, however, is that development is messier than a well-ordered series of stages implies. Researchers (e.g., Mischel & Shoda, 1995; Rose, 2016; Thelen & Smith, 1994) have argued that a wide range of behaviors depend on if-then signatures (if in context A, then behavior B). These claims imply that developmental milestones are not universal. Instead, the milestones are dependent on the historical and cultural context (Rachwani et al., 2020). The critical insight from these theories is that the behaviors we see throughout human development are nuanced and highly dependent on context.

Like lifespan development, leader development is a complex construct that unfolds differentially over time as leaders face changing contexts. Stratified systems theory (Jacobs & Jaques, 1987) explicitly dictates that the context in which leaders operate changes when moving into different positions. For example, the decision space in which a division commander must operate is broader and more complex



Figure

Mean Values on Peer Ratings for Individual Soldiers across Basic Combat Training Phases



From Toumbeva, T. H., Diedrich, F. J., Flanagan, S. M., Naber, A., Reynolds, K., Shenberger-Trujillo, J., Cummings, C., Ratwani, K.L., Ubillus, G., Nocker, C., Gerard, C. M., Uhl, E. R., & Tucker, J. S. (2019). *Assessing character in U.S. Army initial entry training* (ARI Technical Report 1373). U.S. Army Research Institute for the Behavioral and Social Sciences.

than the decision space in which a company commander must operate. Each new leadership level requires more complex skills. While sound judgment is important for each leader, exercising sound judgment is different given changes in scope, span of control, and scale of the situation. Stratified systems theory lays the foundation for examining the context in which leaders develop and perform.

Applying a stage-based approach in a military context, Bartone et al. (2007) conducted a longitudinal study of cadets at the U.S. Military Academy to examine their psychosocial development and performance as leaders. Significant positive trends in development were found for 47% of the cadets; however, these changes were not shown by the remaining 53% of participants. Data showed that leadership development did not consist exclusively of growth, an insight also noted by Baltes (1987) and echoed by Day et al. (2021). There may be negative changes in the assessed outcomes prior to seeing a positive change (Day & Sin, 2011). Differential growth rates and patterns will occur depending upon the specific skill or competency assessed (e.g., Kragt & Day, 2020).



This idea of individual differences and nonlinear patterns is also supported by recent data on the development of the Army Values (part of the LRM category of “character”). In a series of peer evaluations conducted with trainees during Basic Combat Training (BCT), the trainees rated one another on the degree to which they exhibited the Army Values. On average, these ratings improved over time, suggesting growth in the group. However, the results demonstrated that an individual soldier’s progress varied extensively (see Figure; Toumbeva et al., 2019). Individual trends showed that some soldiers received increasingly higher peer ratings from the beginning (red phase) to the middle (white phase) to the end of the course (blue phase). Some soldiers, however, received higher ratings during white phase compared to blue phase. Others received the same ratings in red and white phases followed by better ratings in blue phase. Interpreting such data becomes challenging. At what point do we say that a soldier has the Army Values?

Collectively, these theories lay the foundation for the idea that development is complex, nonlinear, characterized by individual differences, and impacted by context. To help move toward an understanding of the probability that an individual will perform successfully across contexts, we must decompose attributes and situations to an appropriately granular level.

Attribute and Situation Decomposition

The attributes and competencies described in the LRM are complex and multifaceted. Similarly, the contexts in which soldiers operate vary by mission, team, location, and threat. We argue that to enable more precise comparisons across contexts and over time, the attributes under assessment and the situations where those attributes are exercised must be understood at a granular level. More granular attribute facets and contextual elements can then be mapped to one another to identify the aspects of an attribute likely to be stressed by a given situational element. We illustrate this concept using one exemplar attribute (builds trust) and sample contexts in which that attribute must be displayed. This example sets the stage for future research to investigate these relationships empirically.

Attribute Decomposition

An important part of understanding how an individual develops is identifying how the nuances of the competency or attribute of interest interact with the specific contextual demands the individual faces. Finding an appropriate level of granularity is a significant part of this challenge. The Army’s LRM contains six leadership attributes and competencies, which are further broken down into 24 subattributes and compe-



tencies (DA, 2019a). For example, the subcompetency “builds trust” (a component of the larger category “leads”) is defined in such a way that it can be distilled into multiple elements. If the focus is broadly on how builds trust develops over time, it may be difficult to predict the specific contexts in which a soldier will struggle or excel. This difficulty is because the contextual demands faced by the soldier are likely interacting with elements at a finer level of granularity. An appropriate level of granularity would be one that can be shown to directly relate to contextual demands, and ideally, one that enables actionable feedback. This does not imply a fully reductionist approach. Instead, from a functional perspective, the issue is the level of granularity that permits reliably using attribute-situation interrelations to understand and guide development.

Builds trust is useful to consider as an example because it is foundational to effective mission command (DA, 2019b), and as such, speaks directly to how the concepts introduced here might be applied to a critical issue for the Army. The first step in decomposition was reviewing relevant literature for extant conceptualizations of dimensions relating to building trust. Next, we referenced previously developed behavioral rubrics to determine facets and themes based on how builds trust has been operationalized for various Army contexts (e.g., Ingurgio et al., 2020; Toumbeva et al., 2018).

Based on our review, trust is generally defined as positive perceptions, beliefs, or expectations about the intentions of others and their competence, benevolence, integrity, and dependability, irrespective of the ability to monitor or control them (Dietz & Den Hartog, 2006; Mayer et al., 1995; Möllering, 2006). Trust is strengthened over time in several ways (Lewicki et al., 2006; Shapiro et al., 1992). Trust grows as individuals *communicate* through repeated, tactful, and multifaceted interactions that enable individuals to get to know one another so well that one person can predict the other’s behavior (e.g., what the other thinks, prefers, wants, does, needs). Engaging in two-way communication that enables the sharing of knowledge and information contributes to the development of mutual understanding and trust. Trust is also developed as individuals create a collective (shared) identity, purpose, and vision over time and demonstrate a reciprocated interpersonal care and concern. This aspect of trust is reflected in individuals taking consistent, deliberate, and voluntary action to provide *support* to one another at the right place and time, without bias or display of favoritism, and ideally in a proactive manner. Support may be emotional, physical, or instrumental. Support entails looking out for others, protecting their interests, accessibility, modeling positive behaviors, and empowering others. Trust is also based on *participative decision-making*, as characterized by cooperative, inclusive behaviors such as consulting others, proactively seeking others’ perspectives, and giving feedback in a respectful manner while making decisions. Consistently demonstrating *sound decision-making* builds confidence in the competence of others and fosters trust. As individuals learn they can count on others to perform actions consistent with training and development in their role, they become more comfortable taking risks



Table 1*Relating Elements of Builds Trust to Situational Factors*

<i>Element</i>	<i>Coding Questions</i>
Communication	Does the situation require individuals to regularly communicate through repeated, tactful two-way interactions to build mutual understanding?
Support	Does the situation emphasize the need to provide emotional, physical, and/or instrumental support at the right time and place?
Character	Does the situation stress the need to demonstrate character in attitudes and actions?
Participative Decision-Making	Does the situation require cooperative, inclusive behaviors such as consulting others to reach a decision?
Sound Decision-Making	Does the situation stress the need to make decisions that meet objectives in a manner consistent with training and development?

and accepting vulnerability. Good *character*, reflected in an individual's moral attitudes and actions, is a critical driver of trust and greatly influences perceptions of trustworthiness. Examples of character include doing what is right despite risks for adverse consequences, taking the hard right over the easy wrong, placing mission over personal needs, honesty about one's own strengths and weaknesses, and behaving in a manner that demonstrates integrity, respect, empathy, and loyalty.

Collectively, these findings suggest that critical elements for building trust include communication, support, participative decision-making, sound decision-making, and character. To enable considerations of how a situation might differentially draw upon these elements, Table 1 shows example questions that could be asked to understand the element-specific stressors of a situation, which might be coded as yes/no or high/medium/low.

Situation Decomposition

Similarly, we explored the situation decomposition process by conducting a review of relevant literature and holding discussions with subject-matter experts (SME) to explore how factors might impact behavior. For the SME contributions, two retired noncommissioned officers helped the research team translate existing frameworks into dimensions that might be usefully applied to military settings. Both SMEs had over 20 years of experience in the Army, during which they developed their skills across a wide variety of situations. Both had also served as instructors throughout their careers which allowed them to provide insights into what types of experiences would be developmental in nature for soldiers.



First, we reviewed extant taxonomies of situational elements from the literature. DIAMONDS is a popular taxonomy that breaks down situations in terms of eight psychologically meaningful dimensions (duty, intellect, adversity, mating, positivity, negativity, deception, and sociality), thus providing a common language for research in this area (Rauthmann et al., 2014). The CAPTION model contains another set of dimensions (complexity, adversity, positive valence, typicality, importance, humor, and negative valence) that have been shown to predict psychological outcomes such as behavior and motivation (Parrigon et al., 2017). Each situational framework breaks down the environment into measurable and quantifiable elements that are perceived as psychologically salient, such as persons/interactions, events/activities/objects, and location (i.e., who, what, and where; Rauthmann et al., 2014). In working with the SMEs, we reviewed these taxonomies based on knowledge of what is meaningful in military settings. For instance, within DIAMONDS, the dimension of adversity is captured by the question: *Is someone threatened?* This dimension seems clearly relevant for military operations. In contrast, the dimension of mating is less relevant and is defined by the question: *Is the situation sexually or romantically charged?*

Based on this initial review, we then worked with our SMEs to identify similar questions that might be asked about contexts that a soldier may encounter. We explored the nature of these example contexts using questions such as those in the DIAMONDS framework, which were iteratively expanded and refined. The purpose of this step was to build on the elements derived from the literature. This ensured their utility in describing various military settings.

The resultant situational elements framework is contained in Table 2. The elements were categorized according to who was involved in the situation, what was to be done, where the situation was occurring, and how the task demands shaped the necessary efforts. Like the attribute decomposition, when exploring example situations, each element was expressed as a question that could be coded (e.g., yes/no, high/medium/low). The situational elements that will be relevant when assessing a given competency are likely to vary (e.g., the physical demands are more likely to matter when assessing fitness than builds trust), as we hypothesize that the interaction between situational elements and competency/attribute elements is of primary importance.

