A Dissertation

entitled

Distance Learning During Combat Deployment:

A National Exploratory Study of Factors Affecting Course Completion

by

Ann F. Trettin

Submitted to the Graduate Faculty as partial fulfillment of the requirements

for the Doctor of Philosophy Degree in Higher Education

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David Meabon, PhD, Committee Chair

_____

Judy Lambert, PhD, Committee Member

_____

Ronald Opp, PhD, Committee Member

_____

Jennifer Reynolds, PhD, Committee Member

_____

Amanda Bryant-Friedrich, PhD, Dean
College of Graduate Studies

The University of Toledo
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An Abstract of

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This study explored multiple factors related to the distance learning experiences of soldier-students who engaged in distance learning while deployed to a combat area. Data was gathered from 144 participants who completed an online questionnaire. Fifty-two factors potentially affecting the dependent variable of *course completion* were examined through a systems theory lens at the macro, mezzo, and micro levels. Nearly all factors found to have significant differences in those soldier-students who completed their distance learning course and those who did not complete their course were found in the higher education domain at the mezzo and micro levels. These factors included the Instructor behaviors of frequent contact and flexibility, student satisfaction, and program completion. In addition, half of this study's participants reported experiencing role conflict as a result of their decision to study while deployed. The results of this study suggest the value of future research focused on role conflict, in both the higher education and military domains, for those soldier-students that simultaneously engage in distance learning and combat deployment.

This research project is dedicated to the combat veterans of Operations Iraqi Freedom, New Dawn, Enduring Freedom and Resolute Support, the veterans who came before them, and those who will follow in their footsteps.

Acknowledgments

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Table of Contents

List of Tables

List of Abbreviations

ACES……..……..Army Continuing Education System

ADL…….…Advanced Distributed Learning

ANCOC……Advanced noncommissioned officer course

APA……...…..…American Psychological Association

BNCOC…….…..Basic noncommissioned officer course

BMT……..……Battlemind Training

CD-RISC 10…….…….Connor-Davidson Resilience Scale 10

CSF…….…….Comprehensive Soldier Fitness

CTT…….Classical Test Theory

CTU……..Colorado Technical University

DL……...Distance Learning

DLDCD……..…...Distance Learning During Combat Deployment

DoD…….Department of Defense

DRRI-2……..……Deployment Risk and Resilience Inventory-2

EOD……Explosive Ordnance Disposal

ESO…….Education Services Officer

ESS…….Education Services Specialist

GWOT……Global War on Terror

HED…….….Higher Education

IP…….....Internet Provider

IRB……Institutional Review Board

IRR……..Individual Ready Reserve

IRT……..…..Item Response Theory

ISAF…….…..……International Security Assistance Force

MFO…….……Multinational Force & Observers

NATO…….……..North Atlantic Treaty Organization

NCOES…….……Noncommissioned Officer Education System

OEF……..……..Operation Enduring Freedom

OIF…….Operation Iraqi Freedom

OND……...…..…Operation New Dawn

PTSD……..Posttraumatic Stress Disorder

RAND…….……..Research and Development

RSM…….Resolute Support Mission

SPSS……..…….Statistical Package for the Social Sciences

SVA…….Student Veterans of America

TRADOC……...…Training and Doctrine Command

U.S……..…….….United States

VA……...…U.S. Department of Veterans Affairs

WGU…….……Western Governors University

WLC…….…….Warrior Leader Course

Chapter One

Introduction

The United States (U.S.) military is recognized as an institution that develops talent in areas such as leadership, teamwork behavior, work ethics, adaptability and fitness (Wardynski, Lyle & Colarusso, 2010). Within the U.S. military environment, the use of distance learning (DL) technology has become indispensable as one means to advance these areas of individual growth (MIT Conference, 2003). The U.S. military system uses DL in ways similar to the general population, such as required human resource training, and it also provides online courses for the professional education of personnel to advance to the next grade. In addition, the U.S. military encourages broader academic education outside of the military, with many active duty service members engaged in DL to complete a technical or college degree (Borel, 2004; Dempsey, 2010; Hills, 2010). Global War on Terror (GWOT) – era soldier-students have turned to DL in increasing numbers to pursue academic studies (Keating, 2005: Samuels, 2005). As a result, educational expectations are increasing, especially the ability to provide learning "anytime, anyplace" (Shanley, et al., 2012). Given the military's continually expanding use of DL around the world, it is valuable to explore factors at multiple systems levels – macro, mezzo, and micro, and the soldier-student's ability to attain *course completion*. This study focused particular attention on those military students who have engaged in distance learning during combat deployment (DLDCD).

Statement of the Problem

The total military-affiliated population in the United States represents a significant source of college students, including 1.3 million active-duty personnel, 125,000 reservists, and 450,000 Air Force and Army National Guard members (Defense

Manpower Data Center, 2016). All active duty military personnel who are currently serving have completed their secondary education; 95% earned their high school diploma and 5% obtained their GED. These individuals are ideal and motivated prospects for undergraduate studies (Lehman, 2010). As a result, the number of military students who are opting to learn while they are serving is increasing (Murray, 2013). This subset of adult learners has had very little focus in the research (Gibson, Kupczynski, & Ice, 2010). While there is literature regarding military DL in general, research specifically focused on DL experiences in a combat area is scarce. The preliminary research completed so far indicates that studying during deployment is such a difficult endeavor that most soldier-students do not complete degrees until after they leave the military, if they complete them at all (McMurray, 2007).

From a military mission perspective, the process of an individual's engagement in DLDCD can negatively impact unit cohesion (McBreen, 2002). Conversely, the need to maintain combat readiness, of the individual and the unit, can interfere with an individual's academic needs and responsibilities (Warner et al., 2011). McBreen (2002) reports that the resulting role conflict is sometimes solved at the expense of the military unit. However, in contrast to the role conflict concerns of McBreen and Warner, one Marine unit stationed in Iraq found that studying together for the same DL course actually became an effective means to enhance unit cohesion (geteducated.com, 2016). There is no research exploring how the demands of being an active member of a cohesive military unit while deployed to a combat area affects the group dynamic and the soldier-student's individual DL experience. This study seeks to fill that research gap.

Significance of the Problem

Since World War I, American history has known an average of only thirteen years of peace between major military conflicts (Coll & Weiss, 2015). Currently, U.S. personnel from every branch of the U.S. military, the U.S. National Guard and U.S. Reserves are deployed throughout the world, with 150,560 service members serving in foreign countries (Defense Manpower Data Center, 2016). Over 3.2 million soldiers, sailors, marines and airmen have deployed in Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF) (Defense Manpower Data Center, 2016). The GWOT has been ongoing since October, 2001. The most recent mission of the International Security Assistance Force (ISAF), North Atlantic Treaty Organization (NATO) mandate in Afghanistan, ended on December 31, 2014. However, there is no indication of a complete withdrawal. Rather, another operation called Resolute Support Mission (RSM) was implemented on January 1, 2015 to provide further training and assistance to the Afghanistan security forces (NATO, 2016). Approximately 9,800 American troops continue to serve in this region (Sisk, 2014; Smith, 2013). In fact, a current U.S. presidential authorization indicates a more expansive mission for the military that includes a direct role in combat operations and maintaining a force of 8,400 troops in Afghanistan (Mazetti & Schmitt, 2014). In May, 2016, NATO allies agreed to sustain the RSM presence beyond 2016 (NATO, 2016).

In addition, OIF, which began in the fall of 2002, continues on with counter-insurgency and stability operations, and is renamed Operation New Dawn (OND) (Belasco, 2011). President Obama authorized the deployment of an additional 1,500 American troops to operate out of Iraqi bases and he expects U.S. involvement in Iraq to

last into the presidency of his successor (Cooper & Shear, 2014). Beyond Afghanistan and Iraq, as political, economic, information, and cultural systems become more complex and interconnected, it is expected that U.S. military will continue to be called upon to maintain homeland security for many years to come (Dempsey, 2010).

The stress inherent in the Iraq and Afghanistan theaters is compounded by the fact that so many service members have been deployed for multiple tours. In fact, 37% of the 2 million soldiers who were deployed to Iraq and Afghanistan since 2001 were deployed more than once (Shea-Porter, 2009). These combat experiences lend themselves to an extensive set of barriers to the attainment of post-secondary aspirations (American Council on Education, 2008). Therefore, an important variable in this study was the number of times the soldier-student served prior to and including the DLDCD experience.

The increase in number of deployments in military operations since 2001 has encouraged higher education institutions and the U.S. military to adapt to new challenges, partnerships, and program offerings for soldier-students (Beem, 2005; Brown, 2010). The soldier student's worldview and physiology in an ongoing threat situation is different from being in a safe learning environment where keeping alert and hyper-vigilant are not required (Pryce, Pryce, & Shackelford, 2012). However, even in perilous circumstances, online technologies are seen to have a role in building communities of learning (Stewart, 2004; Wheeler, 2002). The online military learner in the twenty-first century has such demanding and inconceivable pressure through global involvement in terrorism prevention, natural disasters aid, and human rights relief that perhaps even their satisfaction with university and faculty support services might not be enough to aid them

in their ability to persist. Unfortunately, without studies specific to them, there is no way for higher education administrators to determine if the infrastructure is in place for their success (Hayek, 2011).

Over ten billion dollars has been spent to send at least 950,000 military students and veterans to school on the Post-9/11 GI Bill (U.S. Department of Veterans Affairs, 2013). This extensive federal financial commitment to higher education, coupled with ongoing U.S. military obligations around the world, supports the assumption that soldier-students will continue to be challenged by the potentially conflicting roles of soldier and student, and emphasizes the importance of research focused on soldier-student academic outcomes.

Purpose of the Study

The purpose of this study was to increase understanding in the military, higher education, and personal/family systems about the simultaneous, and perhaps conflicting, roles of soldier and student in order to inform future policy, procedure and decision-making in all three domains. Differences in independent variables at multiple systems levels on the soldier-student's ability to successfully complete a DL course while deployed to a combat area were explored. Using a systems theory framework, independent variables were grouped in the following manner: *macro* - variables that are influenced by decisions and interactions at the institutional systems level; *mezzo* - variables influenced by decisions and interactions at the group systems level; and *micro* - variables influenced by decisions and interactions at the individual systems level. Military macro independent variables explored are: *combat zone, number of times deployed to a combat area, length of deployment, level of hazardous duty, Battlemind*

Training (BMT) completion, Comprehensive Soldier Fitness (CSF) training completion, Military Education Center (MEC) use, adequate MEC support, adequate technical help, consistent Internet access, and combat environment as measured by the Deployment Risk and Resilience Inventory-2 (DRRI-2) C survey. Military mezzo variables, factors associated with the soldier-student's military unit, are *unit members' support, unit leaders' support, self-reported military role conflict with distance learning, unit relationships,* as measured by the DRRI-2 K1 survey, and *level of unit support,* as measured by the DRRI-2 J survey. Military micro variables include the soldier-student's *total number of deployments, number of deployment while engaged in DLDCD,* and *military affiliation, rank,* and *occupation.*

Higher education macro variables are the *pace of the DL course*, and the *higher education institution.* Mezzo variables within the higher education system include *frequency of Instructor contact, timeliness of Instructor response, flexibility of Instructor, DL classmate support,* the *ability to engage in DL teamwork, self-reported DLDCD role conflict with military responsibilities* and the *DL course.* Micro higher education variables are *DL online hours, DL offline hours, comfort with DL course options,* the *ability to manage academic workload,* the *ability to meet academic deadlines, higher education goal related to DLDCD, program completion related to DLDCD, DLDCD expectations met, satisfaction with DLDCD, willingness to engage in DLDCD again, degree aspiration,* and the *highest level of education prior to DLDCD.*

Personal and family variables at the mezzo systems level are *family support, first generation college student status, parent status* and *family size.* Personal micro variables explored are *comfort with basic computer applications, level of resiliency* as measured by

the Connor-Davidson Resilience Scale 10 (CD-RISC 10), *age*, *gender*, *race*, and *relationship status.*

Conceptual Framework

Systems theory and system dynamics are often found in the literature of education in general and distance education in particular (Anderson, 2004; Saba & Shearer, 1994). As our understanding of systems theory has evolved, ecological theory has emerged as a subcategory of systems theory and focuses on the interaction between the person and the environment. Ecological thinking views the individual and his or her environment as a dynamic, interactive system in which each component affects and is affected by the other (Berg-Weger, 2013; Friedman & Allen, 2011; Germain & Gitterman, 2008; Weiss-Gal, 2008; Zastrow, 2013; Zastrow & Kirst-Ashman, 2013). The two primary dimensions of person-environment are "role problems and problematic transactions that individuals may be having with their environments" (Seabury, Seabury, & Garvin, 2011, p. 283). These person-environment dimensions provided the context for this study of the soldier-student's potential role conflicts, that is, serving as a member of a cohesive military unit while simultaneously actively engaged in some type of DL experience.

A product of ecological thinking, resiliency theory is an emerging paradigm that provides a framework focused on an individual's strength (Greene, 2012; Van Hook, 2014). The concept of resilience is described as "a complex interplay between certain characteristics of individuals and their broader environments" (Greene & Conrad, 2012, p. 37). Psychological resilience is a concept that recognizes "the human ability to adapt and positively overcome stressful life interruptions and events" (Britt & Oliver, 2013, p. 52). Resilience is a process that demonstrates one's ability to maintain role performance

in spite of adversity, whereas resiliency is an outcome of the resilience process and is represented by "successful performance of life roles" (Bowen & Martin, 2011, p. 168). Since 2009, the concept of resilience has become increasingly important to U.S. military training. At that time, testing was adopted to detect the service member's level of resilience and training was implemented to promote resiliency in the troops (Casey, 2011). Exploring the soldier-student's learning experiences in this study using this same resilience lens is consistent with current U.S. military training models.

One aspect of resilience specific to the military environment is unit cohesion. Meredith et al. (2011) identify unit cohesion as a resilience factor, and define it as "team ability to perform combined actions; bonding together of members to sustain commitment to each other and the mission" (p. 22). However, Britt & Oliver state that there is no direct research linking unit cohesion to resilience (2013). Regardless of this discussion in the literature, developers of the Deployment Risk and Resilience Inventory-2 (DRRI-2), a survey tool currently used by the military to measure level of resilience, also identify unit cohesion as a protective factor (Vogt et al., 2012). It will therefore be useful to explore the effect of unit cohesion on the soldier-student's ability to academically persist, given that unit cohesion is a potential source of role conflict for the soldier-student in theater.

Research Questions

This study explored the experiences of students engaged in DL course work while deployed to a combat area. The following questions were pursued:

1. What are the differences, if any, in the military macro variables of *combat zone, number of times deployed to a combat area, length of deployment, level of hazardous*

duty, completion of Battlemind Training (BMT), completion of Comprehensive Soldier Fitness Training (CSF), use of Military Education Center (MEC), adequacy of MEC support, adequate technical help consistent Internet access and *combat environment (DRRI-2 C)* for those soldier-students who completed their DLDCD course and those who did not complete their course?

2. What are the differences, if any, in the military mezzo variables of *unit members' support of DLDCD, unit leaders' support of DLDCD, military role conflict with DLDCD, unit relationships (DRRI-2 K1),* and *unit support (DRRI-2 J)* for those soldier-students who completed their DLDCD course and those who do not complete their course?
3. What are the differences, if any, in the military micro factors of *number of deployment while engaged in DLDCD, military affiliation, military rank,* and *military occupation* for soldier-students who completed their distance learning course while deployed and those who did not complete their course?
4. What are the differences, if any, in the higher education macro variables of *higher education institution* and *pace of DL course* for soldier-students who completed their DLDCD course and those who did not complete their course?
5. What are the differences, if any, in the higher education mezzo variables of *frequency of Instructor contact, timeliness of Instructor response, Instructor flexibility, DL classmate support,* the *ability to engage in DL teamwork, DLDCD role conflict with military responsibilities,* and *DL course* for soldier-students who completed their DLDCD course and those who did not complete their course?

6. What are the differences, if any, in the higher education micro variables of *DL online hours per week, DL offline hours per week, comfort with DL course options,* the *ability to manage academic workload,* the *ability to meet academic deadlines,* the *higher education goal related to DLDCD, program completion related to DLDCD, expectations of DLDCD, satisfaction with DLDCD, willingness to engage in DLDCD again, degree aspiration* and *level of education completed* for soldier-students who completed their DLDCD course and those who did not complete their course?
7. What are the differences, if any, in the personal/family mezzo variables of *family support, first generation college student status, parent status,* and *family size* for soldier-students who completed their DLDCD course and those who did not complete their course?
8. What are the differences, if any, in the personal micro variables of *comfort with basic computer applications, level of resilience (CD-RISC 10), age, gender, race* and *relationship status* for soldier-students who completed their DLDCD course and those who did not complete their course?