Example Situation and Attribute Mapping

To illustrate application of the approach, SMEs used the questions shown in Table 2 to examine sample contexts. For example, one situation considered was the Teamwork Development Course (TDC) in BCT. The TDC includes a variety of obstacles that, to successfully overcome, require the trainees to collaboratively solve problems. The obstacles vary in difficulty, require completion within a certain time, and include the resources necessary to succeed. The possible solutions are not obvious. While the train-



Table 2
Situational Elements Framework

WHO (Descriptions of individuals involved)	
<i>Category</i>	<i>Coding Questions</i>
Leader	Do the individuals involved include the leader/decision-maker?
Power Dynamic	Are individuals involved at equal levels of power?
Tenure	Is the target individual in a new role?
Trust	Do the individuals involved trust each other at this specific time? What is the relationship quality/trust level?
Diversity	Are individuals involved from similar groups? What is the potential for in-group/out-group bias?
Threat	Does the target individual involved feel threatened (psychologically or physically)?
WHAT (Descriptions of what is to be done)	
<i>Category</i>	<i>Coding Questions</i>
Task	Is the event focused on accomplishment of a specific task?
Performance Orientation	Is the event focused on growth or achievement from the perspective of the target individual?
Appropriately Challenging	Is the task complex given the individual's current level of development (e.g., platoon vs. company vs. battalion sized problem)?
Solution	Is there a well-defined solution to the task/problem (e.g., specific goals, clear solution paths, expected solution)?
Team	Is the task team or individually oriented?
Autonomy	Is the context highly structured or unstructured (e.g., "free" time in which activities are determined by self)?
Kinetic	Is current situation characterized by kinetic engagements?
WHERE (Descriptions of where things will be done)	
<i>Category</i>	<i>Coding Questions</i>
Deployed	Is environment a deployed setting?
Field	If applicable, is the learning environment a classroom or in the field/on the range?
HOW (Descriptions of demands on how task gets done)	
<i>Category</i>	<i>Coding Questions</i>
Cognitive	Are the cognitive demands for task accomplishment high?
Physical	Are the physical demands for task accomplishment high?
Social	Are the social demands for task accomplishment high?
Affective	Is the situation emotionally charged for the target individual/learner involved?
Resources	Are the resources present sufficient to solve the task problem?
Time Pressure	Is time available for task completion tight?



ees are generally motivated to succeed in crossing the obstacles, the primary purpose is not to solve the obstacles per se. The emphasis is on participative decision-making, communication, and provision of support. As stress escalates due to obstacle difficulty and time constraints, the event can also highlight elements of character. Trainees can cheat on some obstacles as drill sergeants move between stations while trainees work independently. Trainee leaders may emerge but are not assigned.

As a second example, the SMEs explored an event modeled on personal experiences where an inexperienced platoon leader (PL) is deliberately challenged to learn how to balance and manage the needs of the team with the needs of the larger organization. Building trust can be difficult for new leaders as they seek to address the needs of their subordinates while managing expectations of superiors. In this example, the unit is engaged in a reconnaissance training activity. The company commander (CO CDR) requests the PL have the unit ready to go by a specific time, but the team requires additional time for preparation. The PL must navigate the interpersonal dynamics of the situation to meet the timeline without compromising the team. While mission is first, the PL must also be aware of second-order consequences (e.g., feelings of the team that their leader did not back them up). The assumption for this event is that the CO CDR deliberately sets up this tension to help the PL learn in a training setting.

These two situations illustrate how builds trust is not monolithic; instead, specific elements are differentially stressed by the situational factors that influence task execution. Using the questions in Table 1 that reflect the elements of builds trust, the events seem similar. Both situations require a *high* amount of communication. However, they are different. The TDC example is *highly* reliant on participative decision-making while the junior PL example emphasizes individual decision-making. Likewise, because the TDC uses the obstacles as a vehicle to promote and learn about teamwork, solving the obstacle (i.e., demonstrating sound decision-making) is less important than in the junior PL example. In that context, the CO CDR wants to know if the PL can solve the problem of balancing needs.

Digging deeper into the situations using the questions in Table 2, we also see that the specific situational contexts are similar but different. For instance, with respect to Who, the individuals in the TDC are at the *same* organization level, whereas the individuals involved in the PL example are by design at *different levels* (subordinates vs. leaders). This difference might contribute to the differential stress on the participative decision-making element of builds trust. Likewise, the types of stressors represented by the How element differ. The social and affective demands on the junior PL threaten more lasting consequences than the TDC, which in turn could influence the differences in the sound decision-making element under stress.

Even though this example does not address all questions shown in Tables 1 and 2, the use of just a few illustrative questions begins to unpack how the conditions under which builds trust must be demonstrated are not the same. These simple questions provide a way to begin to systemically understand what changes in different contexts.



Looking Forward: Future Assessment Methodologies

The conceptual approach introduced here offers a theoretical view of how to begin building an assessment method that fully embraces the complex and dynamic contexts in which warfighters operate. We argue that traditional assessment methods that use a binary snapshot at one point in time do not provide the necessary details to fully inform predictions of future success in a complex world. Instead, assessments must move to a contextually sensitive approach that allows stakeholders to gather performance data in a variety of circumstances. To maximize the utility of such assessments, performance must be understood in relation to a specific context (e.g., this soldier can perform well given time pressure under conditions X, Y, Z) and a specific element of an attribute (e.g., participative decision-making, rather than builds trust). By decomposing both the surrounding context and the attribute under assessment, well-informed decisions can be made about a soldier's strengths and areas for improvement.

Here we showcased the use of a series of questions to decompose attributes and situations. These questions can help us make better comparisons between performance contexts. The comparisons hinge on the way an event stresses elements of an attribute. Assessing both attributes and situations begins to provide the tools to move toward nuanced assessments. Those assessments might increase confidence that a soldier would exhibit an attribute based on specific patterns of previous experience. For example, performance on building trust can be anticipated to the extent that the history of behavior in prior conditions matches future requirements. This is like predicting whether a soldier has fitness using the history of prior testing events.

Currently, the situational framework illustrated here is merely a hypothesis, though we anticipate that the types of questions presented will matter for myriad attributes and competencies. The next step is to illustrate how to use this framework to build assessments and in so doing, to verify how the answers to the kinds of questions posed in the tables might affect the probability of a soldier behaving in accordance with an attribute. Leveraging the process illustrated here to document the surrounding context, two existing assessment methodologies could be refined to move beyond a binary has/has not methodology. Situational judgment test (SJT) items may be used for systematic manipulation and assessment of elements, while scenario injects may be used during live training events. Both SJTs and scenario injects can be intentionally designed to assess attributes using specific contextual features that are the target of the training event.

SJTs are short vignettes (scenarios) that describe the context of a problem followed by a "what would you do?" type response. There is typically no clear, obvious "right" answer. More sophisticated SJTs (see Brou et al., 2018) can also present problems that unfold differently based on the nature of initial responses. SJTs have been shown to predict behavior across a range of settings and situations (see Motowidlo et al., 2006). Similarly, vignettes in scenario-based training exercises (i.e., injects) could



be employed. They are a widely used method for assessing and developing critical skills in realistic, operationally relevant situations (Cannon-Bowers & Salas, 1998; Martin et al., 2009; Oser, 1999; Zook et al., 2012). Live scenario-based exercises can therefore be used to systematically expose individuals to situational elements that draw out informative patterns of behavioral variability. Methods such as these, if used throughout a program of instruction, could allow instructors to deliberately build competence in ways that make it robust across contexts.

Discussion and Conclusions

Using controlled experiments, future research could obtain quantitative evidence of the impact of situational elements on specific performance criteria, thus shedding light on the deeper structure of individual leader performance and the utility of the concepts outlined here. Empirical identification of critical dimensions would enable development of contrasting scenarios. Using those scenarios in an instructional approach emphasizing student exploration across a problem space may increase the likelihood that an attribute would be displayed in novel circumstances. In domains such as physics where the problem space is well-defined, the use of contrasting cases has been shown to increase the likelihood of knowledge transfer (Schwartz et al., 2011).

We acknowledge that the approach presented here is not without its challenges, especially from a practical perspective. To implement such an assessment method would, at least initially, require additional work from the individuals responsible for assessment and development. However, once fully developed, there are likely technological approaches that can be harnessed to help track, analyze, and predict the types of attribute and context interactions explored here (e.g., through machine-learning applications). However, before this approach is ready for implementation, research must be conducted to understand the impact of the context more fully on attribute and competency development. For instance, such research may reveal that certain situational factors are more consequential than others, that behaviors are stable within certain ranges of situational factors, or that attributes interact with each other in complex ways. It is expected that the number of significant interactions will be manageably finite, such that interventions can be implemented at scale. Army systems that meticulously track soldiers' accomplishments such as marksmanship status may also preserve the context in which that status was obtained. We begin here by introducing an approach to capture complexity. Future research will need to explore solutions that leverage that knowledge in service of development.

We are certainly not the first to assert that context matters when attempting to predict behavior (Mischel & Shoda, 1995; Rose, 2016). In this article, we expanded on ideas related to individualized, nonlinear, and dynamic development based on



context. We articulated methods for identifying and labeling contextual elements to enable systematic determination of how context matters in assessment. Contextual elements interact with granular elements of attributes, resulting in jagged developmental trajectories. Recognizing that jaggedness in and of itself is insufficient to inform assessment, we have started to describe attributes at an actionably granular level. The aim of future research could be to provide evidence that exposure to specific contexts as a function of jagged profiles of competencies will promote development. If such evidence could be provided, then we would be well on the way to formulating precise methods and tools for promoting leader development. ❧

The research described herein was sponsored by the U.S. Army Research Institute for the Behavioral and Social Sciences, Department of the Army (Contract No. W911NF-20-F0007). The views expressed in this paper are those of the authors and do not reflect the official policy or position of the Department of the Army, DOD, or the U.S. government.

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Storytelling as an Instructional Technique

Recommendations for Military Instructors

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Abstract

Military educators intuitively use storytelling in their classes to illustrate key instructional points, demonstrate practical application, and maintain student interest. Shared experiences among students and the instructor are often central to the methodology used to train soldiers and officers on critical skills and knowledge. The purpose of this study was to generate principles for preparing and delivering stories in a military training context. The study explored the storytelling experiences of 15 military instructors and their students in officer education courses at three Army schoolhouses. Instructors reported telling stories from personal experiences to enhance student understanding and motivation, and students described instructors' storytelling as beneficial and, in some cases, essential to their success in the course. Instructor storytelling contributed to both instructor and subject matter credibility, encouraged application and synthesis of the material, and improved the instructor/student relationship overall. The study combined analysis of instructor and student experiences with previous research findings on adult learning, storytelling, and effective instruction to generate practical guidelines for the use of personal stories to enhance learning outcomes.

Background of the Study

The connection between stories and education is a natural one represented in the root of the word “story” itself. The word story is derived from the Greek word for “history,” which means one who is “wise” and “learned” (Seidman, 2019). The origins of narrative traditions—oral histories that serve to preserve and pass down vital information through generations—were established even before humans began

recording history (Bowman, 2018). Educators often recognize the value of a good story in teaching and use narrative in ways that enhance learning, providing relevant illustrations that aid the recall of information.

Storytelling has been the subject of extensive research, with studies supporting storytelling to bolster positive relationships between instructors and students as well as between leaders and subordinates, and to enhance student engagement in a variety of educational settings (Adams et al., 2007; Auvinen et al., 2013; Sabio & Petges, 2019). Stories “have the potential to influence culture and to help people connect, develop genuine understanding, and unite around common purposes” (Aidman & Long, 2017, p. 106). An effective story can “encapsulate, contextualize, and emotionalize a message” (Pink, 2005, p. 104). Perhaps an even more powerful outcome of the use of stories in an educational context is the connection between the instructor and student and how that connection impacts the outcomes of the training or educational program.

The purpose of this study was to generate recommendations for using storytelling as an instructional technique in military training and education programs. Through a review of the literature on effective storytelling and the investigation of experienced instructors’ use of storytelling in military education courses, this study was designed to generate knowledge that may apply to effective instructor training and education on the topic of storytelling as an instructional technique in military training and education.

Relevance of the Study

This study aimed to contribute to the literature on storytelling in adult education learning environments and explore the impact of instructor storytelling in military training courses. While a significant body of literature exists connecting storytelling to positive outcomes in management and leadership and in college classrooms, a search of existing studies finds no specific research on connections between storytelling and outcomes in a military setting. In addition to gaps in the literature on storytelling, findings on instructor credibility and self-disclosure have primarily been presented in the context of undergraduate college courses. This study sought to explore the perceived impact of those instructor behaviors in a military context as well. By informing the literature and providing practical recommendations, the research-

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er's primary goal was to offer simple and achievable ways to improve instruction in military training and education.

Review of the Literature: Instructional Effectiveness and the Neuroscience of Storytelling and Adult Learning

The scholarly literature on adult learning and instructional effectiveness provides foundational background for this study. Specific areas of relevance include the study of instructor credibility and self-disclosure, narrative instructional techniques, and the neurocognitive link between stories and learning. Prior research in these areas informed the research questions in the study and provided insight when exploring the findings and implications of this effort.

Instructional Effectiveness: Credibility

A significant body of literature on instructional effectiveness has focused on the issue of instructor credibility, with consistent findings that correlate instructor credibility with student outcomes, motivation, and cognitive learning. Stoltz et al. (2014), for example, propose that “teacher credibility may be the most important factor in the instruction process” (p. 167). In a study on verbal aggression in the college classroom, Myers (2001) asserts that instructor credibility is one of the most important variables in the relationship between instructors and students. Myers (2001) maintains that if a student does not perceive that the instructor is credible, the pair is unlikely to develop a positive or meaningful relationship, which can inhibit the student's ability to learn.

Contributing to the research on instructor effectiveness and building credibility, researchers have explored the impact of instructor self-disclosure on student impressions of the instructor. For example, uncertainty reduction theory maintains the notion that in order to develop a relationship with someone, a person must gain information about another person, develop trust, and thereby reduce both cognitive and behavioral uncertainty between the two parties. According to the tenets of uncertainty reduction theory, appropriate self-disclosure can decrease uncertainty and increase communication and positive affect (Aidman & Long, 2017). In instructional settings, instructors who disclose relevant and appropriate personal information increase perceptions of caring and affinity with students' experience (Myers & Bryant, 2004). This was demonstrated in a study of college students' perceptions of their instructors, effectively self-disclosing information relevant to the students or the course material. It resulted in a positive impact on perceptions of the instructors' character, caring, and competence, which are the three components of credibility (Myers et al., 2009).

Instructor credibility can be positively influenced by the instructor's self-disclosure. Meluch and Starcher (2019) study instructor disclosure of communication apprehension and its impact on public speaking and student perceptions of instructor credibility. The study found that students rate instructors who disclose personal experiences of communication apprehension as more competent than instructors who do not disclose this type of information. Further, Meluch and Starcher's results indicate that students perceive instructors who share personal experiences with their students as important resources to overcome their own apprehension. Instructors who use self-disclosure are perceived as supportive and competent. These results echo previous research by Downs et al. (1988), who found that instructors who used self-disclosure and personal narratives at a higher rate to clarify course content were rated more highly when compared to their counterparts who did not use these techniques as often.

Instructor self-disclosure not only impacts the student's perception of the instructor but also has a positive connection to cognitive learning. In a study investigating whether teacher self-disclosure increases student cognitive learning, Stoltz et al. (2014) found that self-disclosure is a significant predictor for test scores on definitions. They also found that self-disclosure marginally predicts perceptions of relevancy in a sample of 102 university students when Stoltz et al. (2014) compared lecture and self-disclosure to an otherwise identical lecture without self-disclosure. In a study of large class sizes in a university environment, Solis and Turner (2016) found that instructor self-disclosure "expressed to students a likeness between the instructor and students" (p. 37) and promoted positive student-instructor interactions. Students indicate that instructor self-disclosure and caring leadership makes the class feel smaller. Students report that when the instructor shares personal experiences and stories related to course material, student motivation to learn and attend class increases as a result. Appropriate situational self-disclosure by instructors is one way instructors can bolster their relationship with students and enhance learning outcomes.

The Neuroscience of Narrative

Consideration of cognitive facets of neuroscience further illustrates a narrative's potential power in education and training. In their study exploring how aspects of successful psychotherapy might be used to enhance learning, Cozolino and Sprokay (2006) suggest principles that link storytelling to learning through prior findings in neuroscience that explore the social and emotional aspects of the brain. They find that the experience of listening to a story activates multiple parts of the brain simultaneously, combining sensory images, logic, and words, resulting in an emotional response that strengthens connections in the listener's memory (Cozolino & Sprokay, 2006).

In 2010, Princeton University neuroscientists Stephens et al. (2010) examined brain function and storytelling, with findings that underscored the social aspects

of the brain. In their research on verbal communication and neural coupling, they paired speakers and listeners whose brain activities were monitored through MRI scans. One person in each pair told a story from his or her own experience while the other listened. The brain scans reflected “mirrored” activity; the brain scans were synchronized in activity in the same areas of the brain, with a slight delay on the listener’s part. In other words, the functioning of these “mirror neurons” indicate that the listener has similar brain activity as if he or she experiences the story in the same way as the speaker. This synchronized, empathetic perception has the potential to support positive outcomes in educational settings.

Storytelling as an Instructional Technique

In educational contexts, narratives provide a form of experiential learning in which the learner encounters experience through stories, forming new neural connections to solidify knowledge gained (Clark & Rossiter, 2008). In classrooms, the use of case studies, instructor stories, or students’ sharing of personal stories often serves as the shared concrete experience that initiates the cycle of learning that Kolb’s (1984) experiential learning model prescribes. Forrest and Peterson (2006) maintain that when adults share their own experiences, they are sharing their stories, naturally linking experiential learning and storytelling as instructional methodology. Similarly, Clark and Rossiter (2008) emphasize the linkage between experiential and narrative learning, arguing that learning through experience is, at its foundation, a narrative construction of knowledge. Sometimes referred to as narrative pedagogy, storytelling in education is effective for teaching complex thinking skills because “it encourages students to challenge their assumptions and think through and interpret situations they encounter from multiple perspectives” (Grendell, 2011, p. 65).

McNett (2016) suggests that stories provide a type of virtual practice for the brain, stating that stories work our “mental muscles” in the same way that physical play sharpens motor functions. In discussing this phenomenon, McNett cites Gottschall’s suggestion that “stories act as cognitive flight simulators that help us practice without consequence navigating human and social life” (Gottschall, 2012, as cited in McNett, 2016, p. 185).

Methods

The study was conducted at the Maneuver Support Center of Excellence at Fort Leonard Wood, Missouri, a training institution that houses three Army branch proponent schools and provides training from entry-level basic training through professional military education courses for both enlisted soldiers and officers. The popu-

lation of the study was comprised of experienced instructors and students in three Captains Career Courses. Respondents consisted of 15 of the 32 current instructor/small group leaders from the instructor faculty in the three courses and their students. Instructor volunteers were recruited through email requests with permission of the course managers and directors of training at each school. After discussion with the course managers, the pool of participant candidates was narrowed to those with at least six months of experience as a small group leader. This generally equated to an instructor having taught the full 20-to-24-week course at least once. The courses in this study are taught in small groups of 12 to 16 students per small group leader. Nine students participated from the current courses in session, with students recruited from classes that had been in session for longer than one month, to provide an adequate base of experience with the small group instructor.

Sampling

When the goal of the research is to understand a concept or theory, Creswell (2012) recommended the use of theory or concept sampling. This purposeful sampling strategy samples individuals or sites because they can “help the researcher generate or discover a theory or specific concepts within the theory” (p. 208). In this case, a comparison of instructor impressions, student reactions, and findings from the literature intended to explore the concept of effective storytelling as an instructional technique. The sample was derived based on the availability and willingness of the current population of experienced small group leaders and students from three schools to participate in the study. Once data collection had begun, the researcher encountered some reluctance in volunteer availability and willingness to participate. At that time, additional snowball sampling (Creswell, 2012) was used to generate additional participation, with volunteers providing an endorsement to a second solicitation for respondents.

Research Questions

Data collected in the study focused on the following research questions:

- ◆ RQ1: What are the experiences of military instructors in using storytelling as an instructional delivery technique?
- ◆ RQ2: How do students perceive the role of storytelling in their learning experience?
- ◆ RQ3: What characteristics of effective storytelling are reflected in incidents that experienced instructors described in a military training and education context?
- ◆ RQ4: How well does current instructor training for new military instructors provide preparation for the use of stories as an instructional technique?

Data Collection Methods

Data collection for the study consisted of semistructured interviews and the critical incident technique (CIT), along with a review of the current instructor training curriculum for military instructors. In this study, interviews focused on instructor and student experiences with storytelling in their classes to explore instructors' perceptions about how stories affect student motivation and learning outcomes.

Questions used in instructor interviews included general inquiry about whether they use stories in their classes and how they deliver the story (e.g., planned or spontaneous; personal or third person).

As a starting point for the interviews, instructors were asked to describe their intent when using stories and their perceptions of how students react to their stories. They were asked about whether there were types of stories that they perceived were more effective or had greater impact. Finally, they were asked whether they felt their storytelling had an impact on their relationship with their students, and if so, in what way.