Definition of Independent Variables

The independent variables in this study are defined as follows:

Research Question #1: Military Macro

Combat Zone: this categorical variable indicates the soldier-student's location at the time of DLDCD. Combat zones are designated by Executive Order from the President of the United States (Appendix G)

Number of times deployed to a combat area: this categorical variable is the total number of deployments served in a combat area prior to and including the DLDCD

Length of deployment: this categorical variable is the number of months served during the soldier-students' tour of duty to the combat area while also engaged in distance learning

Level of hazardous duty: this categorical variable indicates the soldier-student's compensation to assess level of risk – received hazardous duty pay, received two or more types of hazardous duty pay, or did not receive hazardous duty pay

Completion of Battlemind Training: this categorical variable indicates whether the soldier-student completed the Battlemind resilience-strengthening program prior to the distance learning experience (yes), did not complete this training (no), or is uncertain regarding the completion of this program

Completion of Comprehensive Soldier Fitness (CSF) training: this categorical variable indicates whether the soldier-student completed the CSF training (yes), did not complete CSF training (no), or is uncertain regarding the completion of this program

Use of Military Education Center (MEC): this categorical variable indicates the soldier-student's decision to access and the availability of MEC support while engaged in DLDCD (yes), chose not to use MEC support (no), or did not have access to a MEC while engaged in DLDCD

Adequacy of MEC support: this categorical variable indicates the soldier-student's perception of the adequacy of MEC support – adequate support (yes), inadequate support (no), or no access to MEC

Adequate technical help: this categorical variable indicates the soldier-student's perception of adequate technical help, with 1 indicating strong disagreement, 2 disagreement, 3 neither disagreement nor agreement, 4 agreement, and 5 indicating strong agreement

Consistent Internet access: this categorical variable indicates the soldier-student's experience of consistent Internet access, with 1 indicating strong disagreement, 2 disagreement, 3 neither disagreement nor agreement, 4 agreement, and 5 indicating strong agreement

Combat Environment (DRRI-2 C): this continuous variable indicates the soldier-student's perception of the conditions of day-to-day life while deployed. Scores range from 14 to 70, with higher scores indicating a more stressful deployment environment

Research Question #2: Military Mezzo

Unit members' support of DLDCD: this categorical variable indicates the soldier-student's perceived support of DLDCD from unit members, with 1 indicating strong disagreement, 2 disagreement, 3 neither disagreement nor agreement, 4 agreement, and 5 indicating strong agreement

Unit leaders' support of DLDCD: this categorical variable indicates the soldier-student's perceived support of DLDCD from unit leaders, with 1 indicating strong disagreement, 2 disagreement, 3 neither disagreement nor agreement, 4 agreement, and 5 indicating strong agreement

Self-reported military role conflict with DLDCD: this categorical variable indicates the soldier-student's level of military role responsibilities interfering with DLDCD

responsibilities, with 1 indicating strong disagreement, 2 disagreement, 3 neither disagreement nor agreement, 4 agreement, and 5 indicating strong agreement

Unit relationships (DRRI-2 K 1): this continuous variable indicates the soldier-student's quality of relationships with unit members during deployment. Scores range from 8 to 32, with lower scores indicating more positive relationships.

Unit support (DRRI-2 J): this continuous variable indicates the soldier-student's perception of level of unit support. Scores range from 12 to 70, with higher scores indicating a higher level of support.

Research Question #3: Military Micro

Number of deployment while engaged in DLDCD: this categorical variable is the number of times that the soldier-student was deployed prior to and including the DLDCD experience

Military affiliation: this categorical variable indicates specific active duty enlistment (Air Force, Army, Coast Guard, Marine Corps, Navy) or citizen soldier affiliation (National Guard, Reserves)

Military rank: this dichotomous variable indicates either enlisted military personnel or officer rank

Military occupation: this categorical variable indicates the soldier-student's military occupation while engaged in DLDCD. These occupations were grouped using DoD codes.

Research Question #4: Higher Education Macro

Pace of DL course: this categorical variable indicates the pace of the DL course – standard university semester, five – eight week accelerated course, self-

paced/competency-based module, Massive Open Online Course (MOOC), ten weeks – 5 modules

Higher education institution: this categorical variable is the higher education institution that the soldier-student was enrolled in while engaged in DLDCD

Research Question #5: Higher Education Mezzo

Frequency of Instructor contact: this categorical variable is the soldier-student's report of frequency of Instructor contact – multiple times per day, about once a day, 3 – 4 times per week, 1 – 2 times per week, less than once per week, or never

Timeliness of Instructor response: this categorical variable indicates how quickly the Instructor responded to the soldier-student's questions – the same day, the next day, within 2 – 3 days, after 3 or more days, or never

Instructor flexibility: this categorical variable indicates the soldier-student's perception of Instructor flexibility, with 1 indicating strong disagreement, 2 disagreement, 3 neither disagreement nor agreement, 4 agreement, and 5 indicating strong agreement

DL classmate support: this categorical variable indicates the soldier-student's experience of DL classmate support, with 1 indicating strong disagreement, 2 disagreement, 3 neither disagreement nor agreement, 4 agreement, and 5 indicating strong agreement

Ability to engage in DL teamwork: this categorical variable indicates the soldier-student's ability to engage in DL teamwork, with 1 indicating strong disagreement, 2 disagreement, 3 neither disagreement nor agreement, 4 agreement, and 5 indicating strong agreement

DLDCD role conflict with military responsibilities: This categorical variable is the soldier-student's perception of level of DL responsibilities interfering with military

responsibilities, with 1 indicating strong disagreement, 2 disagreement, 3 neither disagreement nor agreement, 4 agreement, and 5 indicating strong agreement

DL course: this categorical variable is the name of the course that the DL student was enrolled in while engaged in DLDCD

Research Question #6: Higher Education Micro

DL online hours per week: this categorical variable is the number of reported hours spent online related to DLDCD – none, 1 – 3 hours, 4 – 6 hours, 7 – 10 hours, 11 – 15 hours, more than 15 hours

DL offline hours per week: this categorical variable is the number of reported hours spent offline related to DLDCD – none, 1- 3 hours, 4 – 6 hours, 7 – 10 hours, 11 – 15 hours, more than 15 hours

Comfort with DL course options: this categorical variable is the soldier-student's report of comfort level with DL course options, with 1 indicating strong disagreement, 2 disagreement, 3 neither disagreement nor agreement, 4 agreement, and 5 indicating strong agreement

Able to manage academic workload: this categorical variable is the soldier-student's perception of ability to manage academic workload, with 1 indicating strong disagreement, 2 disagreement, 3 neither disagreement nor agreement, 4 agreement, and 5 indicating strong agreement

Able to meet academic deadlines: this categorical variable is the soldier-student's report of ability to meet academic deadlines, with 1 indicating strong disagreement, 2 disagreement, 3 neither disagreement nor agreement, 4 agreement, and 5 indicating strong agreement

Higher education goal related to DLDCD: this categorical variable indicates the specific higher education program pursued by the soldier-student during the distance learning experience (military training, 2-year degree, 4-year degree, graduate school, personal growth)

Program completion related to DLDCD: this categorical variable indicates the soldier-student's program completion related to DLDCD (yes; still pursuing the training, degree or program; decided not to complete training, degree or program)

Expectations of DLDCD: this categorical variable is the soldier-student's report of having expectations of DLDCD met, with 1 indicating not at all true, 2 somewhat true, and 3 indicating very true

Satisfaction with DLDCD: this categorical variable is the soldier-student's report of degree of satisfaction with DLDCD, with 1 indicating not at all true, 2 somewhat true, and 3 indicating very true

Willingness to engage in DLDCD again: this categorical variable is the soldier-student's report of willingness to engage in DLDCD again, with 1 indicating not at all true, 2 somewhat true, and 3 indicating very true

Degree aspiration: this categorical variable is the soldier-student's higher education goal: associate, bachelor, master, doctorate, professional (MD, JD, DDS, etc.), or other

Level of education completed: this categorical variable is the soldier-student's level of education completed prior to DLDCD - high school diploma or equivalency, associate, two year, or junior college, bachelor, master, doctorate, profession (MD, JD, DDS, etc.)

Research Question #7: Personal/Family Mezzo

Family support: this categorical variable is the soldier-student's perception of family support, with 1 indicating strong disagreement, 2 disagreement, 3 neither disagreement nor agreement, 4 agreement, and 5 indicating strong agreement

First generation college student status: this dichotomous variable indicates the soldier-student's status as a first generation college student (yes, no)

Parent status: this dichotomous variable indicates the soldier-student's parent status (yes, no)

Family size: this categorical variable is the number of children that the soldier-student had, under the age of 18, at the time of engagement in DLDCD

Research Question #8: Personal Micro

Comfort with basic computer applications: this categorical variable is the soldier-student's reported level of comfort with basic computer applications, with 1 indicating strong disagreement, 2 disagreement, 3 neither disagreement nor agreement, 4 agreement, and 5 indicating strong agreement

Level of resilience: this continuous variable is the total score of the Connor-Davidson Resilience Scale 10 (CD-RISC 10), ranging from 0 to 40 with higher scores reflecting a greater level of resilience

Age: this categorical variable is the soldier-student's current chronological age

Gender: this categorical variable is the soldier-student's gender (male, female)

Race: this categorical variable is the soldier-student's race (White, African-American, American Indian, Asian, Pacific Islander, Hispanic, from multiple races)

Relationship status: this categorical variable is a description of the soldier-student's current relationship status (married; widowed; divorced; separated; in a domestic partnership or civil union; single, but cohabiting with a significant other; single, never married)

Definition of Terms

Branch of service: specific active-duty service of the U.S. military and their respective Guard and Reserve units; all branches are equal parts of the United States Uniformed Services, headed by the President of the United States as Commander in Chief. The Army, Marine Corps, Navy and Air Force fall under the jurisdiction of the Department of Defense (DoD). The Coast Guard reports to the Department of Homeland Security during peacetime and to the DoD (by way of the Navy) during wartime.

Combat area: designated by an Executive Order from the President of the United States as an area in which the U.S. Armed Forces are engaging or have engaged in combat, or designated areas outside a combat zone where service is in direct support of military operation in the combat area (Internal Revenue Service, 2012; military.com, 2013).

Deployment: refers to activities required to move military personnel and materials from a home installation to a specified destination (military.com).

Distance learning: (U.S. Army definition) "the delivery of standardized individual, collective and self-development training to soldiers and units anywhere and anytime through the application of information technologies" (Wisher, Sabol, & Moses, 2002, p. 2).

Military Education Center: a multi-use learning facility located on a military base (GoArmyEd, 2013).

Resilience: the sum total of psychological processes that permit individuals to maintain or return to previous levels of well-being and functioning in response to adversity (The Technical Cooperation Program, 2008).

Unit cohesion: "the unity that binds individual soldiers toward a common purpose and creates the will to succeed; built on a sense of belonging and purpose, good morale and discipline" (Dempsey, 2010, p. 20).

Methodology

The research design for this study was quantitative, descriptive and non-experimental. Data collection began with the endorsement and assistance of the Iraq and Afghanistan Veterans of America (IAVA), who agreed to post a link to the survey instrument on the organization's website and Facebook page. The IAVA is an online community with a current membership of over 200,000 veterans and family members. At the time of data collection, their Facebook page had over 507,000 'likes,' increasing the exposure of the survey link and therefore the potential to access eligible participants. Military Education Centers (MEC) all over the world were also contacted via email, using contact information found on GoArmyEd.com. They were asked to share the survey link with eligible participants. Data collection was then expanded through the use of social media, with the support of Servicemembers Opportunity Colleges leadership and the national office of the Student Veterans of America.

The Connor-Davidson Resilience Scale 10 (CD RISC 10) was used to measure level of resilience. In a methodological review of resilience measurement scales, CD RISC received one of the best psychometric ratings of the nineteen measures reviewed (Windle, Bennett, & Noyes, 2011). The CD RISC 10 comprises items 1, 4, 6, 7, 8, 11,

14, 16, 17, and 19 from the original scale of 25 items and was developed by Drs. Campbell-Sills and Stein, at the University of California, San Diego, on the basis of factor analysis (Connor & Davidson, 2013, p. 3). Jonathon Davidson, M.D. and Kathryn Connor, M.D., the developers of the CD RISC 25 scale, have years of experience treating men and women with posttraumatic stress disorder (PTSD) and gave permission to use the CD-RISC 10 for this study. The instrument was obtained, via internet, by contacting Dr. Davidson directly.

The U.S. Department of Veterans Affairs granted permission to use the Deployment Risk & Resiliency Inventory-2 (DRRI-2). The DRRI-2 is the product of a Department of Veteran Affairs sponsored research program. The goal of the project was "to provide a research inventory of risk and resilience measures that can be used to assess specific deployment-related factors that have implications for Servicemembers' and Veterans' long-term health" (Vogt, Smith, King, & King, 2012, p. 3). Three subscales from this test inventory were used: Section C - Deployment Environment; Section J - Unit Social Support, and Section K1 - Relationships during Deployment. Personal and military-specific demographic information and self-reported student outcomes were also collected using a survey format.

Assumptions and Limitations

It is assumed that participants who completed the DLDCD survey answered honestly. However, it is possible that the negative experiences of combat deployment could have caused participants to respond in an understated manner, limiting accuracy (Reynolds, 2002). Intentionally, no questions were asked regarding exposure to traumatic experiences. Therefore, this potentially limits the information obtained from

those soldier-students who have experienced trauma while engaged in DLDCD. In spite of this limitation in the research design, the decision to refrain from asking questions regarding traumatic incidents was made to minimize the potential for any triggering or re-traumatizing as a result of completing the survey.

The data was compiled from those soldier-students who were willing to respond to an online survey. It is possible that those who chose to respond to this survey are characteristically more persistent than those who chose not to respond. In addition, perhaps those who completed the survey value college education at a higher level than those who did not participate, or perhaps their interest in responding is related to their own degree aspirations. However, it is not really possible to assess the differences between those participants who responded to the survey and those who did not.

Summary

As long as United States military forces are deployed in hostile regions, military and higher education administrators as well as faculty who design and instruct DL courses will play a vital role in facilitating learning and accommodating for these extreme circumstances. Clearly additional research is needed, as the welfare of soldier-students and military units will be impacted by the way that stakeholders deal with these unique learning issues (McMurray, 2007). "New procedures and processes that may be perceived to take resources or time away from other mission-related requirements can be met with resistance. Therefore, developing new procedures in a military organization and environment will require compelling analysis and feedback from soldiers" (Murray, 2013, p. 4). The results of this study which explored macro, mezzo, and micro factors across military, higher education, and personal/family domains on the student outcome of

course completion provides input, directly from soldier-students, to military and higher education policy and program decision-makers.

Chapter Two

Literature Review

Introduction

Within the U.S. military environment, distance learning (DL) has become indispensable. Technology is used to provide human resource training and professional education for personnel to advance to the next grade. In addition, the U.S, military encourages higher education outside of the military. The U.S. Army also has an expansive vision for a greatly increased role for DL in the future, in particular the ability to provide learning experiences at any time and in any place.

The U.S. has become involved in a military operation every two years since the end of the cold war. History has shown that it takes five to eight years to disengage from a stabilization and reconstruction activity. This results in an accumulating need for skilled personnel stationed all over the world (Defense Science Board Task Force, 2007) and demonstrates the likelihood that DL experiences will take place in designated combat areas for some time to come.

Research specifically focused on distance learning during combat deployment (DLDCD) is scarce. The preliminary research completed so far indicates that studying during deployment is so difficult that most soldier-students do not complete degrees until after they leave the military, if they complete them at all (McMurray, 2007). The potential for role conflict exists when a soldier-student is required or elects to engage in DLDCD. The soldier-student's focus on academics can negatively impact unit cohesion (McBreen, 2002). Likewise, the need to maintain the unit's combat readiness can interfere with the student's academic needs (Warner et al., 2011). The resulting role

conflicts are sometimes solved at the expense of the unit (McBreen, 2002), however, there are no research studies exploring how these conflicts affect the soldier-student's DL experience. This chapter will review the literature and present the rationale for conducting studies that will help to fill this research gap.

The literature documenting research on DL and military education was reviewed to justify the need and provide the direction for this study (Creswell, 2008). Distance education topics include the history of DL, military DL in particular, and the teaching, learning, and course design aspects of DL. To address the dependent variable of *course completion*, a brief overview of persistence literature is included in this review. Summaries of the resilience and unit cohesion literature, two important variables in this study, are also included. A description of the available literature about the soldier-student and the citizen-soldier, military culture, and deployment issues follow. Finally, a discussion of the use of social media for research completes the review that informs this study. Although posttraumatic stress disorder (PTSD) and traumatic brain injuries (TBI) have been topics of interest related to combat deployment, these topics are beyond the scope of this study and are not thoroughly reviewed here.

This review of historical and current literature was conducted using online databases, including Educational Resources Information Center (ERIC), Social Science Citation Index, Dissertation Abstracts, Government Documents Index, and PsycINFO. Published documents compiled by the Congressional Research Service, the Department of Defense, the Department of Veterans Affairs, the RAND Corporation and the U.S. Department of Education were also reviewed. Key terms and phrases used for this search

included distance learning, military higher education, course and degree completion, persistence, resilience, unit cohesion, and combat deployment.