Students were asked about whether their instructor shares personal or other kinds of stories with them in class. They were asked to recall a specific story that they remember and how they felt about the story and the instructor's use of it. Students were asked what kinds of appealing stories instructors might use, and to describe any types or characteristics of stories they felt might have a negative impact.

The CIT has been described as a set of procedures used to collect observations of human behavior (Byrne, 2001). The technique was first used during World War II to collect information about the training needs of pilots. It takes its name from the process of "collecting information about critically important (critical) performance in special situations (incidents)" (Rothwell & Kazanas, 2004, p. 70). According to Jacobs (2019), it is based on the idea that "gathering actual stories about a certain activity that have led to both effective and ineffective outcomes can provide unique insights about that activity in general" (p. 133). All interviews and CIT sessions were recorded and transcribed to text following the session.

Each instructor was given the opportunity to share critical incidents following the initial interview. The CIT used the following prompt to elicit stories from instructors: *Can you think of a time when you've used a personal story during instruction with either positive or negative results? Please tell me about that experience. What was the story? What did you intend students to get from the story? Why do you think it was effective or ineffective?*

Data Analysis

The process of analyzing data from interviews and CIT sessions followed the recommended process presented by Creswell (2012). This process involved the re-

searcher (a) organizing and preparing the data for analysis, (b) exploring and coding the data, (c) building descriptions and themes, (d) representing the description and themes, (e) interpreting the findings, and (f) validating the accuracy of the findings (Creswell, 2012, pp. 261–262).

Following each interview, the recording was transcribed using transcription software to create a text file for review. Once transcripts were reviewed for accuracy, the researcher used hand coding to organize information. This coding process involved segmenting and labeling text to form descriptions and identify broad themes in the data (Creswell, 2012, p. 243). All themes derived from the coded data were used to develop the final set of guidelines for recommended inclusion in instructor professional development programs. Data collected from the CIT sessions were analyzed after the interview data, using similar coding techniques to identify common themes among stories used by the instructors.

To ensure reliability in the coding process, Creswell and Creswell (2018) recommend cross-checking codes for intercoder agreement. This process involved comparison of independently coded analysis between the primary researcher and another coder to demonstrate consistency in the coding process. Miles and Huberman (1994) recommended that coding be at least 80% in agreement for good qualitative reliability (as cited in Creswell & Creswell, 2018). In this case the cross-check indicated agreement above the 80% threshold.

Findings & Recommendations

This section presents findings from data analysis and is organized around the research questions (RQ) at the center of the study.

RQ 1: What are the experiences of military instructors in using storytelling as an instructional delivery technique?

The first research question addresses the experiences of instructors using storytelling as an instructional technique. The perceptions of their use of stories and the role stories play in their classrooms was documented. Semistructured interviews verified that all instructors have used stories in their classes in either deliberate (planned) or spontaneous situations, or both. Themes emerging from interviews that illustrate the ways instructors use stories centered on three thematic categories-- the instructor's intent in using the story, the types of stories told, and the method used when employing storytelling.

Instructors were readily able to describe their own intent associated with their own use of stories in their classes, and generally listed similar intentions when in-

cluding stories in their instruction. They describe incorporating stories to add creative interest to a dry topic or presentation, to emphasize or demonstrate the importance of the topic or learning objective, and to provide a concrete example relevant to the topic for illustrative purposes. Several instructors cited the way a story serves to illustrate their own firsthand knowledge of the topic. One of the most often cited uses of stories among these instructors was the intent for students to learn from someone else's mistake or failure; 13 of the 15 instructors use stories with that intent.

All instructors indicated their primary source of storytelling is personal experience. The two most often cited types of stories were those that described their own mistakes or some failure from their own experience and those that described interpersonal relationships or conflicts from their leadership experience.

RQ2: How do students perceive the role of storytelling in their learning experience?

The second research question explores student perceptions of their instructors' use of stories in the Captains Career Course. Interviews with nine students assigned to different small group leader respondents revealed several themes. Students spoke about the appeal of stories as an instructional technique and offered some insight as to aspects of storytelling that can have negative impacts as well.

The student respondents in the study were generally positive in their opinions about instructors using stories as part of their lessons. All respondents saw stories as a helpful and essential tool for instructors to use in their courses. In general, students expressed appreciation for instructors' personal experience stories, in most cases rating those stories as more valuable than secondhand stories, examples from movies, or historical vignettes. Students described the appeal of realism and credibility provided by instructor stories and the ways a story can elevate their learning from simple knowledge to higher levels of analysis, application, and synthesis. Students described how a story ties the present learning objectives to previous learning, which synthesizes specific learning objectives with other aspects of the curriculum. Several students indicated that the stories instructors tell increase the students' confidence in the instructor's ability to teach on the topic, but more importantly how personal stories help the students connect with the instructor. One student described it this way: "It feels like they're more invested in the instruction and in you as a person. And then you start to look at them not just as a teacher, but as a mentor as well."

While student respondents generally provided strong support for storytelling as an instructional technique, those interviewed in this study provided some insight as to what types of stories or characteristics of storytelling may have negative results with students. Among student respondents, there was a general sense that stories should relate to the topic of instruction, or to leadership lessons in general.

When describing storytelling behaviors that have a negative impact, students mentioned stories that seemed to be the instructor “gloating,” and the stories on sensitive topics might alienate students. They also described how an instructor may tell a story with too rigid of a perspective, presenting the story as “this is the only way” and having fewer positive impacts on their learning. Finally, they warned of instructor self-deprecation as a potential negative as well, requiring a balance to maintain instructor credibility.

RQ3: What characteristics of effective storytelling are reflected in incidents described by experienced instructors in a military training and education context?

When exploring the personal experiences of instructors and students participating in this study, both groups of respondents provided insight into how instructors can tell great stories and use them effectively to achieve educational outcomes. Instructor descriptions of critical incidents in which they have used storytelling in their courses with positive outcomes provided illustration of those insights in practical application.

These incidents underscore principles as described in the instructor and student interviews as well as principles supported by the literature on storytelling and effective instruction. All the instructor respondents in the study provided stories from their own personal experiences as illustrations of effective storytelling. Many used humor, often adding a humorous perspective to a significant failure in their past. Eight of 17 stories described decision-making processes and outcomes, with several instructors describing how they place the student “in” the story to make decisions and compare to the instructor’s actual experienced results. A full 11 of 17 effective critical incident descriptions evidenced instructor self-disclosure, wherein the instructor’s story described a mistake, shortcoming, or failure with lessons learned.

In considering the training needs of instructors, aspects of the critical incidents linked to narratology can provide insight into the instructors’ skill in storytelling. For example, of the 17 incidents provided, most met the structural definitions of a story as defined in the study. To review, a story refers to narratively patterned information with a beginning, middle, and end in which there are events, challenges, or conflicts (plot) and a final resolution of the dramatic tension of the plot. Of note for this study, four of the 17 critical incidents instructors described were missing essential elements of narrative structure. While instructors related experience-based tips, tricks, and recommendations for how to handle a situation, there was often no chronological sequence of events, and no defined beginning and end. These experiential discussions provide insight without a series of events leading to a conclusion with a moral or lesson.

RQ4: How well does current instructor training for new military instructors provide preparation for the use of stories as an instructional technique?

Instructors who participated in this study showed evidence that suggests the existing training provided in the foundational instructor training course yields little in the “how-to” aspects of storytelling. A review of the curriculum in the Common Faculty Development Instructor Course, or CFDIC, supports that conclusion as well. Additionally, no respondent reported any other professional development program or other training on storytelling as an instructional technique.

All 15 instructors who participated in the study reported no specific training on how to use stories as an instructional technique. Yet without exception, these instructors shared personal experiences as a regular part of their interaction with students and have seen positive impacts from the technique. Many reported that their storytelling is planned and generally with an intended outcome, though nearly all respondents reported spontaneous storytelling that occurs because of a need to clarify an instructional point further or as the result of discussion with students or student questions.

Discussion and Recommendations

Based on instructors’ own reporting and the feedback from student respondents, the successful storytelling incidents, and instructors’ reported outcomes from them, there are several lessons focusing on three areas: depth and transfer of knowledge, student engagement and knowledge sharing, and the trusting relationship between instructor and student.

A primary goal of training and education programs in professional settings, including professional military education, is the transfer of knowledge gained from the classroom to on-the-job performance. In fact, Gagne (1977) described how “the change in performance is what leads to the conclusion that learning has occurred” (as cited in Devine et al., 2014, p. 5). Adult learning theory, including experiential learning theory (Kolb, 1984), recognizes the importance of experience as a teacher.

Because the role of leaders in the military often places the commander in a decision-making role, a significant portion of the curriculum in leader education involves decision-making. The literature supports stories as a means of presenting choices for the audience to consider. Decision stories in which the main character faces a choice with multiple practical courses of action for consideration represent a solid use of stories in adult learning (Caminotti & Gray, 2012). Findings in this study indicating students reject stories when the narrator’s choices are seen as rigid or “the only way” support this aspect of good storytelling in the classroom. Instructors in the study who used their personal stories and allowed students to provide input at decisive

points, and those who used their own stories as the foundation for role play reported successful storytelling experiences. Decision-making stories, then, can support students' ability to practice making decisions and consider alternatives; as a result, they may be more likely to transfer competent decision-making skills from the experience to their next leadership position.

Additional evidence from the study and the literature supports the assertion that storytelling encourages transfer from the classroom to on-the-job performance. Both instructor and student respondents reported that when instructors use stories from their experiences, the level of learning is elevated from simple concept memorization or understanding processes and procedures to a greater ability to apply the learning to novel situations, and to synthesize the material with other topics and in other scenarios. The simple act of using a story to clarify a real-world application opens the scope of the learning objective beyond a list of bullet points or descriptive text from a doctrinal manual. The literature supports this clarity of communication on the part of the instructor to elevate the learning. The literature proposes that the "semantic structures and temporal ordering of information in a story act as an attention-focusing mechanism that aids in inquiry, decision-making, and learning" (Andrews et al., 2009, p. 7). Ensuring instructors are well trained on the presentation of stories with decision points, both in terms of the types of stories that are most effective and the method of telling the story to achieve maximum impact, would benefit training and educational outcomes in military professional education.

Findings from this study indicate that both instructors and students value storytelling for its ability to promote student engagement and knowledge sharing. The primary model for instruction in the Captains Career Course is an experiential learning class structure wherein the instructor acts as facilitator and students share experiences to achieve educational learning objectives. From the literature, Andrews et al. (2009) described this effect as well, noting that in classes where storytelling embeds the learner in "contextual, authentic, real-world problems are more engaged, draw on more resources, and transfer learning more effectively" (p. 17). Both instructors and students in this study point to the credibility-building effect of an instructor's ability to share real-world experiences related to the topic of instruction. When an instructor did not share stories, in fact, students reported they might be skeptical of the instructor's expertise in that subject. As the literature indicates, credibility is a critical factor in the instruction process and in the process of building relationships between the instructor and students (Myers, 2001; Stoltz et al., 2014). Instructors reported that students ask more questions and that the level of discourse in the class in general is elevated when stories are presented. Both students and instructors reported that students were more likely to share their own personal stories when an instructor does so, leading to a greater sharing of knowledge amongst the students in the small group in general. The effect directly supports an essential characteristic of the experiential learning methods used in the course, encouraging students to share

knowledge related to the learning objectives. Training on storytelling, if added to the current professional development for new instructors, could extend instructors' expertise in facilitating experiential learning in their classrooms from the start of their instructor assignment.

The literature on effective learning for adults consistently supports the need for adults to learn in a trusting environment (Cozolino & Sprokay, 2006). A trusting relationship between mentor and learner establishes conditions in the brain for changes in neuronal networks—making the brain ready to accept and integrate new knowledge or skills and activating higher order thinking through those connections. “Learners are assisted in moving their thinking activity into the higher brain regions (the frontal cortex), where reflective activity and abstract thinking take place” (Johnson, 2006, p. 64). Respondents, specifically students in this case, reported that an instructor's willingness to tell stories in which they are portrayed as less than the “hero”—those in which they failed or made a significant mistake—made students think more highly of them and increased their level of trust and willingness to expose their own vulnerabilities as well. Instructors expressed intent to have a classroom where it was safe to share, and both students and instructors reported that to some degree, vulnerability encourages trust. While instructors often focus on the training outcomes of their classes, such as whether students achieve learning objectives or whether they can succeed during performance-based assessments, they may overlook the importance of building the team in the classroom to foster those outcomes. Findings from this study support prior research indicating the relationship between instructor and student (Cozolino & Sprokay, 2006), the connection achieved by sharing stories (Stephens et al., 2010), and the trusting relationship instructors' vulnerability encourages all lead to a greater likelihood that students will be more engaged in the class, ask more questions, and explore concepts more deeply (Andrews et al., 2009). In classes like the Captains Career Course where instructional methods focus on experiential learning, a willingness to share experiences among the students and instructors is critical to the success of the methodology. When students report that their instructors' storytelling makes the instructors more relatable, helps students connect with the instructor, and results in more students sharing stories as well, a natural conclusion would be that ensuring instructors have an adequate understanding of how stories influence and educate is critical.

Recommendations

The purpose of this study was to generate recommendations for instructors' use of storytelling in military training and education courses. The process of identifying these recommendations resulted from pairing findings from the study and corresponding supporting evidence from the literature. The resulting recommendations

Table
Guidelines for the Use of Stories in Professional Military Education

Recommendation	Support: Literature & This Study	Guidelines for Action
Select Story		
a. Integrate relevant experiential stories in lessons to bolster credibility of the material and the instructor.	<ul style="list-style-type: none"> • Correlation of instructor credibility with student outcomes (Stoltz et al., 2014). • Instructor credibility is one of the most important variables in the relationship between instructors and students (Myers, 2001). • Stories communicate expertise and transfer information (Bryant & Harris, 2011). • It is important to align instructional activities and assessment tasks with objectives, and when instruction is aligned with the objectives, students will need to spend less time learning the objective (Raths, 2002). • Stories help establish the instructor's competence with the subject matter. Two thirds of students agreed that personal storytelling enhances an instructor's credibility (Current Study, Research Question 2). 	<ul style="list-style-type: none"> • To find relevant stories to use in class, consider the lesson's objective and ask: <ul style="list-style-type: none"> • Is there an incident from my own experience in which I have demonstrated this objective? • Have I seen this objective in action? • Select and tell stories that are relevant to the learning objective, but don't brag. • Select stories with a purpose in mind for the listener. • Do not choose and tell stories just to reminisce, vent, or for any other personal reason. If it isn't relevant to the listener, do not tell it. • Be specific. It's not interesting to the audience to tell them "I always" Instead, pick a specific example with specific details and tell that story. You can generalize later.
b. Use self-disclosure stories to establish and build trust between themselves and their students.	<ul style="list-style-type: none"> • Self-disclosure decreases uncertainty and increases communication and positive affect (Aidman & Long, 2017). • Learning through others' experiences is effective because it involves no negative consequences (Luria et al., 2019). • Self-disclosure in instructional settings results in positive impact on perceptions of the instructor's character, caring, and competence (credibility) (Meluch & Starcher, 2019). • Instructor self-disclosure reduces student apprehension (Meluch & Starcher, 2019) and "expressed to students a likeness between the instructor and students" (Solis & Turner, 2016). • Narrative self-disclosure increases perceptions of caring & instructor credibility (Cayanus & Martin, 2008). • Instructors who disclose relevant and appropriate personal information increase perceptions of caring, credibility, and affinity with students' experiences (Myers et al., 2009). • Instructors and students believed that the instructor's willingness to be vulnerable was helpful in developing the relationship between the instructor and student (Current Study, Research Questions 1 & 2). 	<ul style="list-style-type: none"> • Consider stories in which you aren't the hero. If you learned a lesson, so will the students. They'd rather learn from your mistakes than make their own. • Don't overdo your failure stories. There's a balance between showing vulnerability and maintaining students' faith in your competence. • Humor in hindsight is a great way to keep a painful story from bringing the audience too far down. Leave the audience with something positive. • Vulnerability encourages trust. Share your "lessons learned" from the incident in the story—whether they are lessons about yourself, your skills, or your knowledge.

Table

Guidelines for the Use of Stories in Professional Military Education (continued)

Recommendation	Support: Literature & This Study	Guidelines for Action
Plan & Prepare		
c. Plan, prepare, and practice telling the story prior to integrating into a lesson.	<ul style="list-style-type: none"> • Instructors who use personal narratives to clarify course content are rated more highly compared to counterparts who do not (Downs et al., 1988). • Good stories need to be some combination of salient, succinct, funny, emotional, moving, clever, true, short, current, or personal (Harbin & Humphrey, 2010). • The storyteller must be comfortable telling the story for the listener to be comfortable with it (Harbin & Humphrey, 2010). 	<ul style="list-style-type: none"> • Consider the “so what” of your story. Why are you telling the story? • Practice telling the story, alone or to someone else, to get a feel for pacing and details to include. • Practice telling your story with enthusiasm, authenticity, and with passion. Playing it safe, being superficial, and using generalizations isn’t interesting. • Explain why you selected the story. Don’t assume the lesson of the story, or the connection between the story and the learning objective, is obvious to students. Practice drawing the audience’s attention to the connection to make the story more effective.
d. Include the fundamental components of a story: <ul style="list-style-type: none"> • sequence of events • conflict • resolution • lesson 	<ul style="list-style-type: none"> • Building blocks of compelling narratives: challenge, struggle, and resolution (Bowman, 2014) • Effective stories have a definite beginning, middle, and end, and listeners must actively engage in the story in an interactive manner (Bryant & Harris, 2011). • The best stories are ones in which the main character is facing a choice wherein all the practical courses of actions have both pros and cons (Caminotti & Gray, 2012). • Good stories present choices and illustrate the outcome of those choices (McDonald, 2009). 	<ul style="list-style-type: none"> • Consider the story in three acts— <ul style="list-style-type: none"> • the first act provides background to the conflict, • the second act begins with a turning point in the conflict and ends at the climax, and • the third act takes the climax to its resolution and ends with the lesson, moral, or takeaway. • Present choices, or multiple courses of action to allow the listener to consider the options as if they are in the story. • Take a moment before or at the climax to ask the audience what they would do in that situation?
e. Understand and incorporate a variety of narrative techniques.	<ul style="list-style-type: none"> • Role play enhances episodic memory (Hagen & Park, 2016). • Storytelling can function to encourage curiosity, knowledge sharing, & stimulate the process of creating meaning. Stories help develop skills necessary for making decisions (Katuscáková & Katuscák, 2013). • Narratives serve to enhance memory through linked associations (Cozolino & Sprokay, 2006). • Stories act as “cognitive flight simulators” helping students practice without consequences (Gottschall, 2012). • The goal of scenario-based training in the military is “to develop cognitive templates such that military personnel experience as many combinations of battlefield variables as possible while in training” (Andrews et al., 2009, p. 11). 	<ul style="list-style-type: none"> • Problem-based instruction uses an ill-structured problem situating the student in the narrative for decision-making. • Narrative-based traditional storytelling, the instructor controls the pacing and release of information and context. Tell part of the story, consider the learning opportunities at various stages of the story. • If you don’t have a personal story, find a story from a peer, a historical case, etc. Get to know the story well enough to create the mental image, to pace it, and to be comfortable telling it as you would your own. • One technique is to use a personal experience to walk the students through the scenario. Situate them in the story and let them make choices before continuing with the actual outcomes.