Conceptual Framework

Systems theory and system dynamics are often found in the literature of education in general and distance education in particular (Anderson, 2008; Luppicini, 2002; Saba; 1999; Saba & Shearer, 1994; Smith & Dillon, 1999). "Distance education must be examined as a system, but to do so requires looking at the system and the variables that make up the system, sometimes a few at a time" (Smith & Dillon, 1999, p. 34). Systems theory was developed by Ludwig von Bertalanffy, a biologist, to describe the structure and mechanisms of organic systems (von Bertalanffy, 1968). However, there are multiple references to systems thinking in the educational literature. For example, Moore and Kearsley (1996) wrote, "It is not possible to improve quality, provide for more students, and lower costs without reorganizing education according to a systems model" (p. 7).

Systems thinking includes a set of methods and tools to analyze problems concerned with systemic and relational components of complex systems, the management of these systems and the management of change in these systems over time. This process is not linear, but rather recursive and multidirectional (Banathy, 1996). "The whole is more than the sum of its parts, the whole determines the nature of the parts, and the parts are dynamically interrelated and cannot be understood in isolation from the whole" (Banathy, 1996, p. 77). Therefore, micro qualities, such as self-organization, self-reference, self-regulation and behavior choices over time are considered together with structural change and evolution of the environment, macro and mezzo, over time. This

understanding of systems behavior emphasizes process in contrast to subsystems, structures and components (Banathy, 1996).

A systems view allows us to think of ourselves, the environments that surround us, and the groups and organizations in which we live in an interactive way, and enables us to understand how educational systems operate at several interconnected levels (e.g., institutional, administrational, instructional, learning experience levels). This includes relationships, interactions, and mutual interdependencies of systems operating at those levels and includes information, matter, and energy exchanges between these systems and environments (Banathy, 1996). Banathy states that "systemic educational renewal will become possible only if the educational community will develop a systems view of education, if it embraces the systems view, and if it applies the systems view in its approach to reform" (1996, p. 83).

Ecological theory has emerged as a subcategory of systems theory and focuses on the interaction between the person and the environment. Ecological thinking views the individual and his or her environment as a dynamic, interactive system in which each component affects and is affected by the other (Berg-Weger, 2013; Friedman & Allen, 2011; Germain & Gitterman, 2008; Weiss-Gal, 2008; Zastrow, 2013; Zastrow & Kirst-Ashman, 2013). The two primary dimensions of person-environment are "role problems and problematic transactions that individuals may be having with their environments" (Seabury, Seabury, & Garvin, 2011, p. 283). These person-environment dimensions support the exploration of the soldier-student's combat environment and provide the context for the study of potential role conflicts, that is, serving as a member of a military unit at the same time as engaging in some type of DL experience.

A product of ecological thinking, resiliency theory is an emerging paradigm that provides a framework focusing on an individual's strength (Greene, 2012; Van Hook, 2014). The concept of resilience is described as "a complex interplay between certain characteristics of individuals and their broader environments" (Greene & Conrad, 2012, p. 37). Psychological resilience is a concept that recognizes "the human ability to adapt and positively overcome stressful life interruptions and events" (Britt & Oliver, 2013, p. 52). Resilience is a process that demonstrates one's ability to maintain role performance in spite of adversity whereas resiliency is an outcome of the resilience process and is represented by "successful performance of life roles" (Bowen & Martin, 2011, p. 168).

The U.S. military has recently focused its attention on level of resilience as a prevention measure related to the impact of trauma exposure while in a combat area (Vogt, Smith, King, and King, 2012). The Department of Defense (DoD) has embraced the idea of fostering resilience to maintain a healthy fighting force during wartime (Reivich, Seligman, & McBride, 2011; Meredith et al., 2011). Since 2009, the concept of resilience has become increasingly important to U.S. military training. At that time, testing and training were adopted to detect and promote resiliency in the troops (Casey, 2011). Therefore, exploring the soldier-student's learning experiences in this study using this same resilience lens is consistent with current U.S. military training models.

One aspect of resilience specific to the military environment is unit cohesion. Meredith et al. (2011) identify unit cohesion as a resilience factor, and define it as "team ability to perform combined actions; bonding together of members to sustain commitment to each other and the mission" (p. 22). However, Britt & Oliver state that there is no direct research linking unit cohesion to resilience (2013). Regardless of this

discussion in the literature, developers of the Deployment Risk and Resilience Inventory-2 (DRRI-2), a survey tool currently used by the military to measure level of resilience, also identify unit cohesion as a protective factor (Vogt et al., 2012). It will therefore be useful to explore unit cohesion and its impact on the soldier-student's ability to academically persist, given that unit cohesion is a potential source of role conflict for the soldier-student in theater.

Distance Education

A review of the theory supporting distance education reveals a conceptually fragmented framework (McIsaac & Gunawardena, 1996). "As distance education struggles to identify appropriate theoretical frameworks, implementation issues also become important. These issues involve the learner, the instructor, and the technology" (McIsaac & Gunawardena, 1996, p. 406). Learning technology continues to evolve, and as this process continues, researchers and practitioners work toward agreement on common definitions (Moore, Dickson-Deane, & Galyen, 2011).

One way to depict the progression of distance education is to compare these definitions. In 1973, Moore defined distance teaching as a family of instructional methods in which the teaching behaviors are executed apart from the learning behaviors so that the learner must be facilitated by print, electronic, mechanical or other devices. More recent efforts to define distance education include Garrison and Shale's 1987 description, one that offers a minimum set of criteria and allows more flexibility (Jeffries, 2013). Garrison and Shale state that distance education implies that the majority of communication between the teacher and student occurs without face-to-face contact. Technology is used to mediate the necessary two-way communication required to

facilitate the educational process. Barker and his colleagues argued for a broadening of the definition in light of new telecommunications technologies (Keegan, 2001). They state that the teacher-learning experience for both the instructor and the student occurs simultaneously and note that technology provides the opportunity for live teacher-student exchanges in real time. This permits immediate response to student inquiries and comments, similar to a traditional classroom setting (Barker et al, 1989).

In 1993, Moore broadly defined distance education as the universe of teacher-learner relationships separated by space and/or time. Moore and Anderson (2003) described the process as all forms of education in which all or most of the teaching is conducted in a different space than the learning, with the effect that all or most of the communication between teachers and learners is through communication technology. By 2006, Larreamendy-Joerns and Leinhardt defined distance education as a process requiring a networked computer as the primary means of communication.

The similarities found in the definitions of these concepts are that some form of instruction occurs between two parties, a learner and an instructor, that the learning is held at different times and/or places, and that varying forms of instructional materials are used (Moore, Dickson-Deane, & Galyen, 2011).

History

Distance education has existed in one form or another for hundreds of years (Howell, Williams & Lindsay, 2003; McIsaac & Gunawardena, 1996). The history of distance education can be traced back to the early 1700s in the form of correspondence schools. Technology-based distance education began when audiovisual devices were introduced into the schools in the early 1900s. By 1920, instructional media, slides and

motion pictures, were introduced into many extension programs. In 1932, the State University of Iowa began experimenting with transmitting instructional courses. However, the use of television for the purpose of education grew slowly and in fact did not realize what many thought was its full potential. (Jeffries, 2013).

Distance education has evolved through several eras of educational, social, and psychological development. The first generation, the correspondence model of distance education used print, postal service, and correspondence technology and was characterized by flexibility of time, place and pace. A second generation, the multimedia model, was defined by mass media (audiotape, videotape, interactive video disks, television, radio, film production) and was also characterized by time, place and pace flexibility. The third generation, the telelearning model, introduced interactive technologies, including audio-teleconferencing and video conferencing. This model was characterized by non-flexible time, place and pace and was relatively expensive with ongoing costs. The fourth generation, the flexible learning model, used interactive multimedia, internet access and computer-mediated communication and was once again characterized by flexible time, place and pace. The fifth generation, the intelligent flexible learning model, uses internet-based access, mediated communication using automated response systems, and a campus portal access to institutional resources. This model is also characterized by the flexibility of time, place and pace. (Anderson & Dron, 2011; Seaberry, 2008; Smith, 2005).

Thus, course offerings and entire degree programs can now transcend geographical and geopolitical boundaries, distributed across localities, nations, and continents, making distance education a global enterprise (Lagier, 2003; Stewart, 2004).

"Online enrollments have continued to grow at rates far in excess of the total higher education student population, with the most recent data demonstrating no signs of slowing" (The Sloan Consortium, 2009). In spite of this rapid growth, the distance learning industry is still in its infancy stage of development with attrition rates that are 10-20% higher than face-to-face courses (Angelino, Williams, & Natvig, 2007).

Growth in online learning has contributed to a major shift in education and training from an instructor-centered to a learner-centered focus (Dillon & Greene, 2003; Garrison, 2003; Gunawardena & McIsaac, 1996). In fact, Merrill (2003) noted that using a traditional teacher-centered course design for a distance learning course is not adult-centered instruction. Zirkle (2001) argues that, due to this rapid growth, institutions have implemented DL programs without considering all of the necessary factors and support structures needed for student success. Jeffries, (2013) summarizes the history of distance education and its implications in the following manner:

> The history of distance education shows a field that appears to be in a constant state of evolution that is supported by theory, but in need of research which can fill many unanswered questions. The historical view of distance education shows a stream of new ideas and technologies balanced against a steady resistance to change, and it often places technology in the light of promising more than it has delivered. History shows nontraditional education trying to blend with traditional education while striving to meet the challenge of constantly changing learning theories and evolving technologies. Retrieved from http://www.computerschool.net/edu/DL_history_mJeffries.html

Distance education is faced with a wide range of practical constraints - temporal, geographical, technological, financial and organizational (Schlager, 2004). "Efforts by researchers and creative practitioners to design and implement innovative pedagogical and social strategies have been hampered by DL systems that are not flexible enough to adapt to the subtleties of diverse learning styles and innovative pedagogies" (Schlager,

2004, p. 92). Results from this exploratory study may provide information that supports adaptations in DL structure and implementation.

Teaching

Beaudoin (2006) states that online teaching is even more effective than the traditional classroom and should serve as an "exemplar of how faculty should teach and how students should learn" (p. 17). However, faculty tend to initially try to use conventional classroom methods to teach at a distance, only to become frustrated when these efforts are unsuccessful (Dasher-Alston & Patton, 1998). Although there is growing support among faculty members for DL, instructors must anticipate a sense of isolation related to separation from students (Howell, Williams & Lindsay, 2003). Online programs have the potential to draw students from all around the world, making it difficult to schedule synchronous student discussion. Several teaching strategies requiring Instructor flexibility have been implemented to manage this problem. For example, an instructor might schedule more than one session and allow the student to join the discussion of their choice (Polin, 2004).

Thach and Murphy (1995) identified roles, outputs, and competencies of DL professionals and ranked their top ten competencies in the following order: interpersonal communication, planning, collaboration/teamwork, English proficiency, writing, organizational, feedback, knowledge of the DL field, basic technology knowledge, and technology-access knowledge. Dooley and Lindner (2002) then identified behavioral anchors linked to these competencies, such as the importance of timely feedback and the use of active learning strategies. These Instructor behaviors were therefore included as variables in this study.

Learning

Kearsley (2000) and Simonson et al. (2003) state that successful online learners possess more technology knowledge than their less-successful classmates. The mechanism of learning is language, specifically dialogue, whether it is slow-paced asynchronous conversation in threaded discussion or fast-paced interaction of a virtual classroom (Polin, 2004). One finding that resulted from a meta-analysis conducted by Sitzmann, Brown, Casper, Ely, and Zimmerman (2008) is that student reactions are strongly related to both instructor style and the opportunity to interact with instructors and peers.

Students learning at a distance are required to take greater responsibility for managing their own learning (Kearsley, 2000; King, Young, Drivere-Richmond, & Schrader, 2009). "Instruction is becoming more learner-centered, non-linear, and self-directed" (Howell, Williams & Lindsay, 2003, p. 7). Numerous researchers have suggested that online students require well-developed, self-regulated learning skills to guide their cognition and behavior (Bandura, 1997; Dillon & Greene, 2003; Hartley & Bendixen, 2001; Hill & Hannafin, 1997). However, learning occurs in context and self-regulated learners can control their learning experiences by establishing a productive work environment, using resources effectively, organizing and rehearsing information to be learned, and holding positive motivational beliefs about their capabilities and the value of learning. (Schunk & Zimmerman, 1998). Therefore, questions exploring the participant's learning environment and use of resources were included in this research study.

Course Design

Course design is cited by online learners as a significant reason for dropout (Frankola, 2001). "Instruction is a matter of creating the proper environment and materials that can be passed on to the learners to help respond appropriately" (Grabinger, 2004, p. 57). In a traditional instructional design, course content is prepared for learners to process and includes activities that learners will practice to demonstrate learning. By comparison, a sociocultural instructional design views learners as collaborators in the learning process. Learners are guided rather than controlled (Grabinger, 2004). This learning strategy in an online environment includes conversations, discourse, talking, dialogue, exchange, discussion, communication, and critique (Grabinger, 2004, p. 57).

Adult learners bring varying backgrounds and multiple levels of knowledge and skill to their higher education learning experience (Lorenzo, 2007). Western Governors University (WGU) is an example of structuring a college experience taking adult learners into account. WGU has been active in the DoD "Troops to Teachers" program, offering scholarships to help active-duty military and veterans become teachers (Lorenzo, 2007) and for this reason is a good model to review as background for this study. Students earn their degree by passing competency-based assessments, as compared to traditional higher education requirements where students complete a specific number of credit hours to earn their degree (Lorenzo, 2007). "Students can accelerate their degree completion depending on the competencies they may already have while juggling the demands of their personal and work lives" (Lorenzo, 2007, p. 3). This structure provides physically and financially accessible higher education to an under-served population (Lorenzo, 2007). WGU "treats all students as full-time students and charges tuition at a flat rate

regardless of the number of competency units attempted or completed by the student" (Lorenzo, 2007, p. 1). WGU is moving toward self-directed learning modules that are bundled together and independent learning resources as compared to instructor-led online courses from other higher education institutions (Lorenzo, 2007). This approach may increase the military learner's ability to persist to course completion and is therefore explored in this study.

Military Distance Learning

There are several reasons for the increase in demand for online education by those who serve in the military, including a higher percentage of military personnel stationed overseas, the increased benefits of the Post-9/11 GI Bill, and the increase in demand for a college degree (Brown & Gross, 2011). "Military students encompass a unique student population due to the inherent complexities of their career" (Torres, Machuca, Morris, & Whitley, 2011, p. 2258). The Army's program, called Distributed Learning, is intended to speed the pace of learning and allow training to take place where soldiers need it. The Army has a vision for a greatly increased role for DL over time. Educational requirements are expanding, especially the ability to provide learning "anytime, anyplace" (Shanley, Crowley, Lewis, Straus, Leuschner, & Coombs, 2012). This goal can be achieved through the use of online technologies (Wisher & Freeman, 2006). "In addition to regular Army initiatives, the Army National Guard developed a demonstration system under congressional direction called the Distributive Training Technology Project. This resulted in a DL network that includes all 50 states and 4 territories" (Wisher, Sabol & Moses, 2002, p. 7).

Consistent with the history of DL in general, the U.S. military began using print-based correspondence courses in the early 1940s. By the early 1950s, the U.S. military began experimenting with the use of television as a medium for training. In the early 1970s, the Air Force Institute of Technology began using dial-up telephones to provide instruction to remote locations. This expanded later in the 1970s to include electronic blackboards. The use of personal computers expanded access to DL opportunities (Wisher, Sabol, & Moses, 2002). In 1997, the U.S. DoD launched the Advanced Distributed Learning (ADL) initiative. The goal was to "ensure access to high quality education and training, tailored individual needs, developed and delivered cost-effectively, available anytime and anywhere" (Wisher & Freeman, 2006, p. 92).

"The learning environment has shifted away from the institutional Army and created the demand for continuous leader development and education. . . Soldiers operate in a much more joint and interagency environment" (Woodie, 2005, p. 1). One goal of the U.S. Army Training and Doctrine Command (TRADOC) is to increase access to training. The Army considers DL one means to achieve this goal (Wisher, Sabol, & Moses, 2002). To address this access goal, the Army launched Army University Online, which allows soldiers to participate in a DL course no matter where they are deployed in the world. The National Guard Bureau Distributive Training Technology Project also integrates technology with training. "This is a state-of-the-art communications and learning-delivery system designed to support the National Guard's traditional and expanding missions" (Wisher & Freeman, 2006, p. 93).

The U.S. Army expanded the Army Continuing Education System (ACES) in 2004 to include the most extensive DL portal initiated in the world (Lorenzetti, 2004).

Then known as eArmyU, this portal offered unparalleled soldier support, such as 24-hour assistance, a free laptop program, and Education Services Officers (ESO) at active duty Army bases (Orvis, McDonald, Raymond, & Wu, 2005). Now known as GoArmyEd, eArmyU has evolved and expanded to include a centralized website for program and school enrollment, tuition management, and worldwide counselor support (Department of the Army, 2008).