Table

Guidelines for the Use of Stories in Professional Military Education (continued)

Recommendation	Support: Literature & This Study	Guidelines for Action
Telling the Story		
f. Tell stories deliberately, using details, sensory information, and pacing to optimize the effects of their storytelling.	<ul style="list-style-type: none"> • Instructional storytelling transfers a mental image to the listener — increasing the likelihood of retention (Harbin & Humphrey, 2010). • The story people see, hear, and feel is a composite of every aspect” of the teller—visual, auditory, and kinesthetic (Simmons, 2019). • Pacing, pauses, even irrelevant details create a sense of anticipation—heightened arousal appropriate for learning (Simmons, 2019). 	<ul style="list-style-type: none"> • When telling a personal story, slow down. Reveal key information in small pieces to build suspense. • Add details that create a picture with sensory images, even when they don’t contribute in a material way to the “plot.” This invites the listener into the story. • For example, describe the scene, physical and emotional details — let the listener know how you felt at that moment. • Consider details that added to the conflict? Mosquitoes biting? Hands so cold they hurt? Nervous or worried about something at home? • Use gestures, describe smells, and use sound effects. • Describe the other people in the story to make them more real to the listener—even a small detail can add to the effectiveness of the mental image.
Telling the Story		
g. Consider unique aspects of their audience when telling stories.	<ul style="list-style-type: none"> • Storytelling is a dynamic triangle of telling, listening, and story (McDowell, 2021). • Storytellers have the responsibility of respecting and protecting the audience as they travel together through the story (Bryant & Harris, 2011). • Students cited sensitive subjects and rigid perspectives as ways instructors’ storytelling may do more harm than good (Current Study, Research Question 2). 	<ul style="list-style-type: none"> • Consider that each instance of storytelling is different. While a story may not work well with one audience, it may be more relevant to another. • It can be helpful to warn the audience if there is sensitive content in the story. • Follow the story with an invitation to students to share their own stories — this can extend the effectiveness of the instructional storytelling.
Evaluate		
h. Assess the effectiveness of a story after each telling to improve instructional effectiveness	<ul style="list-style-type: none"> • Review of instruction constitutes a formative evaluation with the goal of identifying ways in which the materials are “on target” and ways in which they can be improved (Gagne, Wager, Golas & Keller, 2005). • The ability to reflect on personal strengths, weaknesses, and approaches to one’s teaching is an important quality of effective educators (Kirkpalani, 2017). 	<ul style="list-style-type: none"> • Following the use of a story during a block of instruction, an instructor should reflect on the storytelling experience to gauge its effectiveness, or areas for improvement. • You may want to ask student(s) their impression of the story <ul style="list-style-type: none"> • What did they liked or not like about the story? • Did the story help them understand a concept or some part of the lesson better? • Did the story raise any questions? • Use student feedback and your own perceptions to improve the story for the next telling. Keep notes on findings with other lesson materials for preparation the next time the class is taught.

provide guidelines for instructors and instructional designers on the preparation, development, and implementation of stories in classes. The following criteria were established for the development of these recommendations:

- ◆ Each recommendation is grounded in research findings from established literature on adult learning, storytelling, or a combination of both.
- ◆ The recommendation provides practical, actionable guidelines for the use of stories, focused on (a) optimizing learning outcomes and (b) strengthening the instructor/student relationship.

The Table provides guidelines for instructors, support from research literature for each, and suggestions for practical implementation of each recommendation.

Findings from this study indicate that instructors are using stories in their classrooms with positive outcomes, but they are doing so almost accidentally, and without the benefit of any significant training on how stories can and do impact instruction, the instructor/student interaction, and learning outcomes. Findings might lead one to ask how much better the student experience and outcomes might be if these instructors had the benefit of training targeted at their storytelling skills. ❧

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A Better Future

Applying Lessons Learned from Hybrid and Blended Education during the COVID-19 Pandemic

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Abstract

The increased use of hybrid and blended learning approaches as an adaptation to the COVID-19 pandemic has provided valuable learning that should not be ignored. The U.S. Army War College, professional military education, and other institutions of higher education should not let the opportunity provided by this crisis slip by without reimagining curriculum and instruction. This article suggests that future resident education programs can benefit by deliberately incorporating distance-learning techniques into future course delivery. However, this will require intentional and sound instructional design as well as buy-in and commitment by resident faculty members to develop online competencies.

The onset of the COVID-19 pandemic directly challenged how the U.S. Army War College (USAWC) and other U.S. professional military education (PME) institutions approached senior leader education. Consequently, across the Department of Defense, PME programs were forced to adapt their resident instruction to online environments by using new tools and methodologies. Some critics have argued that educational institutions needed this shock as an impetus to modernize instructional strategies and “embrace new technology” (Jenkins, 2021). We agree. Reflection on our educational experiences during COVID-19 should inform a more modern and demonstrably effective approach to learning in PME. We contend that the lessons learned during the pandemic will lead to a better future involving greater use of hybrid and blended instruction to improve the PME experience.

The Traditional Model of Resident Education at USAWC

The USAWC Resident Education Program (REP) is a 10-month curriculum delivered to approximately 380 students who are divided into seminars for most of the academic year. Seminars are comprised of 14 to 18 students that are led by a multidisciplinary team of faculty members from each of the three resident teaching departments. A seminar provides functional diversity with the inclusion of representatives from across branches of service (Army, Air Force, Navy, Marines, and Coast Guard), Active and Reserve Components (including Air and Army National Guard), international fellows, and U.S. government civilians.

USAWC REP students are proven high performers within their respective services and organizations who have demonstrated professional success as practitioners and exhibit potential for higher levels of responsibility. They undergo a rigorous selection process by each service and parent agency as part of their respective leadership development and education programs to attend this senior-level college. U.S. military students are in the grade of O-5 or O-6 with an average of 20 years of service; civilian students are GS-14 or GS-15. The next generation of national security professionals will emerge from the students enrolled in this program.

The USAWC seminar model has historically utilized a discussion-based approach to delivering the curriculum. Rather than education or training through the rote memorization and recitation of facts and theories, the seminar is the vehicle for educational discourse and discovery using the Socratic method (U.S. Army War College [USAWC], 2021a). Faculty guide the dialogue by posing questions to drive deeper understanding and prompting intellectual exploration of challenging and complex concepts.

The seminar norms are the “rules of engagement,” which reflect behavioral expectations of how students “interact with each other and think about problems” (Hill et al., 2014, p. 98). The norms are collaboratively developed by the faculty and students early in the formation of the seminar. The norms provide the foundation for a psychologically safe space to listen, share, and challenge one another. The seminar thus provides a supportive environment for learning, developing, and exercising interpersonal, networking, and communication skills that are required for success in future assignments. These types of seminar engagements support positive outcomes such as increased motivation, engagement, information retention, and social connection (Walton & Cohen, 2007).

Challenges to a Rapid Transition to Online Instruction

In the spring of 2020, the entire resident elective program moved online with little faculty preparation or deliberate instructional design. This transition to all online classes was later repeated from November through mid-January for Academic Year

2020-2021 (AY21). Even though some advanced preparations occurred before the second transition, faculty continued to struggle with delivering content online.

This phenomenon was not unique to the USAWC. Faculty members across many educational institutions found the rapid transition challenging. Instructors struggled if they had limited knowledge of distance-learning theory, were not exposed to best practices for communicating via technology, had minimal experience establishing class norms in a distant environment, or had not previously practiced using collaborative learning technology tools (Lemay, Bazelais, & Doleck, 2021; Marek et al., 2021). The USAWC also discovered that access to appropriate technology, such as a computing device (e.g., computer, tablet, smartphone), high-speed internet, and various collaborative software tools, was inconsistent across faculty and students. As a result, instructors initially defaulted to a less effective instructional method, such as lecturing, to avoid technological challenges associated with an unfamiliar tool. In this new context,

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student-centered instruction required the institution to help faculty better understand how to utilize new tools as well as the scholarly literature on online instruction.

Literature Review: Principles of Effective Online Instruction

While the pandemic may have helped more faculty recognize the potential value of remote education (Lee et al., 2021), the forced and rapid transition did not necessarily provide students with the most effective learning environment. For example, the process of simultaneously learning the capabilities of a new instructional tool in conjunction with learning new material created a cognitive burden for both faculty and students, which distracted from the intended objective (Skulmowski & Xu, 2021). In many aspects, effective teaching follows similar basic principles regardless of the instructional medium.

For instance, backward design can be employed in any instructional context to help align objectives, assessments, and learning activities (Wiggins & McTighe, 1998). Active student engagement in learning activities will lead to greater student achievement (Lei et al., 2018). Establishing norms at the beginning of the instructional period is essential for student success and relationship development (Cocquyt et al., 2019). There is also ample evidence to suggest that when delivering the same content via in-person or online instruction, students in both mediums generally have similar learning outcomes (Allen et al., 2004).

However, positive outcomes require effective instructional design and methodology to take advantage of the strengths and unique features of each learning environment. A major difference between remote and in-person instruction is the method of interaction whether that be between student-content, student-student, or student-instructor. Ideally, the instruction would be intentionally designed with the interaction method in mind (Lee & Rha, 2009).

Asynchronous remote education tends to have more structured content, and there is less variation in how content is delivered to students across sections or instructors. Therefore, student learning can be impacted more by the overall design of the course than by any instructor (Moore & Kearsley, 2011). In this type of environment, learning is heavily impacted by motivation, self-regulation, and time management skills because students engage with content independently throughout the course and do not have the opportunity to receive feedback in real-time (Pelikan et al., 2021; Song et al., 2004).

Hybrid (where some learners are together in a classroom while others join remotely) and synchronous remote instruction provide flexibility and independence but also give students a specific time to connect with the instructor and their peers (Van Doorn & Van Doorn, 2014). Theoretically, this merges some of the advantages of in-person and asynchronous instruction into the same course or program (Ser-

rano et al., 2019). However, these modes of instruction still rely more heavily on students' abilities to regulate their own time and learning than traditional, solely in-person teaching methods (Zhu et al., 2016).

Blended learning involves utilizing a variety of in-person, synchronous remote, asynchronous remote, and/or hybrid instruction during the same course or program. Blended learning requires an understanding of all instructional modalities and needs to be carefully designed to maximize the advantages of each instructional method.

During the pandemic, the rapid transition from in-person to remote and hybrid instruction caused a perfect storm of educational challenges. Instruction that was designed for in-person interactions needed to be quickly converted to a remote environment without much time for intentional instructional design, technology training, or establishing new learning habits or expectations. Students and instructors overcame these challenges at the USAWC in a variety of innovative ways. The question is how to harness the lessons learned and adapt to create a better future for PME.

In their book *Modernizing Learning*, Walcutt and Schatz (2019) identified six critical areas of the future learning ecosystem. The rest of this article focuses on the lessons learned and building a better future in three of those areas: technological infrastructure, instructional design, and human infrastructure.

Examining Lessons Learned: Technological Infrastructure

Proliferation of Systems

In a worldwide survey of 418 higher education faculty who converted courses to distance learning, 43% used the school's learning management system. Additionally, 85% used other consumer communication applications, which indicates that students were exposed to a wide number of new tools (Marek et al., 2021). Similarly, there was a proliferation of new tools used at the USAWC. Understandably, the introduction of new programs (with limited training) caused some angst and frustration among both faculty and students. This frustration was especially true for new faculty members and those existing faculty who were new to online education. This result is consistent with the survey above, where the authors found a positive correlation between experience with online teaching and the ease of transition to online teaching due to COVID (Marek et al., 2021).

Using Technology to Conduct Hybrid Classes

Faculty and students quickly developed practices to work around the challenges of delivering content in a hybrid environment. For example, some seminars achieved a

great deal of success in integrating remote students by assigning specific students to act as physical “avatars” to represent or advocate for students participating remotely. The designated avatars periodically monitored the chat input from the remote students during seminar discussions and activities. When needed, the avatars used their phone or laptop cameras to provide additional visual feedback to the remote students. Without these avatars, faculty were challenged to effectively manage in-class discussions and activities while simultaneously incorporating students participating remotely. The addition of a 360-degree camera, microphone, and speaker devices significantly enhanced the online experience for remote students, though avatars were still helpful in drawing attention to the input of the students who were not in the room.

Opening the Classroom to the World

Faculty utilized real-time video conferencing software to bring in a more diverse range of outside speakers from around the world who were unhindered by travel requirements. The software also increased the opportunities for students to tailor their educational experiences. For example, during a typical visit to the nation’s capital, students are limited in the number of agencies, embassies, and organizations that can be visited over three to four days. For AY21, USAWC conducted many of these “visits” remotely with some recorded for later viewing. Thus, students had greater choices and could watch the recorded sessions from anywhere in the world asynchronously at their discretion. In addition, the move to online instruction enabled distance students to participate, for the first time, in special programs such as the Joint Land, Air, Sea Strategic (JLASS) program, which had previously been limited to resident students. With everyone online during the lead-up to the exercise, distance students, including students from the Swedish Defence University, were also able to participate in the exercise via Microsoft Teams.

Instructional Design

Deliberate Approach

One of the key lessons learned was that incorporating online teaching methods requires a deliberate instructional-design strategy. As with any instructional methodology, online methods are not universal skills. The technical aspects needed to be very clearly laid out for faculty. In addition, lesson plans and delivery methods developed for in-person instruction require significant modification to be effective in an online environment. This takes time and adds significantly to faculty and staff workload (Lemay, Bazelaïs, & Doleck, 2021).

Course Design and Student Comfort

A survey of graduate student perceptions found that students “agreed that course design, learner motivation, time management, and comfortableness with online technologies impact the success of an online learning experience” (Song et al., 2004, p. 59). While students at the USAWC are usually self-motivated and adept at time management, the delivery methods and familiarity with online technologies varied from seminar to seminar. The same was true for faculty members at the USAWC. Some faculty members tried to deliver their classes without altering the instructional design for online delivery. This often led to faculty and student frustration with the limitations of online learning and the ability to teach effectively in the online environment. There was significant student and faculty dissatisfaction with their ability to use the online learning tools at the USAWC. Only about a third of the students (35%) felt well-prepared to use those tools (USAWC, 2021b).

One Size Does Not Fit All

Some faculty members modified their curriculum to incorporate online education. First, instructors incorporated “in-class” synchronous techniques to bring others who are not physically present into the classroom. This included expert speakers and students who were ill or unable to participate in person. Second, instructors planned “out-of-class” synchronous activities to enable group work in preparation for in-class discussion or application. Finally, faculty used out-of-class asynchronous techniques, conducted before or after class, to focus the classroom time on higher-level Bloom’s outcomes, including active learning activities (Krathwohl, 2002). These asynchronous techniques included viewing recorded presentations, participating in discussion boards, and online journaling activities.

Human Infrastructure

Student and Faculty Education

The transition to online learning required significant individual and group support and training. In AY20, students and faculty learned the tools of online delivery as they were teaching the content. Based on the lessons learned, the institution took a more intentional and proactive approach in AY21. This resulted in decreased student anxiety and greater faculty competence and confidence in using online tools and techniques. However, comfort with online tools still varied. Faculty, who were

knowledgeable of and comfortable with online education and virtual techniques, found new and improved ways to deliver the curriculum. Those who lacked this background found the experience to be unsatisfying. Most faculty still viewed online education as a contingent approach.

Educational Support

The instructional design support staff attempted to address this lack of knowledge. They quickly adapted to changing requirements and worked with faculty members to develop user-centric faculty development sessions and resources. The distance education program also supported the resident program in leveraging technology and employing online instructional techniques to improve the online experience for in-resident classes. The distance program also benefited from the resident course's early adaptation of new instructional software and the lessons they learned during the year.

Results Vary Across and Within

A recent study identified varying college student perceptions of online learning during the pandemic (Lemay, Doleck, & Bazelais, 2021). While students perceived advantages and disadvantages to online learning, the study found a reluctance among students to continue online learning. Not surprisingly, those sentiments were echoed by both faculty and students at the USAWC. According to a post-matriculation survey conducted for the USAWC class of 2021, fewer students reported being “satisfied” or “very satisfied” with online delivery (synchronous, 48%; asynchronous, 42%; hybrid, 43%) than they did with face-to-face delivery (68%) (USAWC, 2021b). Students preferred the traditional approach to education. This is consistent with other institutions where students were “reluctant to continue online learning” (Lemay, Bazelais, & Doleck, 2021). However, that sentiment should not prevent further integration of online instructional tools into resident education.

No Turning Back

Building upon the lessons learned over the past 18 months, the USAWC and other PME institutions should continue to harness the power of online education to provide a more tailorable and effective educational experience. The USAWC is applying some of these lessons to a new Blended Education Program, which will be piloted in AY23. The program will allow students who cannot be stationed full-time at Carlisle Barracks the opportunity to complete the program in a one-year, blended format, where a majority of the curriculum will be completed remotely.

As educators in higher education in Europe have found, “blending significant elements of the learning environment such as face-to-face, online, and self-paced learning leads to better student experiences and outcomes and more efficient teaching and course management practices if combined appropriately” (Serrano et al., 2019). The remainder of the article addresses the required technology, instructional design, and faculty/student development required to realize that goal.

Building a Better Future: Technological Infrastructure

Simplify Technology

An intentional approach to designing cooperative online activities will improve the student experience, whether the activity is completely online or using a hybrid delivery model. Recent studies have found that “the use of learning technologies should be simplified and streamlined” (Zhu et al., 2021, p. 6143). Subsequently, the USAWC has standardized the systems used to deliver content to reduce faculty and student training time and to improve familiarity with the available tools. That does not preclude individual faculty members from experimenting with new online tools, but it does require a deliberate and coordinated approach to reduce training time.

Improve Capacity

Walcutt and Schatz (2019) argue that “information technology forms the enabling foundation of the future learning ecosystem” (p. 11). Academic programs should consider their technological infrastructure when planning. Bandwidth, Wi-Fi capacity, reception quality, network security, access to software applications, and adequate hardware are all important aspects of facilitating blended instruction. At the USAWC, these factors are under consideration simultaneously with the design of a new academic facility to improve connectivity while also making learning spaces more modular and tailorable.

Tailor Education

Online modalities can also contribute to more tailorable education. “Evidence shows that some students benefit from real-time learning, while others do better work at their own pace” (Cohn, 2021). For example, the artifacts from online instruction (e.g., recordings and written records) provide learners with the opportunity to review their activities and products repeatedly, from any location. Online activities can also help international fellows by giving them the opportunity to review transcripts or recordings at their own pace.

Instructional Design

Flip the Classroom

Faculty should also incorporate online components to “flip the classroom.” In the flipped classroom, “students independently learn foundational content through homework assignments to acquire lower-level learning objectives such as fact remembering” (Wang et al., 2021, p. 2). Adding asynchronous components before in-class discussion or application activities saves valuable classroom time and allows faculty to promote active learning. This is particularly important in a graduate-level “survey” program such as the USAWC, where students are introduced to knowledge from a variety of disciplines rather than going deep into just one, and where the classroom is expected to be an application/synthesis-focused rather than a lecture-focused environment.

The USAWC’s educational methodology includes varied forms of active learning in its curriculum, ranging from case studies and group projects to debates and integrated research. However, getting to these higher-level Bloom’s activities requires students to possess a grounding in foundational material. Some of that material can be delivered asynchronously.

Incorporate Prelearning

A search of the literature has also shown an increased use of online discussion boards and other techniques to asynchronously deliver content before in-person sessions (Anthony et al., 2020). For example, discussion boards could better prepare students for in-class activities or to synthesize information between courses. Unlike seminar discussions, it is easier to give every student a voice in asynchronous discussion boards, especially introverted students who must compete with more vocal peers. This is also especially useful for the USAWC’s international students, many of whom interact in a second language and sometimes have trouble keeping up and engaging in a lively classroom discussion. Online journaling and discussion boards also allow students to engage in self-reflection to analyze their answers in comparison to others after class and subsequently to be exposed to and apply the material. These artifacts are also persistent and provide another tool for students to refer to later, especially students where English is a second language.

Record Lectures and Out-of-Class Online Exercises

Students can also be asynchronously exposed to experts to help them better understand foundational material. Prerecorded lectures or faculty interviews with ex-

perts allow students to process the material before class rather than tying up valuable time for large or small group lectures. This ties in directly with homework and will enable students to move more directly to higher-level application.

If they are intelligently designed and executed, games and exercises can also be effective methods to assess student learning and develop student skills whether in residence or online (Hillison, 2020). While in-person activities such as matrix games are often preferred, it is possible to engage students in active learning through off-the-shelf platforms or specially designed programs out of class to augment classroom activities. Such out-of-class activities or exercises could also bring in students from other war colleges, from the USAWC's distance program, or even other professionals in the field. Extending participation to new individuals allows for cross-leveling diverse backgrounds and experiences.

Move Class Out of the Classroom

Online technology also makes out-of-class group work activities easier to accomplish. This does not mean that all group work should be done out-of-class, but blended methods allow both out-of-class synchronous and asynchronous activities. While it is challenging to replicate the rich interpersonal nature of group work through online platforms, faculty members can leverage communication applications, discussion boards, and various blogs to replicate peer-to-peer learning efforts without the limitations of trying to collocate or find space outside of the traditional classroom. Virtual breakout rooms allow faculty to move between groups quickly to monitor activity, address questions, and provide guidance. Additionally, technology makes out-of-class group “homework” much simpler to accomplish. Synchronous or asynchronous out-of-class group work can extend engagement and discussion outside of the seminar sessions and lead to a higher level of understanding.

Add Synchronous Online Speakers

Importantly, the ability to virtually bring in speakers and participants from outside of the seminar increases the opportunity to expose students to experts or differing points of view. Hybrid approaches allow greater use of remote subject matter experts and reduce the cost of doing so. “So long as lecture videos and other online options are paired with a subsequent interaction—class discussion or group work—the learning of content remains social and engaged” (Cohn, 2021). An example is a USAWC AY21 lesson involving a virtual engagement with the U.S. embassy country team in the United Arab Emirates. The interaction would not have been possible in person due to the day-to-day demands on embassy personnel.