Several higher education programs that are offered on-line have begun to meet the unique needs of those engaged in DLDCD in student-centered ways. For example, Colorado Technical University (CTU) Instructors delay due dates for soldier-students who are called away for a few days and therefore do not have Internet access. CTU also provides downloadable versions of live lectures for students who cannot attend in real time and e-books in order to avoid adding the weight of textbooks to the 50 pounds of life supplies already being carried by soldier-students. Excelsior College designed CD-ROM-based courses specifically for deployed service members who do not have Internet connections. Strayer University "freezes" courses for military students who are deployed or transferred. Students resume the course when they are able, without having to begin the course again. Strayer values access to higher education, including parts of the world where bandwidth is limited. Because streaming video and virtual simulations consume a large amount of bandwidth, these technologies are used minimally at Strayer. In addition, some online universities provide a staff person at Military Education Centers so that soldier-students can have easy access to support. Others offer round-the-clock phone support and web chat functionality (geteducated.com, 2016). The influence of university support located at MECs will also be explored in this this study.

Military DL students

Military DL students who were interviewed for *Military Advanced Education* reported finding study difficult because of time and space considerations. While one student reported the need to drop out of two courses, others reported wishing they had started the process sooner as "the military is now giving advancement points for degrees and it can help you get into an officer's program" (McGonigle, 2008). On the other hand, a participant in a qualitative study focused on coping skills in the U.S. Army stated, "you never have time to take a break and go to school" (Dolan & Ender, 2008).

The DoD estimates that as many as 25 percent of reserve component service members are either full- or part-time college students. Many colleges and universities allow these students to take courses for their degrees while deployed (Padilla & Shapiro, 2003). Understanding these students' experiences in DL has received only limited attention at the program level (Straus, Shanley, Yeung, Rothenberg, Steiner, & Leuschner, 2011), supporting the value of this current study of citizen soldier students deployed to a combat area.

In general, students who have engaged in military combat are uncomfortable if the Instructor singles them out in the classroom because of their military service (DiRamio, Ackerman, & Garza-Mitchell, 2008). The soldier-student has the greatest chance to succeed when treated as normally as possible (Simmons, Fisher, & Simmons, 2015). Also, the Instructor's lack of understanding of military culture may be experienced as insensitivity by the soldier-student. This dynamic has the potential to negatively impact course completion (Glover, Graf, Miller, & Freeman, 2010). Adult learners incorporate their lived experiences into their education. Therefore, Instructors of

soldier-students might provide self-reflection exercises and opportunities to make meaning of their military service as it relates to the course content (Hamrick, Ruman, & Associates, 2013).

Soldier-students expect a presence of authority in the classroom. Enlisted military expect clear decisions. A lack of structure in the classroom environment may be experienced as abnormal and could be confusing (Simmons, Fisher, & Simmons, 2015). Higher ranking enlisted students expect clear instructions and schedules and might challenge unclear guidelines. Officers expect that Instructors know their subject matter well and that they are very clear about their expectations. If the Instructor appears incompetent or if directions are ambiguous, the soldier-student may become frustrated. This could result in a lack of effort, reducing the probability of course completion. Therefore, the Instructor can help support the soldier-student toward course completion by articulating clear expectations and consistently maintaining the course schedule throughout the semester.

Simmons, Fisher, & Simmons (2015) hypothesize that, due to military training and combat experiences, soldier-students are grounded in dualistic thinking. As conceptualized by William Perry's (1999) Theory of Intellectual and Ethical Development, this is a basic level of cognitive development, However, for soldier-students, dualistic thinking is not a lack of capability but rather a critical necessity in a combat environment, where structure is absolute and there is a right and wrong answer for everything (Zinger & Cohen, 2010). Higher education, on the other hand, values independence of thought. This could be a substantial shift in thinking for soldier-students (Katz, 1990) that may interfere with learning. Finally, although not a focus in this study,

it is very important to note that prolonged posttraumatic stress disorder can negatively impact cognition, including causing memory loss and memory distortion (Bremner, 2000), affecting learning.

Resilience

Over the last several years, the concept of resilience has become a focus of behavioral research (Charney, 2004; MacDermid et al., 2008) and has also become increasingly important to U.S. military training. "Resilience research, which is sensitive to ecologic variables, has incorporated how individuals gain access to available resources in their environment" (Carrey & Ungar, 2007, p. 505). Resilience was initially conceptualized as a stable person trait. However, later research made it clear that environmental factors both support and constrain resilience (MacDermid, et al., 2008; Young, 2012).

Although researchers have attempted to develop a precise definition of resilience, a universally accepted definition has not been adopted (Britt, Sinclair & McFadden, 2013; Meredith, et al., 2011). Carver (1998) defined resilience as the ability to recover from stress, to adapt to stressful circumstances, and to function above the norm in spite of stress. In 2002, Coutu wrote that resilience, the maintenance of daily functioning in spite of adversity, can be taught and learned. The Technical Cooperation Program (TTCP) (2008), which provides a military context, defines resilience as the sum total of psychological processes that permit individuals to maintain or return to previous levels of well-being and functioning in response to adversity. Greene (2012) states that resilience is the process that leads to continued wellness or even growth following a period of stress. Fikretoglu and McCreary (2012) define resilience as the demonstration of positive

adaptation in the face of significant adversity. The key components of this definition, significant adversity and positive adaptation, have been used by researchers studying resilience among military personnel and their families (Britt, Sinclair & McFadden, 2013).

Resilient Individuals

The literature often references individual assets as indicators of psychological resilience (Johnson et al., 2008). Resilient individuals are described as having varied interests and a high aspiration level, assertive, socially skilled, and cheerful. They are not self-defeating, emotionally bland, nor lacking personal meaning in their lives (Letzring, Block, & Funder, 2005). Coutu (2002) believes that resilient people possess three characteristics: acceptance of reality; a deep belief that life has meaning; and the ability to improvise.

Multiple research studies suggest that resilience is a product of a number of developmental, cognitive, and affective psychological processes (Bonanno, 2004; Connor & Davidson, 2003, Luthans, Vogelgesang & Lester, 2006; Masten, 2001). In addition, evidence suggests that individuals can learn to be resilient (Connor & Davidson, 2003; Luthans, 2002; Luthans, Norman & Hughes, 2006, Luthar & Cicchetti, 2000). A number of internal and external factors have been identified related to resilience (Lester, Harms, Herian, Krasikova, & Beal, 2011). These include the internal factors of hardiness (Maddi, 2005), optimism (Carver & Scheier, 2002), self-efficacy (Rutter, 1985), coping strategies (Mikulincer & Solomon, 1989), hope (Snyder et al., 1991), the tendency to search for benefits through adversity (Affleck & Tennen, 1996), and positive emotionality (Fredrickson, 2001). External factors include community support,

friendships, parental influence, opportunity, and education (Masten, 2001; Masten & Coatsworth, 1998; Rutter, 1985; Werner, 1995).

There is a lack of consensus within the military resilience literature "on whether resilience is a single trait, a collection of traits, or an outcome of traits" (Sinclair, Waitsman, Oliver, & Deese, 2013, p. 34). However, resilience goes beyond individual traits and includes a process that involves interaction between the individual, past experiences and current life context (Lepore and Revenson, 2006; Luthar & Cicchetti, 2000). Jackson and Watkin (2004) understand resilience as a focus on the individual's responses to hard times that determine success. These include an accurate analysis of the stressful event, the ability to be flexible, and the drive to take on new opportunities and challenges. Mancini and Bonanno (2009) explained that "resilience can be achieved through a variety of means. There are multiple risk and protective factors . . . and it is the totality of these factors . . . that determines the likelihood of a resilient outcome" (pp. 1819-1820). The individual's assets and resources, their life and environment facilitate the capacity for adaptation and 'bouncing back' in the face of adversity (Windle, 2010).

Military Context

"High-risk occupations such as the military have an explicit emphasis on resilience . . . Military leaders also establish a climate in which individual resilience in arduous circumstances is a norm" (Adler, 2013, p. 224-225). Given the magnitude of the stressors faced by military personnel, one might expect to see a large body of literature on resilience in military samples. However, this is not the case. Sinclair and Britt's (2013) review of the literature found only 136 studies on resilience in the military, a very small percentage of the existing resilience research.

In 2007, in response to a request for assistance from the Department of Defense (DoD), the American Psychological Association (APA) recommended that help-seeking behavior be framed as "building resilience" rather than "seeking treatment." Because the military's mission readiness depends largely on the resilience of service members (Bowles & Bates, 2010; Britt, Sinclair & McFadden, 2013), the DoD has embraced this idea of fostering resilience to maintain a healthy fighting force (Meredith et al., 2011). "More than education, more than experience, more than training, a person's level of resilience determines who succeeds and who fails" (Becker, as quoted by Coutu, 2002, p. 47).

Although there are no studies that specifically examine the risk and resilience factors of soldier-students, there is some research that examines these variables in military populations in general (Young, 2012). For example, some researchers have explored the potential for positive consequences of deployment experiences, including an enhanced appreciation for life, greater attainment of life goals, and closer interpersonal relationships (Vogt, Smith, King & King, 2012). Most recently, various positive characteristics, termed psychological capital, have been shown to be related to resilience to traumatic exposure among soldiers deployed in combat (Schaubroeck, Riolli, Peng, & Spain, 2011). However, positive adaptation to adversity depends on the context (Carrey & Ungar, 2007). Service members who deploy for extended periods on a repeated basis face risks associated with combat that may challenge coping resources (Meredith et al., 2011).

Situations are defined as "any conditions, contexts, or resources that can be provided, modified, or controlled by military organizations in order to promote

resilience" (Jex, Kain, & Park, 2013, p. 69). Therefore, a training program can be a resource to enhance resilience. Military culture can also be a situational factor "in that military leaders can attempt to develop or change aspects of the organizational culture in order to enhance resilience" (Jex, Kain, & Park, 2013, p. 69). For example, external resiliency factors such as leadership support and contact with home were found to provide some degree of protection against PTSD for military personnel (Ferrier-Auerbach, Eres, Polusny, Rath, & Sponheim, 2010).

Resilience Training

Deployments over the past ten years have led to the development of resiliency and preventive training programs designed to help military personnel manage reactions associated with deployment, increase coping skills, and build psychological and emotional resilience (Warner, et al., 2011). Resilience training targets stigma reduction in all education, builds confidence that most reactions are normal, identifies adaptive reactions to ongoing threats, and develops a psychoeducation that matches the environment (Warner et al., 2011).

The original resilience-strengthening program was called Battlemind Training (BMT). Initially a postdeployment training, it rapidly grew to build resilience in soldiers throughout all phases of the deployment cycle (Huseman, 2008). The concept of Battlemind has been defined as "a soldier's inner strength to face adversity, fear, and hardship during combat with confidence and resolution" (Castro, Hoge, & Cox, 2006, p. 42-2). Although there is minimal data demonstrating the effectiveness of resiliency training, "initial research on the effectiveness of the resiliency-based Battlemind Training appears promising" (Warner et al., 2011, p. 43).

Battlemind has evolved and is now offered Army-wide under the umbrella program Comprehensive Soldier Fitness (CSF) (Greenberg & Jones, 2011; Pryce, Pryce & Shackelford, 2012). CSF helps soldiers develop resiliency in stressful situations and builds upon their inner strength (Warner et al., 2011). Lester, McBride and Cornum (2013) describe CSF in the following manner:

> It teaches them how to psychologically prepare for and address challenges and adversity. . . CSF is a holistic training program designed to bolster existing and develop nascent cognitive resources and communication and reasoning skills in order to help soldiers thrive in the face of challenges inherent in army life (p. 193-194).

"CSF training is sponsored, managed, and led by unit leadership in order to maximize emphasis on the importance of being psychologically and physically fit" (Lester, McBride, & Cornum, 2013, p. 195). "Direct and indirect resilience training can also be supplemented through organizational resources such as teams, leaders, and policies" (Adler, 2013, p. 225). Therefore unit leadership is another factor that was explored as a variable that influences the soldier-student's ability to persist toward course completion. Interventions intended to increase resilience to deployment- and return-related stress and attrition have shown positive results among military populations (Adler, Bliese, McGurk, Hoge, and Castro, 2009; Williams et al. 2004). As a result, this study explored if Battlemind Training and CSF influence the soldier-student's ability to complete a DL course while deployed.

Bowen and Martin (2011) developed a Resiliency Model of Role Performance to account for variation in the ability of service members to meet their military role responsibilities. This model focuses on both the individual's assets and the social context. A number of studies demonstrate the buffering roles of formal and informal

support networks on the successful role performance and adaptation of service members (Bowen & Martin, 1998; Flake, Davis, Johnson, & Middleton, 2009). Therefore, the soldier-student's individual assets, social context, perceived level of support and role responsibilities were explored in this study.

Persistence

Strictly pertaining to students, persistence is defined as continued involvement in coursework toward program completion (Wlodkowski, Mauldin, & Gahn, 2001; Berger & Lyon, 2005). A review of the literature regarding academic persistence begins with Alexander Astin (1977), who asserted decades ago that student satisfaction is highly correlated with course completion. Current research affirms Astin's conclusion that retention and satisfaction are linked (Schreiner, 2009). Tinto (1993) offers another explanation of how mitigating factors such as academic, social and pre-entry characteristics among students and the communities or populations they come from determine if the individual will persist. Tinto was also one of the first higher education researchers to identify the connection between student demographics and persistence. His Theory of College Student Departure (1993) states that student persistence is a function of student entry characteristics, commitment, and both social and academic integration. According to Tinto (2002), there are five conditions that support persistence for both traditional and adult learners: the expectation that the student will succeed, the provision of advice and information, academic, social and personal support, involvement with the institution, and an environment that fosters learning. Although Tinto did not specifically identify military learners as a unique demographic, his model provides a

framework to look at the specific demographics and attrition of soldier-students (Hayek, 2011).

Metz (2004), studied the slight progression in learner persistence over the same time period. While Tinto focused on the institution type, Metz focused on learner characteristics. Both experts agree that the future direction of research must look at particular learners within their respective educational settings. Thus, this study included exploration of the learner characteristic of resilience, perceived level of support, and learning environment for military distance learners who engaged in coursework while deployed to a combat area.

Bean and Metzner (1985) approached the persistence issue differently, moving toward a student-centered perspective. They found that for the nontraditional undergraduate student, environmental factors are more significant than academic variables. Finances, hours of employment, outside encouragement, and family responsibilities have a greater impact on adult learner departure decisions than academic variables. While environmental factors can compensate for a lack of academic support, they did not find the converse to be true; that is, that strong academic support cannot compensate for weak environmental support. Therefore, a student reporting low levels of both satisfaction and environmental support is at a risk of attrition. Bean and Metzner's finding on the effect between environment and academic achievement is meaningful for military learners who are studying during a period of deployment. If these results apply to all non-traditional populations, harsh military environmental factors would be detrimental to military learners' persistence (Hayak, 2011).

Other researchers have also studied the concept of persistence in higher education with a focus on DL. Berge, Muilenburg and Haneghan (2002) identified seven categories of barriers to success for distance learners: situational, epistemological, philosophical, psychological, pedagogical, technical, social, and cultural. Wlodkowski, Mauldin & Campbell (2002) found that the competing demands of school, family and work responsibilities affect the students' decision to persist. Rovai (2003) identified two pre-admittance and two post-admittance variables which contribute to online learner dropout. The pre-entry variables studied were student characteristics and skill levels. The after-admission variables studied were situation/external factors, such as work schedules, finances and supportive relationships, and internal factors, such as self-esteem, academic and social integration, advising and study habits. Rovai's model has similar components to Tinto's academic and social integration factors and Bean and Metzner's external contributors to dropout (2003). Holder (2007) reports that a feeling of camaraderie within the classroom significantly contributes to persistence. Those students who perceive family and friends as supportive of their education also persist at a higher level than those reporting less support (Ivankova & Stick, 2007; Park & Choi, 2009). Taking these previous research findings into account, this study included questions focused on study habits, the ability to engage in classmate teamwork, and level of support across all three domains – military, higher education, and family.

Hart's (2012) analysis of the literature specific to an online learning community found the following factors that are associated with student persistence: satisfaction with online learning, a sense of belonging to the learning community, motivation, peer and family support, time management skills, and increased communication with the

instructor. Berge and Huang (2004) state that the barriers for DL students are distinguishable from face-to-face learners, but found the existing models to study these barriers too complex and difficult to apply to this student population. They proposed a simpler model to look at the decision to persist and identified categories, personal, circumstantial and institutional, as groups of factors that impact persistence, as well as their relationship to one another. This perspective aligns best with the systems theory conceptual framework of this study.

William Spady (1970), a sociologist, laid the groundwork for the use of satisfaction as an indicator of success. Since 1970, several studies have examined various areas of satisfaction in an effort to uncover the link between satisfaction and persistence in online learning (Abel, 2005; Drennan, Kennedy, & Pikarski, 2005; Mandarnach, 2009; Seaberry, 2008). Institutional characteristics such as positive interactions with faculty, faculty accessibility and effective academic advising increase student satisfaction (Pascarella & Terenzini, 2005; Peterson, Wagner, & Lamb, 2001). Distance learning research has been organized into five pillars of quality: student satisfaction, faculty satisfaction, access, learning effectiveness, and institutional cost effectiveness (Sloan Consortium, 2009). Some researchers propose that online students and faculty will not be well satisfied if one or more pillars are greatly lacking in efficacy (Benke, Bishop, Thompson, Scarafiotti, & SchWeber, 2004). Benke et al. report that student satisfaction is linked to faculty satisfaction and that student satisfaction and faculty satisfaction are both linked to interaction (2004). Other studies on student satisfaction and distance education underscore the importance of effective communication and providing prompt feedback (Bolliger & Martindale, 2004; Kim &

Moore, 2005; Ortiz-Rodriguez, Telg, Irani, Roberts, & Rhoades, 2005; Thurmond, Wambach, Connors, & Frey, 2002; Young, 2006). Therefore, exploring the factors of effectiveness of communication and promptness of feedback were included in this study.

Dupin-Bryant (2004) and Levy (2009) found that the less experience that students have with education, the more likely they are to withdraw. Non-academic issues may also negatively impact persistence. These factors and events include work and family responsibilities, job changes or loss, bereavement, illness, and financial difficulties (Aragon & Johnson, 2008; Bunn, 2004; Ivankova & Stick, 2007; Park & Choi, 2009). "Pressures from these issues may fuel the decision to withdraw from an online course, but can be mitigated by the presence of strong support and social connections within the course" (Hart, 2012, p. 38). Therefore, study participants were questioned about Instructor accessibility and flexibility as well as their level of satisfaction with DLDCD, level of perceived support, and cohesion within the military unit, DL classroom, military unit, and family.

Military Learner Persistence

Issues of retention and persistence for the military learner are different from the non-military student body, particularly for those from educationally disadvantaged groups, including first-generation college students, low income, and racial-ethnic minorities. Many key DL courses show low graduation rates in Army databases, especially when compared to rates for resident courses (Shanley et al., 2012). In fact, the military population is at the highest risk of attrition based on multiple categories; most are first-generation, non-traditional college students (adult learners), who are working to attain a degree while engaged in active military service (Ishitani, 2006; Parker, 2003).

Since 9/11, degree attainment among military learners has become more difficult to accomplish due to frequent deployments (Belasco, 2011).

Reynolds (2002) studied factors that influence Air Force distance learners' motivation to persist. He learned that the positive influences on DL completion rates include environmental support, the convenience of "any time" learning, the ability to fit into a schedule, initial confidence (self-efficacy), electronic feedback messages, high interactivity with the course, previous higher education course completion, and if the course was related to a job requirement. Negative influences were identified as slow system response times, network outages, lengthy modules and lower self-efficacy. Reynolds also analyzed motivational factors that influence military DL course completion. He found that military students were more likely to persist when they encountered fewer technical problems, fewer distractions, and more environmental support from supervisors and instructors. He also learned that lengthy course modules and low self-efficacy decreased the motivational tendency to persist. Reynolds identifies network problems, noise, interruptions from peers, off-task requests from others, email, and an array of similar factors due to "anywhere" learning environments. Factors such as these pull distance learners away from completing the course, while offsetting factors like environmental support, push them toward completion (Catalano, 1985). Environmental support includes the proper resources to conduct DL, the time to devote attention and energy towards the course without disruptions, and the opportunity to take the course for career advancement (Reynolds, 2002).

In a follow up study to Reynolds' research, Mathews (2004), found three significant course design factors influencing course completion for military DL students:

the ability to exercise greater control over the DL environment, including the freedom to easily move back and forth through course materials; an easily accessible help system relevant to the student's learning tasks, and breaking the course into manageable pieces (chunking) that allows the student to complete a module before other demands interfered with DL tasks. Reynolds (2002) hypothesized that the longer the DL course, the greater the chance that the student could become distracted and focus attention elsewhere. Mathews' research (2004) supports this; he found that module length had the strongest correlation to course completion rates. Therefore the pace of the DL course will be another factor explored in this study.

The Soldier Student

Data collected via the 2010 National Survey of Veterans (NSV) indicates that almost all enlisted members (94%) are high school graduates and 87 percent of U.S. military officers have earned a college degree. The average age of the total active duty force is 28 years old. The average age of the Marine Corps is 25 years (Westat, 2010).

Active Duty Military

The U.S. military became a volunteer force in 1973 (Rosman-Stollman, 2008). Woodruff, Kelty and Segal (2006) studied the propensity to serve and motivation to enlist among American combat soldiers. They found that a significant number of enlisted men and women did not, as high school students, expect or desire to serve in the military (Woodruff, Kelty & Segal, 2006), but were recruited to provide the 200,000 to 250,000 new personnel needed by the U.S. military each year to maintain an active-duty, enlisted military force of about 1.2 million (Eighmey, 2006; Laurence, 2006).

One characteristic of enlisted military personnel is level of patriotism. Segal and his colleagues argue that the importance of patriotic motivation to serve in the volunteer military has been underestimated (Segal et al., 2001). "People who are motivated to join the military to gain educational benefits are not likely also to be motivated to make military service their profession" (Woodruff, Kelty & Segal, 2006, p. 360). Most active duty service members who reported using VA education benefits (68.4%) indicated that they used them to take coursework leading to a bachelor or graduate degree (Westat, 2010).

Citizen Soldiers

Reservists play an important role in the U.S. military. This role has widened with the decades-long drawdown in the active force (Westat, 2010; Wisher & Freeman, 2006). Approximately 525,000 National Guard and Reservists have been activated to serve in OEF and OIF endeavors (Westat, 2010). Since 9/11, half of the Army's reservists have been mobilized, and between 12,000 and 15,000 have been mobilized twice (Kennedy, 2004). The National Defense Authorization Act of 2005 formally acknowledged the reserve components' evolution from a strategic to an operational function, that is, reservists are now officially tasked with contributing to day-to-day military operations (Westat, 2010).

The importance of considering reservists as a distinct group in comparison to active duty personnel has repeatedly been identified in the literature (Lomsky-Feder, Gazit, & Ben-Ari, 2008; Walker, 1992). Reservists are military personnel who supplement active forces. Wisher and Freeman (2006) describe the organization of Reserve Forces as follows:

> The reserve component of the United States Armed Forces is organized into two groups, each with two major categories. The first group is comprised of the reserve counterparts of each service (U.S. Army Reserve, U.S. Marine Corps Reserve, etc.). The second group is the National Guard, which is normally under the control of the governor of each state or territory until federalized or 'called up' to active service. The two major categories are Active Reserve and Individual Ready Reserve (IRR). The Active Reserve is made up of service members assigned to positions in specific units. . . The IRR is primarily composed of service members who have recently completed active duty service but have not yet fulfilled their service commitment (p. 82-83).

The Army National Guard includes 3,200 units located in 2,700 communities across the country. Similarly, there are some 1,700 Army Reserve units around the nation (Wisher, Sabol, & Moses, 2002). Prior to 9/11, infrequent call-ups developed and sustained the perception that activation of reservists was unlikely. Reservists attended monthly weekend drill training and two weeks of annual intensive training (Griffith, 2010). However, this historically part-time nature of reserve military service has now been replaced by the realities of lengthy deployments (Griffith, 2009). More than 84,000 Army Reserve and 60,000 Army National Guard soldiers were active during Operation Desert Storm. Since then, over 360,000 reservists have been called to support military missions for homeland security and operations in Iraq and Afghanistan (Griffith, 2010).

After Vietnam, the cornerstone of the military became the all-volunteer force and the relatively low demand on reservists changed. Army leadership integrated active and reserve forces with National Guard units to meet national security needs. "This solution did two things: it allowed greater combat strength at fixed cost (reserve component units are less expensive in peace time) and it provided a structure that promised to take hometown USA to war with the military" (Defense Science Board Task Force, 2007). Therefore, in times of security crisis, reservists are required to set aside all civilian and

personal commitments to fulfill military service responsibilities (Ben-Dor et al., 2008). The plan for involuntary mobilization of reserve and National Guard units is the ratio of one year mobilized to five years demobilized. However, recent global demands required a number of selected units to be remobilized sooner than this standard (Defense Science Board Task Force, 2007). This demanding plan requires a greater commitment from reservists than in the past (Griffith, 2009). Reservists generally live like civilians, fulfilling daily tasks for their civilian jobs and their families, but they must maintain a state of readiness in the event that they are activated for a mission. They are both within the military and outside of it (Lang, Bliese, Adler & Holzl, 2010; Lomsky-Feder, Gaxit, & Ben-Ari, 2008).

There are some differences on the impact of deployment for Reservists from their active duty counterparts. The disruption of civilian life may be significantly greater because of profound changes in employment and the routine of family and civilian life. Depending on reserve category, reservists may experience group cohesion differently. While members of National Guard units may have developed relatively strong unit cohesion, members of the Individual Ready Reserve (IRR) may not have had the time to establish cohesive working relationships with other members of their unit (Friedman, 2006; Wisher & Freeman, 2006). In comparison to their active duty counterparts, Reservists may experience more difficulty coping with the psychological effects of deployment. In addition to their quick adjustment to military life, their level of pre-deployment training does not provide them with the same day-to-day experiences as those in active duty because bringing together soldiers from diverse locations for training presents a logistical and financial challenge (Wisher, Sabol, & Moses, 2002). Therefore,

it may be too short a period for effective adaptation to a deployment (Wisher and Freeman, 2006).

Military Education

There are education requirements for entering the U.S. military service. In addition, many service members have a desire to continue their education by pursuing post-secondary schooling or graduate school (Tanielian & Jaycox, 2008). Men and women who pursue military service in the United States receive cutting-edge education and training (Bowen & Martin, 2011). Military training entails intense theoretical and practical instruction in various fields, not unlike a university experience (Pryce, Pryce, & Shackelford, 2012). Achieving these educational goals has significant effects on several outcomes, including occupational achievement, financial security and health (Kessler et al., 1995). Professional preparation of soldiers in military schools focuses on duties related to grade and rank (Woodie, 2005). Military training is concerned with increasing the capacity to perform military tasks (Dept. of the Army, 1990), learning outcomes are established by doctrine and the criteria for proficiency are fixed (Bonk & Wisher, 2000).

Enlisted soldiers can move up in rank through the Noncommissioned Officer Education System (NCOES), a series of courses that train soldiers how to lead at varying levels. The courses include a warrior leader course (WLC), a basic noncommissioned officer course (BNCOC), an advanced noncommissioned officer course (ANCOC), first sergeant academy, army sergeants major academy and command sergeants major academy (GoArmy, 2012). "The Army designs curriculum carefully to meet the needs of the students and base it on doctrine that changes slowly. As a result, school content changes much slower than the operational environment" (Woodie, 2005, p. 2).

"The demands on the personnel system have left little time for professional education. The Army has eliminated and combined courses" (Woodie, 2005, p. 2). In spite of this, the DoD spends more than $17 billion annually on military schools for almost three million personnel and has committed to transforming the majority of its classroom training to computer-supported DL (U.S. General Accounting Office, 2003). This financial commitment to military DL reinforces the importance of ongoing research in this area, including the focus of this study.

For reasons of cost and accessibility, Army training is becoming more "learner-centric, with soldiers assuming increased responsibility for the acquisition of knowledge and the development of skills" (Bonk & Wisher, 2000; TRADOC, 1999). This is consistent with Dillon & Green's (2003) and Garrison's (2003) findings that DL, in general, has evolved to a learner-centered structure. In response to the Army shift in training delivery, the DoD established the Advanced Distributed Learning (ADL) initiative. The ADL seeks to tie together DL resources to support learner-centric education on an ongoing basis. "The ADL initiative also marks a shift from the current classroom and distance teaching philosophy to a model of anytime, anywhere learning" (Bonk & Wisher, 2000, p. 2). Army Education Services Officers (ESO) and counselors are available to soldier-students at major bases overseas, even in combat zones. In addition, every state National Guard headquarters operates an education office to support National Guard soldier-students (Johnson, 2009).

Post-9/11 Veterans Education Assistance Act

The Post-9/11 Veterans Educational Assistance Act of 2008 has the potential of applying to more than 2 million eligible veterans, and covers the costs of any public

institution's college program. It is one of the most generous veteran educational benefit packages offered since World War II. Over 950,000 veterans have used the Post-9/11 GI Bill to enroll in college courses and training programs at over 6,000 institutions since it became law on August 1, 2009 (Molina, Esqueda, & DeBraber, 2015; Sander, 2013). To be eligible, the veteran must have been on active duty for at least ninety days since September 11, 2001. These benefits expire fifteen years after the last ninety days of continuous service, however the benefits can be transferred to family members (Pryce, Pryce, & Shackelford, 2012; U.S. Department of Veterans Affairs, 2013).

People who are motivated to join the military to gain educational benefits are not likely also to be motivated to make military service their profession. Educational benefits motivate people to enlist, but also to leave the service once the benefits have been earned. Thus, while the educational incentives of the GI Bill help bring soldiers into the Army, they also contribute to the difficulty of retaining soldiers after their initial enlistment term of service (Woodruff, Kelty & Segal, 2006, p. 360).

Military culture

The experience of serving in the military transforms the soldier-student's civilian identity and values to reflect military identity and values (Yamada, Atuel, & Weiss, 2013). Soldier-students are influenced by a unique military culture that is distinct from a typical civilian learning environment. Soeters, Poponete, & Page (2006) describe military culture as more collectivistic, more hierarchy-oriented, and less salary-driven than the average civilian working culture. Soldiers are trained "to obey orders and to tolerate no mistakes or defects" (p. 24). Tanielian and Jaycox (2008) describe military culture in the following manner:

> Throughout their military careers, service members develop a set of values and attitudes that are essential for maintaining force readiness and strength. Every war fighter has a culture of toughness, independence, not needing help, not being weak, and expecting to be able to master any and every stress without problems. There is a huge barrier to acknowledge, even to themselves, that there is a problem (stakeholder interview). Soldiers, sailors, airmen, and marines are encouraged to develop inner strength and self-reliance. They take pride in their toughness and ability to "shake off" ailments or injuries (p. 276).

The American military subculture rests on four distinct pillars that set it apart from mainstream culture. First, strict discipline forms the basis of the military organization. Second, the military relies on loyalty and self-sacrifice to maintain order in battle. Third, rituals and ceremonies shared among warriors create a common identity. Fourth, warriors are connected to one another by the military's emphasis on group cohesion (Kudler, 2010). In comparison, Siebold (2006) believes that the military values in the combat zone are really not that different from those experienced in his office in the States. He identifies five primary values: "job competence, honesty, helpfulness, fairness, and respect" (p. 7). These values are derived from military history, culture and function, and have as their foundation the service members' common experiences of being in combat or training for combat and are so important because small work groups cannot function effectively without them (Siebold, 2006).

Another important aspect of military culture is the distinction between two sub-classes, enlisted personnel and officers. Commissioned and noncommissioned officers are expected to lead (Steinberg & Nourizadeh, 2001). Enlisted personnel are taught that the unit is more important than the individual, and that one's actions impact the unit as a whole, whether positive or negative (Katz, 1990).

Military culture fosters intrinsic effort. "For instance, the military expects service members to place the 'mission first' above personal convenience and comfort" (Lang, Bliese, Adler, & Holzl, 2010, p. 526). On the other hand, military culture promotes self-reliance (Livingston, Havice, Cawthon, & Fleming, 2011). This subculture may be an influence on the soldier-student's ability to engage in DLDCD. Responsiveness in the higher education domain might include incorporating policies and procedures that accommodate these cultural differences that impact soldier-students' learning (Cunningham, 2012).

Deployment

After more than 10 years of conflict, over 2 million men and women in the U.S. military have served more than 3 million combat deployments to Afghanistan or Iraq, and there is still no clear end in sight. These overlapping conflicts represent the longest commitment of armed forces combat operations in our nation's history (Arango, 2010; Armed Forces Health Surveillance Center, 2011). Today, some soldiers are on their third, fourth, and even fifth deployment rotation (Defense Science Board Task Force, 2007). Post-9/11 wars are being fought by a relatively small, technologically equipped professional military. Unlike wars of earlier eras, the wars in Afghanistan and Iraq are being fought by an all-volunteer force (U.S. Department of Veterans Affairs, 2009). In order to keep enough boots on the ground, the military has used an unprecedented number of redeployments at a higher ratio than that recommended by the Secretary of Defense or the Army's deployment policy. The ratio of time-deployed to time-not-in-theater has been 1:1 or higher, compared to the DoD recommendation of 1:2 or the Army's 1:3 ratios (Bonds, Baiocchi, & McDonald, 2010).

The impact of deployment on the well-being of military personnel has received much research attention (Bliese, Wright, & Hoge, 2011). Deployed service members are exposed to a wide range of both acute and chronic stressors (Britt, Sinclair & McFadden, 2013; Jex, Kain, & Park, 2013). Adler et al. (2005) found that longer deployments were associated with an increase in distress. Individuals respond differently to stressful events. While some may develop serious mental and physical health problems, others report personal growth following exposure to stressors (Sinclair, Waitsman, Oliver, & Deese, 2013; Tedeschi & McNally, 2011). Although an occupational reality is that after returning from deployment, soldiers must prepare to return again to combat, an underlying benefit has been the soldier's "honing one's life to a single-minded focus" (Adler, Bliese & Castro, 2011, p. 4). On the other hand, stressors from military deployments can contribute to counterproductive work behaviors in military personnel (Tucker, et al., 2009). There is data indicating a link between the number of deployments and increased combat stress-related symptoms (MHAT V, 2008). This suggests a link between cumulative time of exposure and severity of experiences and the likelihood of maladaptive stress reactions (Warner et al., 2011).