Seminar Experience Is Still Essential

These blended methods are designed to enhance—not replace—the classroom seminar environment that is the centerpiece (the “Carlisle Experience”) for the Army War College’s resident program (Allen, 2021). Yet, a blended approach to resident education facilitates the move from a more traditional approach to a more learner-centered method. Bannan et al. (2020) suggest the traditional approach to delivering education “generally assumes a given target—a particular individual or cohort—as well as a specific setting and general set of conditions. It focuses on determining the appropriate configuration of instructional interventions in insular and finite curricular units, such as a course or training program” (Bannan et al., 2020, p. 70). While this model has been accepted as successful in the past, a more tailorable approach to education may be better suited to meet the demands of individual learners.

Human Infrastructure

Focus on Student and Faculty Development

The key to any successful educational effort will be the people who carry it out. Therefore, faculty development on the use of online applications, instructional design, and assessments should be a priority. The faculty development program will work most effectively if it is “responsive to the needs of the participants” (Schildkamp et al., 2021, p. 281). In the future, the USAWC will need both push (scheduled faculty and student development) and pull (demand-driven) assistance for faculty and students with new technologies or methodologies. Overcoming faculty hesitance and skepticism will also be important. Due to lack of familiarity or technical challenges, some faculty members had an unpleasant experience moving to online delivery and may be anchored on these past experiences. Faculty will need the time, resources, encouragement, and support to develop the skills required to design and implement effective blended teaching techniques. At the University of North Carolina at Chapel Hill, “30 to 40 percent of the university’s faculty members took a five-week online-instructor certification course, enabling them to support their colleagues during the spring transition (to online delivery)” (McMurtrie, 2020). This level of commitment will require leadership to provide the vision, resources, and incentives to promote the transformation to a blended approach.

Incorporate Faculty Remotely for Meetings and Mentoring

Blended methods make faculty coordination much simpler as well. Getting faculty with dueling schedules together at the same time and place has always been

Table*Key Hybrid and Blended Learning Innovations to Create a Better Future*

Learning Ecosystem Critical Area	Key Innovations Supported by Lessons Learned
Technological Infrastructure	<ul style="list-style-type: none"> • Simplify technology • Improve capacity • Tailor education
Instructional Design	<ul style="list-style-type: none"> • Flip the classroom • Incorporate online prelearning • Record lectures and out-of-class online exercises • Move class out of the classroom • Leverage synchronous activities • Augment, not replace, in-person education
Human Infrastructure	<ul style="list-style-type: none"> • Increase faculty development of online skills • Increase student development of online skills • Incorporate online faculty meetings and mentoring


challenging. The ability to use online communications tools such as Microsoft Teams to hold synchronous meetings and class preparation sessions will remain a valuable tool to enable busy faculty to stay connected. However, leadership and faculty must intentionally design these events to be effective for both those who attend in person and those that do so remotely. Additionally, PME course directors and lesson authors can prerecord lesson preparation videos and place them online so that new instructors can access them on demand.

Conclusion: Leading Change

The increased use of hybrid and blended learning approaches, as an adaptation to the pandemic, has provided valuable learning that should not be ignored. This article suggested that future resident education programs in PME can benefit by deliberately incorporating distance-learning techniques into future course delivery. Those key hybrid and blended innovations are summarized in the Table. However, this will require buy-in and commitment by resident faculty members to develop online competencies. Without the looming specter of COVID-19 there is a reasonable concern that faculty members may again revert to the traditional methods of delivering resident education—to familiarity and comfort—and thus “forget” (or ignore) the lessons acquired from this period. This would be unfortunate. Incorporating online technology enables the resident education program to improve students’ achievement of the institutional and program level outcomes at

the USAWC (USAWC, 2021a). Additionally, technology will facilitate collaboration among senior service colleges, universities, and agencies when delivering the curriculum.

The USAWC, PME, and other institutions of higher education should not let the opportunity provided by the crisis slip by without reimagining curriculum and instruction. The experience at the USAWC and current research indicate that delivering curriculum to students in multiple modalities increases accessibility and improves retention (Capp, 2017). Therefore, educators should avoid the temptation to revert to prepandemic instructional methods and instead continue to innovate. As this article describes, intentional and sound instructional design employed by motivated and trained faculty members can lead to the successful integration of innovative technologies and create a better future for PME students. The goal is to better prepare them for the more integrated, online environment in which they will lead their future organizations.

In 2020, the USAWC commandant provided a vision for blended and hybrid education. In the white paper on strategic education, he directed that the resident program moves to include both asynchronous content delivery and online collaboration outside of the USAWC. Blending traditional resident and online strategies would realize that vision and enhance the ability to deliver a more tailorable educational outcome. If the current leadership and faculty embrace this approach, the USAWC and others will be on track toward a “Better Future” for military education. 

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Upcoming Conferences of Note

January 18–20, 2023: American Association of Colleges and Universities (AAC&U) Annual Meeting

San Francisco, California

<https://www.aacu.org/event/2023-annual-meeting>

Titled “Reclaiming Liberal Education,” the 2023 annual meeting will focus on what we are for as a community of educators and leaders in higher education—and why.

January 23–26, 2023: Future of Education Technology Conference (FETC)

New Orleans, Louisiana

<https://www.fetc.org/>

Presentations of new technologies, best practices, and pressing issues.

March 24–28, 2023: Higher Learning Commission Conference

Chicago, Illinois

<https://www.hlcommission.org/Programs-Events/conference.html>

Held annually in the spring in Chicago, the conference offers learning, professional development, and networking opportunities for HLC members.

April 13–15, 2023: The American Council on Education’s Annual Meeting

Washington, D.C.

<https://www.acenet.edu/Events/Pages/ACE2023.aspx>

Regarded as the most distinguished higher education event nationwide, more than 2,000 executive leaders in higher education regularly attend the annual conference. With a focus on data-driven insights, next year’s participants can look forward to three days full of networking opportunities, information sessions, and more.

May 22–24, 2023: Lilly National Conferences: Teaching and Learning

Austin, Texas

<https://www.lillyconferences-tx.com>

Provides opportunities for the presentation of the Scholarship of Teaching and Learning. Faculty and administrators at various stages in their academic careers come from across the United States, representing nearly every discipline found in higher education.

June 9–11, 2023: The Teaching Professor Conference

New Orleans, Louisiana

<https://www.magnapubs.com/conferences/2023-teaching-professor-conference/>

Focuses upon practical, evidence-based tools and practices to help them excel in the classroom.

June TBD, 2023: EduData Summit

New York, New York

<https://edudatasummit.com/>

EduData Summit (EDS) is a premier forum for data-driven educators. Learn and share best practices regarding big data, predictive analytics, learning analytics, and education.

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Call for Papers


The *Journal of Military Learning (JML)* is a peer-reviewed, semiannual publication that supports efforts to improve education and training for the U.S. Army and the overall profession of arms.

We continually accept manuscripts for subsequent editions with editorial board evaluations held in April and October. The *JML* invites practitioners, researchers, academics, and military professionals to submit manuscripts that address the issues and challenges of adult education and training such as education technology, adult learning models and theory, distance learning, training development, and other subjects relevant to the field. Submissions related to competency-based learning will be given special consideration.

Submissions should be between 3,500 and 5,000 words and supported by research, evident through the citation of

sources. Scholarship must conform to commonly accepted research standards such as described in *The Publication Manual of the American Psychological Association*, 7th edition.

Do you have a “best practice” to share on how to optimize learning outcomes for military learners? Please submit a one- to two-page summary of the practice to share with the military learning enterprise. Book reviews of published relevant works are also encouraged. Reviews should be between 500 to 800 words and provide a concise evaluation of the book.

Manuscripts should be submitted to usarmy.leavenworth.tradoc.mbx.armyu-journal-of-military-learning@army.mil by 1 April and 1 October for the October and April editions respectively. For additional information, call 913-684-2090 or send an email to the address above. 

Author Submission Guidelines

Manuscripts should contain between 3,500 to 5,000 words in the body text. Submissions should be in Microsoft Word, double-spaced in Courier New, 12-point font.

Manuscripts will use editorial style outlined in *The Publication Manual of the American Psychological Association*, 7th edition. References must be manually typed. (The automatically generated references employed by Microsoft Word have proven to be extremely problematic during conversion into final layout format for publication, causing delays and additional rekeying of material.) Manuscripts that arrive with automated references will be returned to the authors for compliance with submission requirements. Bibliographies will not be used and should not be submitted with manuscripts.

Submissions must include a one-paragraph abstract and a biography not to exceed 175 words in length for each author. Such biographies might include significant positions or assignments, notes on civilian and military education together with degrees attained, and brief allusions to other qualifications that establish the bona fides of the author with regard to the subject discussed in the article. Do not submit manuscripts that have been published elsewhere or are under consideration for publication elsewhere.

Authors are encouraged to supply relevant artwork with their work (e.g., maps, charts, tables, and figures that support the major points of the manuscript. Illustrations may be submitted in the following formats: PowerPoint, Adobe Illustrator, SVG, EPS, PDF, PNG, JPEG, or TIFF. The author must


specify the origin of any supporting material to be used and must obtain and submit with the article permission in writing authorizing use of copyrighted material. Provide a legend explaining all acronyms and abbreviations used in supplied artwork.

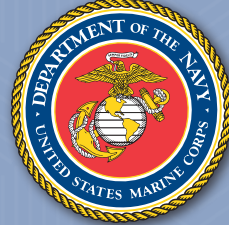
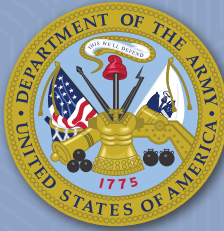
Photo imagery is discouraged but will be considered if it is germane to the article. Authors wanting to submit original photographs need to do so in JPEG format with a resolution of 300 DPI or higher. Each submitted photo must be accompanied by a caption identifying the date it was taken, the location, any unit or personnel in the photo, a description of the action, and a photo credit specifying who took the photo. Captions should generally be between 25 and 50 words.

The *Journal of Military Learning (JML)* will not consider for publication a manuscript failing to conform to the guidelines above.

The editors may suggest changes in the interest of clarity and economy of expression; such changes will be made in consultation with the author. The editors are the final arbiters of usage, grammar, style, and length of article.

As a U.S. government publication, the *JML* does not have copyright protection; published articles become public domain. As a result, other publications both in and out of the military have the prerogative of republishing manuscripts published in the *JML*.

Manuscripts should be submitted to us-army.leavenworth.tradoc.mbx.army-journal-of-military-learning@army.mil by 1 April and 1 October for the October and April editions respectively. For additional information, call 913-684-2090 or send an email to the address above. 



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