King et al. (2006) conducted a literature review focused on the consequences of military deployment. They found an overemphasis on combat per se, to the exclusion of other potentially important dimensions. For example, many military personnel may never engage in combat activities, but are charged with duties in the aftermath of battle that are distressing. The majority of service members successfully manage daily demands, even in the face of tremendous challenges (Knox & Price, 1995). However, some service members struggle with current and/or cumulative stress of military duties,

especially by combat exposures and experiences in multiple wartime deployments (Chandra et al., 2010). Another risk factor is related to when the deployment(s) occurred. The nature of OIF deployment, and therefore the level of risk, changed over time. The first phase of OIF involved troop buildup and major combat operations. This was followed by a period of relative calm before a growth in insurgency (Tanielian & Jaycox, 2008).

During deployments, service members may face psychological stressors in difficult environments, such as sleep deprivation, fatigue, dealing with organizational dynamics, performing duties outside of one's normal area of concentration, being separated from friends, family and support groups, physical danger, boredom, a different cultural environment, extreme climate conditions, and extended work hours. Physical reactions to these stressors might include muscle aches, sleep disturbance, hyperarousal, altered sensory experiences, and headaches. Emotional responses may include fear, anxiety, irritability, anger grief, apathy, depression and guilt. Common behavioral responses may include aggression, impulsiveness, isolation, and compulsiveness (Adler, Litz, & Bartone, 2003; Warner, Appenzeller, Breitbach, Mobbs & Lange, 2011; King et al., 2006). Logically, these psychological stressors have the potential to impact the soldier-student's ability to persist toward *course completion* and were therefore included as factors of interest in this study.

In addition to circumstances experienced in a combat area, an increasing body of research emphasizes pre-deployment risk and resilience factors that might have implications for the long-term well-being of military personnel (Brewin, Andrews & Valentine, 2000; King et al., 1996; Rosenheck & Fontana, 1994). "Each service member

brings a unique set of personality, physiological, and personal history factors to each potential stressor. All of these factors mediate and moderate the individual's stress response either by enhancing resiliency or decreasing the effectiveness of coping mechanisms" (Warner, Appenzeller, Breitbach, Mobbs & Lange, 2011, p. 38). The combat soldier's response to deployment can be explored through a social psychiatric lens. From this perspective, there is no such thing as a solitary combat soldier, only combat soldiers within their units (Artiss, 2010).

Unit Cohesion

The concepts of unit morale and cohesion have a long history of attention by military scholars and are considered critical influences on both unit functioning and soldier resilience (Britt, Sinclair, & McFadden, 2013). In fact, in the military context, group cohesion has been identified as the strongest predictor of performance (Milgram, Orenstein, & Zafrir, 1989).

Although group cohesion is one of the most researched constructs of group dynamics, there has been a lack of agreement among researchers regarding how to define and measure it (Beale, Cohen, Burke, & McLendon, 2003). Early academic research on cohesion defined the concept as a property of the group that resulted from positive social relationships among group members (Lott & Lott, 1965). Within the military, unit cohesion is defined as the strength of the social ties within the unit and the ability for the unit to come together to accomplish mission objectives (Dempsey, 2010; Manning, 1991; McBreen, 2002; Siebold, 2006). Griffith (1988) described cohesion in two distinctive ways; affective, related to interpersonal support and instrumental, related to task performance. MacCoun (1996) reviewed both military and civilian studies of cohesion

and performance and concluded that task cohesion, as opposed to social cohesion or group pride, drives group performance. He pointed out that excessive social cohesion leads to groupthink, the failure of a highly cohesive group to engage in effective decision-making processes (Janis, 1972). Siebold (2006) defined military group cohesion as a "special type of cohesion in that typically the group exists as part of a large, long-lived, somewhat isolated, highly regulated, hierarchical organization from which the group member cannot easily leave or travel about" (p. 185). Kirkhaug (2009) went further, stating that the military is a compliance-enhancing organization, characterized by increasing control and restriction of unit members' behavior when exposed to external uncertainty. These restrictions are purposeful, intended to increase efficiency, safety and combat readiness by reducing misunderstandings and conflict within the unit.

Britt and Oliver (2013) reviewed the literature and found no research which demonstrates that unit cohesion creates more resilient service members. They hypothesize that unit cohesion is related to resilience because it provides service members with sources of support, allows unit members to focus on the team as a unit, and provides healthy distractions from the demands of combat. They also note that when service members are focused on the unit, they should be less likely to be self-focused. This might contribute to the role conflict for the soldier who engages in distance learning. An alternative perspective is offered by a group of Marines who, together, used their DLDCD experiences of enrolling in the same course as a means to cope with boredom between military missions. Therefore, in this case, DLDCD enhanced unit cohesion (geteducated.com, 2016). It is also in contrast with an embedded chaplain's observation that a unit member who is engaged in DLDCD is more likely to also complete unit tasks

in a timely and efficient manner, therefore demonstrating cohesion with unit members and classmates alike (Interview at Battlemind to Home VII Symposium, 2016).

Units with high levels of cohesion have military personnel who are close to each other, support one another, and work well together (Siebold, 2006). Unit cohesion is known to be important in supporting individual coping behavior and unit performance (Gal & Jones, 1995; Tischler, 1969). One aspect of being socialized into the military culture is learning to rely on team members and to look out for them in order to accomplish the mission (Greenberg & Jones, 2011; McBreen, 2002). The new soldier's initial training experience, boot camp, facilitates a profound change in his/her psychic reality. The grouping phenomenon established in training is vital to the soldier so that no man faces military combat alone. When faced with potentially lethal danger, the soldier "takes as his own the ethics and morals of this new group, a known and stable designation within it, and a willingness to join with the other members in both attitudes and action" (Artiss, 2010, p. 263).

While morale contributes to a service member's level of psychological resources, unit cohesion contributes to a service member's social resources (Hobfoll, 2002). Research on unit cohesion has shown positive correlations between cohesion and outcomes such as strong performance, reduced stress, and high re-enlistment intentions (Salo, 2011). In addition, supportive leadership, an element of unit cohesion, may help reduce the amount of stress experienced by military members (Britt, Davison, Bliese, & Castro, 2004).

Most soldiers in the post-9/11 wars train and deploy with the same unit. Within the unit, members form strong emotional bonds. This cohesiveness is protective to both the military mission and the individual service member (Coll, Weiss, & Yarvis, 2011). "During combat, support and encouragement from other members of the unit provide strength and motivation" (Tanielian & Jaycox, 2008, p. 278). In fact, many consider unit cohesion to be the most important protective factor in preventing a psychiatric breakdown (Helmus and Glenn, 2005; King, King, & Vogt, 2003; Martin, Rosen, Durand, Knudson, & Stretch, 2000).

Loyalty to the unit is fundamental to operational effectiveness. Unit performance in both wartime and peacetime has been directly linked to levels of morale and unit cohesion (Bartone et al., 1989; Manning & Ingraham, 1987; Shirom, 1976; Stouffer, 1949). Military tasks, by their nature, require intense teamwork and interdependence among group members (Bartone, 1999). Frequent interaction unites group members in their perceptions of shared experiences, thereby establishing the social reality of the group (Baratta & McManus, 1992). Shared experiences and spending sufficient time together seems to be a necessary condition for the development of unit cohesion (Bartone & Adler, 1999; Bartone et al., 2002; Griffith, 1986). However, being together does not guarantee unit cohesion if the members have no mutual, meaningful experiences (Bartone & Adler, 1999; Bartone et al., 2002).

Organizational and situational factors affect training expectations and motivation, and therefore the learning climate has an indirect effect on training success (Cannon-Bowers et al., 1995). In a positive learning climate, leaders value their subordinates' training and development (Siebold, 1988). Training creates salient organizational

experiences that have profound effects on unit cohesion (Bartone et al., 2002; Kirkland, 1987). Training that requires cooperation, mutual help and support has a unifying function (Janowitz, 1971; Kirkland, 1987; Manning, 1991).

Compared to active duty military, there are some differences related to the impact of deployment on Reservists. Their activation signifies profound changes in employment and family routine. They may also experience less benefit from typical moderators of stress, such as group cohesion, because they are less likely to have established a cohesive working relationship with their unit. National Guard units, however, may have relatively strong cohesion because of coming from the same geographical region, and therefore have had the time to develop a strong sense of connection (Browne et al., 2007; Wisher and Freeman, 2006).

In the military, individual identity is secondary to the identity of the group. The soldier-student is expected to adapt to group norms, as a strong sense of group allegiance and belonging is essential to combat function and effectiveness (DiRamio & Jarvis, 2011). The individual achievement of a degree in higher education may contradict the "unit comes first" mentality, that the group is emphasized over the needs and actions of the individual (Exum et al., 2011; Weiss et al., 2011). Salo (2011) suggests that peer cohesion mostly develops over time through interaction and shared experiences. The opportunity for interaction and cooperation among members supports unit cohesion. However, one of the main premises in the literature is that cohesion predicts individual performance, elevating individual motivational factors (Gully et al., 1995; Karau & Hart, 1998). Wessely (2006) notes that, at times, the needs of the individual can prevail over the needs of the military. The potential for this conflict appears evident for those

individuals who are pursuing DL experiences while simultaneously engaged with a unit during combat deployment.

Role Conflict

Role is defined as "the set of prescriptions defining what the behavior of a position member should be" (Biddle & Thomas, 1966, p. 29) and "serves as the boundary between the individual and the organization" (Schuler, Aldag, & Brief, 1977, p. 111). Role conflict is the condition of incompatible roles and is defined as the simultaneous occurrence of two (or more) sets of pressures such that compliance with one would make compliance with the other more difficult (Tubre & Collins, 2000). Similarly, pressures associated with membership in one group are experienced as pressures from membership in another group (Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1964). When a member of a group experiences role conflict, the individual will perform less effectively than if expectations imposed on the person did not conflict. This can result in decreased individual levels of satisfaction and decreased organizational effectiveness (Rizzo, House, & Lirtzman, 1970). Stress results from incompatible role expectations that the individual cannot resolve (Boles, Wood, & Johnson, 2003). This is the situation for soldier-students who are members of their military unit while simultaneously members of a virtual classroom.

In complex organizations, such as the military, role conflict is affected by the chain-of-command and the principle of unity-of-command. Chain-of-command organizations are set up with hierarchical relationships with a clear flow of authority from the top to the bottom. This structure is thought to be more satisfying to members, resulting in more effective performance and goal achievement (Rizzo, House, &

Lirtzman, 1970). The principle of unity-of-command states that an individual will receive orders from one superior only. "This prevents the allocating of time and effort according to individual preferences, rather than according to the demands of the task." (Rizzo, House, & Lirtzman, 1970, p. 150).

Miles & Perreault (1976) found that individuals vary in their experience of role conflict, depending on their conflict orientation, and that some role requirements more significantly contribute to conflict and are dependent on other major demands. Other researchers found that role conflict is associated with negatively valued states, e.g., tension, low satisfaction, and lower levels of involvement (Krayer, 1986; Schulter, Aldag, & Brief, 1977). Jackson & Schuler (1985) conducted a meta-analysis and conceptual critique of role conflict, and in contrast to the Miles & Perreault research, found that individual characteristics, such as conflict orientation, are generally not strongly related to role conflict. The results of a similar meta-analysis (Fisher & Gitelson 1983), found that role conflict is negatively related to level of commitment and level of involvement, two important considerations in this study. Therefore, when there is the presence of role conflict, one can expect negative consequences on organizational outcomes. On the other hand, two studies (Jackson & Schuler, 1985; Tubre & Collins, 2000) found that role conflict did not appear to be meaningfully related to job performance.

Scott (1992) describes one potential role conflict that is specific to the military, that of being an officer and fulfilling the expectations of one's occupation within the military. Her research suggests that this type of role conflict decreases over time. In the study of another military occupation, Vickers (1984) found that military chaplains experience role conflict and that feelings of conflict are related to rank. For the purpose

of this study, the concept of role conflict is linked to McBreen's (2002) contention that college courses interrupt unit cohesion, for both the individual and the unit.

It was interesting that the issue of role conflict was unintentionally described within correspondence during the data collection phase of this study. In response to a request to share the survey link with Sailors who use the Navy Virtual Education Center (VEC) for the purpose of Navy Voluntary Education (VOLED), one staff person wrote that Navy policy prohibits Sailors from engaging in research surveys "because they represent a significant expenditure of Navy resources and sometimes are accomplished at the expense of other mission-related efforts" (M. Wadsworth, personal communication, May 4, 2015). However, Wadsworth did not acknowledge that VOLED might have a similar impact of interfering with mission-related efforts.

Although no studies of role conflicts have been done on military learners, the public image of the demanding role of the military suggests that role conflicts may exist in soldier-students (Hayek, 2011). Competing priorities are experienced as an obstacle to providing education in theater and can be viewed as a distraction from the mission (Warner et al., 2011), therefore the majority of education is not traditional classroom education. It is often performed in austere circumstances and the Instructor's efforts should be tailored to these circumstances (Warner et al., 2011).

Using Social Media for Research

Social media is defined by Murphy, Hill, and Dean (2013) as a collection of websites and web-based systems that allow for mass interaction, conversation, and sharing among members of the network. The use of social media has rapidly increased over the last few years, by both the general public and specific subpopulations (Fox &

Rainie, 2014; Murphy et al., 2014). Over 80% of the U.S. adult population has Internet access. Of that, 73% use social media. In fact, social networking sites are currently being used by 90% of those in the 18 – 29 age demographic (Duggan & Smith, 2013).

Researchers are beginning to recognize the potential for social media to provide options to conduct research quickly and efficiently, representing the possibility of increased access to survey respondents (Murphy et al, 2014; Sage, 2014). Not only can social media research be less costly for the researcher, it is less burdensome and less intrusive for research participants (Murphy et al., 2014). Another reason to consider using social media for survey research is its remarkable explosion in popularity (Murphy, et al., 2014). "It is only natural for researchers to aim to meet potential respondents where they have the best chance of getting their attention and potentially gaining their cooperation" (Murphy, et al., 2014, p. 3). In addition, replacing paper-and-pencil surveys with computers, tablets or smartphones introduces new challenges, such as digital literacy, screen size, operating system capabilities, broadband connectivity, and hardware limitations" (Sage, 2014). Although there are many drawbacks regarding the use of social media in research related to generalizability (Murphy et al., 2014), it is better to collect some data and gain some insight than to collect no data and gain no information (Hill, 1998). When probability sampling is not essential and when target respondents have access to the necessary technology, online surveys can be an effective mode of survey administration (Sue & Ritter, 2012).

Sampling Frame

Convenience sampling is a nonsystematic means of recruiting participants, allowing respondents to self-select into the sample. However, with the use of social

media, there are no restrictions to participation and there are no controls over multiple submissions by a single respondent. Researchers must consider the universe of people who use the Internet, who uses social media among those on the Internet, and how those people are represented on social media (Sue & Ritter, 2012). Members of online communities may find the practice of convenience sampling via a survey link on a social networking website "inappropriate, offensive, and a violation of their privacy" (Sue & Ritter, 2012, p. 44). In addition, Murphy et al., (2014) report that there has been little progress in attempts to show how data collected through the use of social media sites can represent the general population. Because social media users are not representative of the wider general public and due to the lack of reliable sampling frames, only non-probability samples can currently be gathered in this way. However, these nonprobability samples that can be selected via Internet work well for exploratory research (Sue & Ritter, 2012).

Coverage error in social media research is complicated because the relationship between unique users and unique accounts is not necessarily one-to-one. Some individuals have multiple accounts on the same platform, other accounts are shared by multiple users, and accounts can also represent companies or products instead of individuals (Nexgate, 2013). Another factor affecting representativeness concerns access to the Internet and proficiency in using it (Stern, Bilgen, & Dillman, 2014). Race, education, rurality, and socio-economic status play a role in social media usage and proficiency (Stern, Adams, & Elasser, 2009; Witte & Mannon, 2010). For example, Duggan and Brenner (2013) found that African-Americans and Latinos use social networking sites and other social media at slightly higher rates than whites. However, the U.S. Census Bureau (2013) reports that both African-Americans and Latinos report

approximately 20 percent less access to the Internet. It is unknown if parity in access and use across population groups will ever be achieved or whether researchers will be able to represent subgroups well enough for quality measurement (Murphy et al., 2014). However, Baltar & Brunet, (2012) found that using a group-centered approach facilitated by social media has worked to reach specific populations.

Specific to research barriers found with a military sample, Miller et al. (2011) report:

> "Researchers, even those sponsored by DoD entities, may face challenges in obtaining the cooperation of unit or base-level commanders for promotion or administration of the instrument in their domain. Leaders may feel bombarded with requests for focus group and survey research participation and thus may only be willing to accommodate research they have been formally tasked by senior leadership to support. Indeed, researchers may face active opposition to their efforts, with commanders instructing their personnel not to participate in a study" (p. 61).

As one possible way to overcome these potential obstacles to participation in a military study, social media sites that are of interest to military personnel who are also college students were targeted for this research.

Facebook

Facebook is currently the most popular social networking service with almost over a billion active users, including more than half, 57%, of U.S. adults (Smith, 2014). From its inception, Facebook's design has promoted the use of users' authentic identities. To build real social networks and promote responsible behaviors, Facebook policy stipulates that each user can have only one account. However, loopholes exist that allow for issues such as multiple accounts for one user, underage accounts, accounts intended for spamming, and 'fake' accounts (8.7% of accounts as of June 2012) (Facebook, 2012a; Facebook, 2012b). The terms of use for Facebook include the following:

> If you collect information from users, you will: obtain their consent, make it clear you (and not Facebook) are the one collecting their information, and post a privacy policy explaining what information you collect and how you will use it. (http://www.facebook.com/legal/terms)

Surveys can be deployed to Facebook to solicit participants, but it is important to weigh the ease of data collection using social media with sampling biases. However, this method of online survey deployment is appropriate for exploratory research (Sue & Ritter, 2012).

The U.S. military is a mobile population, often relocating from one base to another. Facebook was introduced in the midst of OIF and OEF, a time marked by even more frequent mobility among active duty military and their families. When researchers grasp this aspect of its potential participants, they recognize a unique opportunity to optimize any data capture effort. (Sage, 2014; Sorrells et al., 2015). Considering these facts, the use of social media as the platform to collect data for this study was incorporated into the research design.

Conclusion

This chapter summarized the literature about DL, with particular attention to military DL. Literature about persistence, resilience, unit cohesion, and role conflict are key concepts in this study, and were included in this review. An overview of military education and issues specific to active-duty military students versus those who are citizen-soldiers was summarized. A description of deployment issues and environment and a discussion of military culture were included. A discussion of the use of social media for research completes the list of topics covered here. This review of the literature demonstrates the need for research that is specific to the learning experiences of soldier-

students who engage in DLDCD, as there are no studies which specifically study these students. This study begins to fill that gap.

Chapter Three

Methodology

Introduction

The design of this study is exploratory and quantitative in nature. The goal was to explore the differences, if any, in multiple variables for those who completed their distance learning during combat deployment (DLDCD) course and those who did not complete their course. The quantitative design was chosen to gather as much data as possible from many participants. The methods used to explore this research focus are presented in this chapter and organized into the following sections: (a) selection of participants, (b) instrumentation, (c) data collection, and (d) data analysis. The research questions are:

1. What are the differences, if any, in the military macro factors of *combat zone, number of times deployed to a combat area, length of deployment, level of hazardous duty, completion of BMT, completion of CSF training, use of MEC, adequate MEC support, adequate technical help, consistent Internet access,* and *combat environment (DRRI-2 C)* for those students who completed their DLDCD course and those who did not complete their course?
2. What are the differences, if any, in the military mezzo factors of *unit members' support of DLDCD, unit leaders' support of DLDCD, military role conflict with DLDCD, unit relationships (DRRI-2 K1),* and *unit support (DRRI-2 J)*for soldier-students who completed their DLDCD and those who did not complete their course*?*

3. What are the differences, if any, in the military micro independent variables of *number of deployment while engaged in DLDCD, military affiliation, military rank,* and *military occupation* for those who completed their DLDCD course and those who did not complete their course*?*
4. What are the differences, if any, in the higher education macro factors of *pace of DL course* and *higher education institution* for soldier-students who completed their DLDCD course and those who did not complete their course*?*
5. What are the differences, if any, in the higher education mezzo factors of *frequency of Instructor contact, timeliness of Instructor response, Instructor flexibility, DL classmate support, ability to engage in DL teamwork, DLDCD role conflict with military responsibilities,* and *DL course* for soldier-students who completed their DLDCD course and those who did not complete their course*?*
6. What are the differences, if any, in the higher education micro factors of *DL online hours per week, DL offline hours per week, comfort with DL course options, able to manage academic workload, able to meet academic deadlines, higher education goal related to DLDCD, program completion related to DLDCD, expectations of DLDCD, satisfaction with DLDCD, willingness to engage in DLDCD again, degree aspiration,* and *level of education completed* for soldier-students who completed their DLDCD course and those who did not complete their course*?*
7. What are the differences, if any, in the personal/family mezzo factors of *family support, first generation college student, parent status,* and *family size* for soldier-

students who completed their DLDCD course and those who did not complete their course*?*

8. What are the differences, if any, in the personal micro factors of *comfort with basic computer applications, level of resiliency (CD-RISC 10), age, gender, race,* and *relationship status* for soldier-students who completed their DLDCD course and those who did not complete their course*?*

Selection of Participants

The target population studied was military personnel and citizen-soldiers, both active duty and veteran, who engaged in DLDCD. Since the survey was conducted for exploratory and descriptive purposes, no attempt was made to examine a random sample. Instead, social media was used to access participants who met the criteria for this study – those who engaged in distance learning while deployed to a combat area. All subjects who participated in this survey did so voluntarily and did not receive any type of compensation for participation. However, an incentive was offered to eligible participants – a drawing for one of five $100 Amazon gift cards.

Instrumentation

A systematic review of DL literature, with particular attention to student persistence and military DL experiences was conducted to identify pertinent questions for this exploratory study. Many independent variables were operationalized using a 5-point Likert response format. In addition, the following established scales were included in the DLDCD survey instrument.

Resilience Measurement Scale

Although several scales have been developed for measuring resilience, no one scale has been found to be preferable over the others (Connor & Davidson, 2003). Windle, et al., (2011) conducted a methodological review of resilience measurement scales and found no current 'gold standard' amongst the 15 measures reviewed. However, the Connor-Davidson Resilience Scale (CD-RISC) received one of the highest ratings. Campbell-Sills and Stein (2007) found that the 10-item version of the CD-RISC demonstrated good internal consistency and construct validity and allows for efficient measurement of resilience. Therefore, the CD-RISC 10 was chosen for this study as the subscale to measure resilience.

Unit Cohesion Scales

The development and validation of the Deployment Risk and Resilience Inventory-2 (DRRI-2) was supported by the Department of Veterans Affairs, Health Services Research and Development Service. The objective of this research effort was "to ensure the instrument's applicability across a variety of deployment circumstances (e.g., different eras of service) and military subgroups (e.g., men and women), as well as to validate updated measures in a contemporary Veteran cohort" (Vogt, et al., 2012, p. 3). The DRRI-2 is the result of a multi-year psychometric endeavor that involved the application of both classical test theory (CTT) and item response theory (IRT) analytical strategies (Vogt, et al, 2012). CTT analyses confirmed high internal consistency reliability. Alphas for the scales averaged .93, well above the minimum recommended alpha of .80 (Nunnally, 1978). DRRI-2 scales showed reasonable dispersion, suggesting

that there are no substantial problems with either ceiling or floor effects (Vogt, et al., 2012).

"The measures that comprise the DRRI-2 are not subscales that are summed to create a total 'deployment experience' score; instead they are distinct scales that address different but related factors that may contribute to post-deployment. Therefore, any one or more of these scales may be used individually, depending upon the needs of the researcher" (Vogt, et al., 2012, p. 3). "Information generated from the administration of DRRI-2 scales can facilitate a better understanding of the special training and preparedness needs of personnel facing the challenges presented by modern military operations" (Vogt et al., 2012, p. 11).

The DRRI-2 subscales regarding unit cohesion were used for this study, specifically Section J: Unit Social Support and Section K1: Relationships during Deployment. Vogt et al. (2012), state that the unit social support subscale assesses:

> the extent to which an individual perceived assistance and encouragement in the war zone from fellow unit members (i.e., felt a sense of closeness and camaraderie with peers in the unit) and unit leaders (i.e., felt appreciated by superiors and believed that they were interested in one's personal welfare) (p. 6).

Section K1 assesses "exposure to harassment that is non-sexual but that may occur on the basis of one's biological sex or minority or other social status. Categories of harassment include constant scrutiny, questioning one's ability and commitment, and threats to safety" (Vogt et al., 2012, p. 7).

Combat Environment Scale

Section C of the DRRI-2, was used to survey environmental conditions. Vogt et al. (2012) describe this subscale in the following manner:

> Difficult living and working environment: exposure to events or circumstances representing repeated or day-to-day irritations and pressures related to life during military deployment. These personal discomforts or deprivations may include the lack of desirable food, lack of privacy, poor living arrangements, uncomfortable climate, cultural difficulties, and constraints to performing one's duties (p. 5).

Level of Risk and Combat Area Designation

"Some soldiers receive hazardous duty pay as partial compensation for their occupational exposures. Hazardous duty pay is received by flight crew, parachutists, divers, those assigned to war zones (combat pay) or foreign duty, and those exposed to environmental stressors or experimental vaccines" (Bell, Amoroso, Williams & Yore, 2010, p. 229). For this study, the level of hazardous duty pay was used to determine level of risk and was coded as follows: not receiving hazardous duty pay, receiving one type of hazardous duty pay only, and receiving two or more types of hazardous duty pay concurrently while taking part in a DL course. In addition, study participants were asked to identify the specific combat zone where they were deployed while engaged in DLDCD, as designated by an Executive Order from the U.S. President (Appendix B). They were asked to provide both their compensation category and combat zone to provide the context for the level of environmental stress experienced while engaged in DLDCD.

Demographic Information

Surveys archived at the National Opinion Research Center were reviewed for examples of collecting demographic information. Demographic items included in this study were: gender, age ethnicity/race, relationship status, and number of minor children. Demographics specific to the military included items regarding military affiliation and occupation, rank, number of deployments to a combat area, length of deployment, use of

the Military Education Center (MEC), and adequacy of MEC support. Information about marital status and number of children was collected as it could identify those soldier-students who also have personal, or off-task demands as compared to other soldier-students.

Occupations were grouped using the Department of Defense (DoD) codes. "DoD codes are broad occupational categories composed of similar military occupational specialties" (Bell, et al., 2010, p. 229). Bell et al. (2010) identified the following:

> The categories for enlisted personnel include infantry/gun crews, electrical equipment repair, communications/intelligence, health care, technical/allied specialists, support/administration, mechanical equipment repair, crafts workers, service/supply, and non-occupational. Warrant and commissioned officer categories include general officer/executive, tactical operations officer, intelligence officer, engineering and maintenance officer, scientists and professionals, health care officers, administrators, supply/procurement and allied officers, and non-occupational" (p. 229).

Online Surveys

Rapid technology development has created a new environment for conducting survey research. Using online surveys provides both opportunity and challenge for researchers. Advantages to an online survey include efficiency, direct data entry and a wide geographic reach. However, online data collection may be limited by coverage bias and too many digital surveys, causing overload (Sue & Ritter, 2012).

In a 2010 Department of Veterans Affairs report, Westat found that the majority of veterans, 72.3%, access the Internet and, of those who use it, most access it at least once per day, 68.4%, and 23.5% are online at least once a week, but not every day. The location use is generally in the home or workplace. Younger veterans, those 18 – 30, reported more use of the Internet (98.7%) than veterans overall. Almost all young veterans, 95.9%, and those serving since September, 2001 or later, 96.1%, use the

Internet at least weekly, if not daily. While conducting focus groups with military personnel regarding the best approach for assessing the needs of service members and their families, Miller et al. (2011) learned that the optimum approach for collecting data was described as an online survey option aiming for no longer that 15 minutes required to complete the assessment process. This information supports the use of the DLDCD online survey of approximately 15 – 20 minutes in length developed for this study and offered online.

Data Collection Background

There is considerable discussion in the literature regarding the use of internet-based surveys, due to historically low response rates (Dillman et al., 2009; Kongsved, Basnov, Holm-Christensen, & Hjollund, 2007; Sheehan & McMillan, 1999), but the use of web-based survey instruments can be an effective way to reach specifically targeted populations (Ekman & Litton, 2007). In web-based surveys, there is no cost to the respondent, although there are the fixed costs of establishing and maintaining Internet service. (Bachmann, Elfrink, & Vazzana, 2000). The initial setup of web-based surveys takes time, but the transmission of thousands of surveys can be completed in minutes (Cobanoglu, Warde, & Moreo, 2000).

Greater differences in response rates are generally found in populations where there is not universal access to computers and this can be a source of sampling error (Ekman & Litton, 2007). However, this particular sampling issue in general population surveys is not present when sampling college students who have access to the Internet and use computers regularly in the course of student life (Pealer, Weiler, Pigg, Miller, & Dorman, 2001), although there is some concern about the over-sampling of college

students leading to higher non-response rates (Lipka, 2011; Porter et al., 2004). In the process of developing a new approach to assessing the needs of service members and their families, Miller et al. (2011) found that all eligible respondents chose to complete the survey online as opposed to a telephone interview. Because the participants in this study have used computer technology to engage in DL and the initial sample of participants were also members of the IAVA online community, an internet-based survey was chosen to collect data.

Sue and Ritter (2012) identified several advantages and disadvantages regarding placing the survey invitation on a particular website. Advantages include that email addresses are not needed, the visitor may be more motivated to complete the survey, as he or she has an interest in the topic, the survey can be placed on more than one website, the respondent can be proactive, the process is nonintrusive, and the respondent may trust the organization, providing a higher level of credibility for the survey. Disadvantages include that this is a passive approach; visitors may not notice or be intrigued by the survey link, cooperation from other organizations is required, and it takes longer than other methods to obtain the desired sample size.

Data Collection Process

Six combat veterans from Alpha Company, Warlords, 101st Combat Aviation Brigade, who previously engaged in DLDCD, volunteered to examine the questionnaire and evaluate it in terms of length, flow, ease of administration and acceptability to responders. Their feedback was taken into account to refine the DLDCD survey before beginning to collect data with this instrument.

The initial request for participation began with members of the Iraq and Afghanistan Veterans of America (IAVA), resulting in 9 completed DLDCD surveys. This sampling frame was chosen because IAVA members live all over the United States and represent both active-duty and citizen-soldier members. This sample had the potential to represent students who engaged in DL from a broad range of higher education institutions, thereby strengthening the convenience sample and providing much more useful information than would be possible by surveying participants from a single higher education institution.

Data collection then expanded to Military Education Centers (MEC), resulting in an additional 18 completed DLDCD surveys. One hundred fifty-eight MECs are listed on the GoArmyEd webpage, the virtual gateway for all eligible active duty, National Guard, and Army Reserve soldiers to access tuition assistance for classroom and distance learning. One hundred six of the MECs provided the email addresses of Educational Services Specialists (ESS) and Education Services Officers (ESO) on the GoArmyEd webpage. These email addresses were used to request that ESS and ESO personnel share the DLDCD survey link with eligible participants. Twenty-six MEC representatives responded, sharing a wide range of support and willingness to participate (Appendix C).

Data collection then shifted from the military to the higher education domain. Universities who provided email addresses on MEC webpages were contacted with a request to share the survey link with their students. Ten university representatives responded, again with a wide range of support and willingness to share the link (Appendix D). Next, at the recommendation of the Student Veterans of America (SVA) national office, a request to participate was sent to SVA officers and advisors. The

survey link was shared with 1,113 on-campus SVA groups who provided contact information in the online directory for SVA chapters around the country. A detailed listing of the 45 direct responses is documented in Appendix E. Although contact information was available through this directory at the time of data collection for this study, it is noted at the time of this writing that specific email addresses are no longer included in the SVA national online directory, limiting the value of this option for future researchers.

Finally, social media was used as the mechanism for data collection. First, a Facebook page was set up specifically about DLDCD research. The page included a link to the survey. Next, at the recommendation of an SVA advisor, Victory Media's listing of 2015 Military Friendly Colleges and Universities, together with the SVA national online directory, were used as the points of contact on Facebook. Victory Media is an online platform that connects veterans to employers and schools. The survey link was also posted to military and veteran Facebook pages. Table 1 summarizes the social media exposure for this exploratory study. Appendix F and Appendix G provide the detail. This entire social media process yielded an additional 74 completed DLDCD surveys.

This sequence of data collection, beginning again with IAVA and MECs and ending with social media exposure, was completed a second and third time, three weeks apart from the initial requests and postings and each other. This resulted in the remaining 50 completed surveys.

Table 1

DLDCD Survey Social Media Exposure

Facebook page type	# of Facebook pages that accepted a survey link post	# of Facebook "likes"
Colleges and Universities	1,440	39,117,250
Alumni Organizations	199	706,533
Student Veteran Organizations	290	56,521
Total Higher Education Social Media Exposure	1,929	39,880,324
Military pages	200	29,667,950
Total Social Media Exposure	2,129	69,548,274

Data Collection Procedure

An internet questionnaire compiled with Qualtrics software was used to collect data (Appendix A). Items addressed in the cover letter for this study included: university and researcher contact information, the purpose of the research, who will use or benefit from the research, an appeal for the participant's cooperation, the estimated length of time to complete the survey, how confidentiality will be respected, a description of the incentive to participate, and the deadline for return.

The study relied on self-report as the sole method of data collection. On the first day of the study, the questionnaire was presented to IAVA members via a link on this organization's website and on the IAVA Facebook page. Participants were asked to click on a link to complete the survey. The link opened up to an introduction page that included a short greeting, informed consent information and survey instructions. After one week, the survey was then shared with representatives at Military Education Centers (MEC) and with higher education contacts found on the MEC web pages. Some of these contacts agreed to share the link with eligible participants known to them. Next, with the support of Servicemembers Opportunity Colleges and the national office of the Student

Veterans of America (SVA), the link was shared with SVA leaders on college campuses across the country. Some SVA group leaders agreed to share the survey link with their members. Finally, the survey link was posted to multiple higher education and military Facebook pages. With two follow-ups, it is possible to achieve 15 to 20 percent increases over the initial return (Woodruff, Conway, & Edwards, 2000). Therefore two follow-up contacts were made to IAVA, MECs and SVA leadership at three and six weeks after the initial request.

Data Analysis

Data analysis was conducted in the following phases. First, a study map was developed using systems theory concepts to organize multiple variables (Appendix H). A codebook was then created. Once the completed surveys were received in Qualtrics, a numeric score was assigned to each response. The numeric codes were then entered into an SPSS 23 spreadsheet. Data cleaning was accomplished by examining each of the factors studied. Frequency procedures were run for each variable. After reviewing the frequency results, obvious data entry errors were corrected by referring to the survey hard copy. Next, violations in logic were explored. Seven completed surveys were eliminated from the analysis due to logic violations.

Data Integrity

Tests for normality were conducted by checking the distribution of scores. Frequency counts and histograms were then examined and Kolmogorov-Smirnov and Shapiro-Wilk tests were run. The ratio of skewness and kurtosis to the standard error of each was calculated for all variables. The impact of outlier scores was assessed for the four variables that were found to have a non-normal distribution of scores (*number of*

times deployed to a combat area, number of deployment while engaged in DLDCD, Instructor flexibility, and *family size)* by examining boxplots. Outlier scores were identified as those scores two units of standard deviation or more from the mean score. Outliers were then recoded in SPSS to exclude them from data analysis. Data was then retested, excluding these outlier scores. SPSS collinearity diagnostics were run to see if multicollinearity exists (those variables with a Pearson Correlation coefficient above .80).

The data set was checked for missing information. In each case when the missing data was an item of a subscale, the mean score based on the valid responses in the related subscale was used to compute the composite score for that subscale. A reliability analysis was then completed. All four subscales on the survey demonstrated an acceptable level of internal consistency, although the Department of Defense subscales, with a Chronbach's alpha rating greater than .90 on all three DRRI-2 scales, suggests that some items in the subscales are redundant. Questionnaires with missing data for single-item questions were eliminated from this study.

Univariate/descriptive analysis was calculated using SPSS. A bivariate analysis of all study variables related to the dependent variable of *course completion* was completed. Independent samples t-tests were run for each independent continuous variable and chi-square analyses were completed for categorical variables. Those independent variables found to have statistically significant differences were examined independently using a single predictor logistic regression.

Conclusion

This chapter reviewed the research design and methodology used to explore the differences in macro, mezzo and micro factors across military, higher education and

personal/family domains for those soldier-students who completed their DLDCD course and those who did not complete their course. The participants were members of the IAVA, SVA and/or willing to complete the survey via a link on social media. The psychometric qualities of the CD-RISC 10 and the DRRI-2 subscales regarding deployment environment and unit cohesion were discussed and were supported for their use in this study. The instrumentation process and data collection procedures were reviewed. The data analysis methods were discussed. The results of this analysis are presented in the following chapter.

Chapter Four

Findings

This study examined differences in various systems factors for soldier-students who completed their distance learning course while deployed and those who did not complete their course. Fifty-two independent variables were organized using a systems theory framework to explore soldier-students' experiences at the macro, mezzo, and micro levels of the military, higher education and personal/family domains. One hundred forty-four participants successfully completed the DLDCD survey tool. Nearly 80% of those who responded to this survey (n = 115) completed their DLDCD course, while slightly over 20% (n = 29) did not complete their DL course. The zip codes of each individual's current place of residence were used to demonstrate that participants represented a national sample. This information is depicted in Figure 1 below.

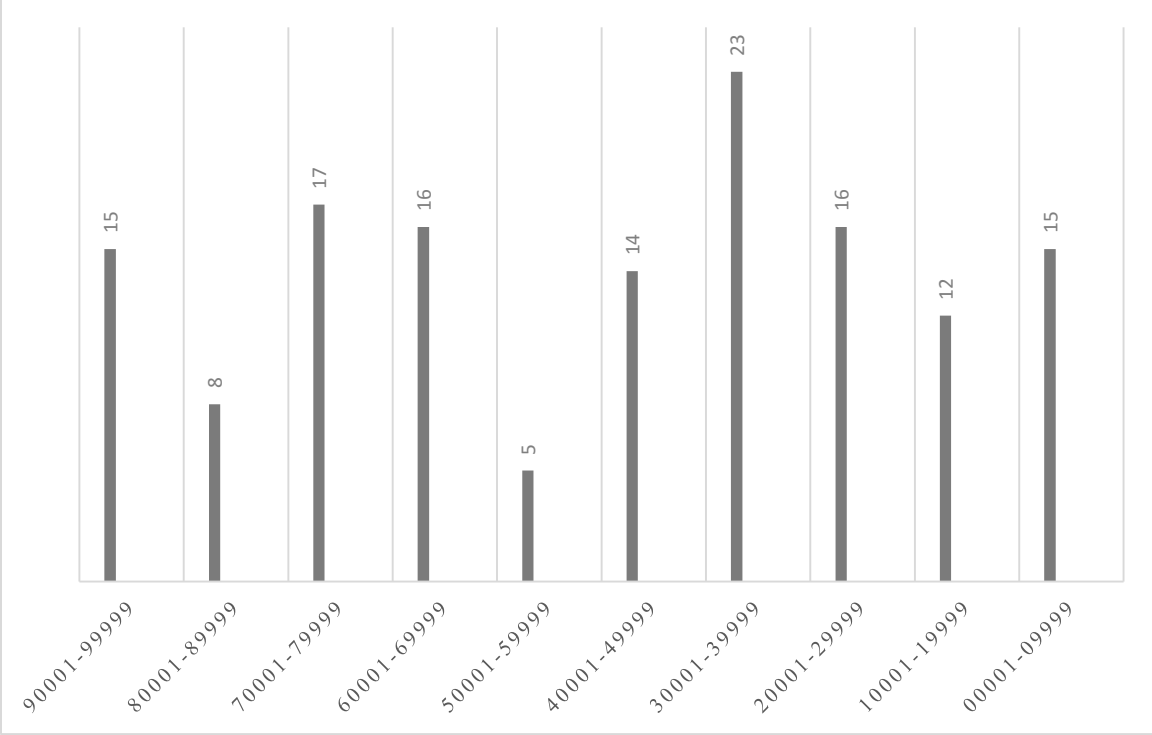

Figure 1. Location of study participants by zip code

Research Question #1 – Military Macro

What are the differences, if any, in the military macro independent variables of *combat zone, number of times deployed to a combat area, length of deployment in months while engaged in DLDCD, compensation category, Battlemind Training (BMT, Comprehensive Soldier Fitness (CSF) Training, Military Education Center (MEC) use, adequate MEC support, adequate technical help,* and *consistent Internet access* for those students who completed their DLDCD course and those who do not complete their course?

The independent variable *adequate technical help* was the only military macro factor found to demonstrate statistically significant differences ($p<.05$) for those soldier students who completed their DLDCD course and those who did not complete their course. Details of the analysis for each military macro independent variable are outlined below.

Combat zone

Combat Zone is defined as a categorical variable indicating the soldier-student's location at the time of DLDCD. Combat zones are designated by Executive Order from the President of the United States (see Appendix G). Combat veterans from each of the two major areas of conflict in the Global War on Terror (GWOT), Afghanistan and Iraq, were represented nearly equally in this sample. The remaining 17 participants served in other areas designated as a combat-related zone, such as Bosnia, Kosovo, Djibouti or Somalia. Table 2 provides the detail of statistical analysis for this variable.

Table 2

Statistical Analysis of Combat Zone (N = 144)

	n	%	Mean	Median	Mode	SD	Range	Min	Max
Descriptive:			1.67	2	1	.679	2	1	3
Iraq	65	45.1							
Afghanistan	62	43.1							
Other	17	11.8							

	Course Completion				Asymptotic Significance (2-sided)	Phi and Cramer's V	df
	Yes		No				
	n	%	n	%			
Bivariate:					.810	.054	2
Iraq	51	78.5	14	21.5			
Afghanistan	51	82.3	11	17.7			
Other	13	76.5	4	23.5			

Chi-square analysis indicated that there is no statistically significant difference in the independent variable of *combat zone* for those who completed their DLDCD course and those who did not complete their course. However, those who were stationed in Afghanistan completed their DLDCD at a slightly higher rate (82.3%, $n = 51$) than study participants stationed elsewhere.

Number of times deployed to a combat area

The independent categorical variable *number of times deployed to a combat area* is the total number of deployments served in a combat area prior to and including the soldier-student's DLDCD experience. The range of this independent variable for study participants was a minimum of one deployment and a maximum of twelve deployments. Table 3 provides the detail of the statistical analysis for this variable.

Table 3

Statistical Analysis of Number of Times Deployed to a Combat Area (N = 144)

	n	%	Mean	Median	Mode	SD	Range	Min	Max
Descriptive:			2.24	2	1	1.130	3	1	4
Once	49	34.0							
Twice	40	27.8							
Three times	26	18.1							
Four or more times	29	20.1							

	Course Completion				Asymptotic Significance (2-sided)	Phi and Cramer's V	df
	Yes		No				
	n	%	n	%			
Bivariate:					.789	.085	3
Once	41	83.7	8	16.3			
Twice	30	75.0	10	25.0			
Three times	21	80.8	5	19.2			
Four or more times	23	79.3	6	20.7			

Chi-square analysis indicated that there is no statistically significant difference in the independent variable of *number of times deployed to a combat area* for those who completed their course and those who did not complete their course, although those who deployed only once completed their DLDCD course at a slightly higher rate, 83.7% (*n* = 41) than those who deployed more often.

Length of deployment

The independent categorical variable of *length of deployment* is the number of months served during the soldier-students' tour of duty to the combat area while also engaged in distance learning. An analysis of this variable follows in Table 4.

Table 4

Statistical Analysis of Length of Deployment in Months while Engaged in DLDCD

	n	%	Mean	Median	Mode	SD	Range	Min	Max
Descriptive:			1.87	2	2	.629	2	1	3
1 – 6 months	39	27.1							
7 – 12 months	85	59.0							
13 or more months	20	13.9							

	Course Completion				Asymptotic Significance (2-sided)	Phi and Cramer's V	df
	Yes		No				
	n	%	n	%			
Bivariate:					.345	.122	2
1 – 6 months	30	76.9	9	23.1			
7 – 12 months	71	83.5	14	16.5			
13 or more months	14	70.0	6	30.0			

Chi-square analysis indicated that there is no statistically significant difference in the independent variable *length of deployment* for those who completed their DLDCD course and those who did not complete their course. However, those who deployed for a period of 7 – 12 months completed their DLDCD course at a slightly higher rate, 83.5% (n = 71) than those who deployed for shorter or longer periods of time.

Level of hazardous duty

As a means to determine the soldier-student's level of risk while deployed, participants were asked to identify their compensation category: did not receive hazardous duty pay, received hazardous duty pay, or received two or more types of hazardous duty pay. The details of the analysis for this variable are captured in Table 5.

Table 5

Statistical Analysis of Compensation Category (N = 144)

	n	%	Mean	Median	Mode	SD	Range	Min	Max
Descriptive:			1.45	1	1	.527	2	0	2
No hazardous duty pay	2	1.4							
Hazardous duty pay	75	46.5							
Two or more types of hazardous duty pay	67	13.9							

	Course Completion				Asymptotic Significance (2-sided)	Phi and Cramer's V	df
	Yes		No				
	n	%	n	%			
Bivariate:					.144	-.122	1
No or one type of hazardous duty pay	65	84.4	12	15.6			
Two or more types of hazardous duty pay	50	74.6	17	25.4			

Chi-square analysis indicated that there is no statistically significant difference in the independent variable of *level of hazardous duty* for those who completed their DLDCD course and those who did not complete their course, although those who received no or only one type of hazardous duty pay, 84.4% (n = 65) completed their DLDCD course at a higher rate than those who received two or more types of hazardous duty pay, 74.6% (n = 50).

Resilience-strengthening prevention programs

Study participants were asked about their completion of two trainings offered to through the Army that were designed to increase level of coping and strengthen resiliency characteristics - Battlemind Training (BMT) and Comprehensive Soldier Fitness (CSF) Training. Table 6 provides the detail of statistical analysis for both resilience-strengthening programs.

Table 6

Statistical Analysis of Resilience-strengthening Programs (N = 144)

	n	%	Mean	Median	Mode	SD	Range	Min	Max
Descriptive:									
Battlemind Training (BMT)			.92	1	0	.845	2	0	2
Completed BMT	41	28.5							
Did not complete	57	39.6							
Uncertain	46	31.9							
Comprehensive Soldier Fitness Training (CSF)			.83	1	1	.760	2	0	2
Completed CSF	57	39.6							
Did not complete	56	38.9							
Uncertain	31	21.5							

	Course Completion				Asymptotic Significance (2-sided)	Phi and Cramer's V	df
	Yes		No				
	n	%	n	%			
Bivariate:					.178	.155	2
Completed BMT							
Yes	29	70.7	12	29.3			
No	49	86.5	8	14.0			
Uncertain	37	80.4	9	19.6			
Completed CSF					.800	.056	2
Yes	44	77.2	13	22.8			
No	46	82.1	10	17.9			
Uncertain	25	80.6	6	19.4			

Chi-square analysis indicated that there is no statistically significant difference in *BMT* or *CSF* for those who completed their DLDCD course and those who did not complete their course. In each case, those who did *not* complete these trainings completed their DLDCD course at a slightly higher rate.

Military Education Center (MEC) support

The independent variable *Military Education Center (MEC) support* is a categorical variable indicating the soldier-student's decision to access MEC support while engaged in DLDCD (yes), chose not to use MEC support (no), or did not have access to a MEC while engaged in DLDCD. The independent variable *adequacy of MEC support* is a categorical variable and indicates the soldier-student's perception of the adequacy of MEC support – adequate support, inadequate support, no access to MEC, or

had access, but chose not to use MEC. Table 7 provides the statistical analysis for these two independent variables.

Table 7

Statistical Analysis of Military Education Center (MEC) Support and Adequacy

	n	%	Mean	Median	Mode	SD	Range	Min	Max
Descriptive:									
MEC use			1.36	1	2	.675	2	0	2
Used MEC	60	41.7							
Did not use MEC	16	11.1							
No access to MEC	68	47.2							
Adequate MEC support			1.72	2	2	1.020	4	0	4
Yes	48	33.3							
No	12	8.3							
No access	68	47.2							
Had access but did not use MEC	16	11.1							

	Course Completion				Asymptotic Significance (2-sided)	Phi and Cramer's V	df
	Yes		No				
	n	%	n	%			
Bivariate:					.430	.108	2
MEC use							
Used MEC	50	83.3	10	16.7			
Did not use MEC	11	68.8	5	31.3			
No access to MEC	54	79.4	14	20.6			
Adequate MEC support					.640	.108	3
Yes	40	83.3	8	16.7			
No	10	83.3	2	16.7			
No access	54	79.4	14	20.6			
Had access but did Not use MED	11	68.8	5	31.3			

Chi-square analysis indicated that there is no statistically significant difference in *MEC support* for those who completed their DLDCD course and those who did not complete their course. However, those who took advantage of a MEC, 83.3% (n = 50), completed their DLDCD course at a slightly higher rate than both those who had no access to MEC, 79.4% (n = 54) or those who chose not to use the MEC, 68.8% (n = 11). Of the 41% of respondents (n = 60) who reported using a MEC while engaged in DLDCD, 80% (n = 48) reported feeling satisfied with their experience. This means that 20% of those who used MECs (n = 12) reported feeling that the MEC support available to them was inadequate. Chi-square analysis indicated that there is no statistically

significant difference in *adequacy of MEC support* for those students who completed their DLDCD course and those who did not complete their course. However, those who chose not to use the MEC although it was available to them had the lowest percentage of study participants, 68.8% (n = 11), complete their DLDCD course.

Adequate technical help

The independent variable *adequate technical help* is a categorical variable indicating the soldier-student's perception of adequate technical help, with 1 indicating strong disagreement, 2 disagreement, 3 neither disagreement nor agreement, 4 agreement, and 5 indicating strong agreement with the statement: There was adequate technical help for my DLDCD. Table 8 provides the results of the statistical analysis for this independent variable.

Table 8

Statistical Analysis of Adequate Technical Help (N = 144)

	n	%	Mean	Median	Mode	SD	Range	Min	Max
Descriptive:			3.67	4	4	1.016	4	1	5
Strongly disagree	6	4.2							
Disagree	15	10.4							
Neither disagree nor agree	24	16.7							
Agree	74	51.4							
Strongly agree	25	17.4							

	Course Completion				Asymptotic Significance (2-sided)	Phi and Cramer's V	df
	Yes		No				
	n	%	n	%			
Bivariate:					.010*	.254	2
Strongly disagree/disagree	12	57.1	9	42.9			
Neither disagree nor agree	18	75.0	6	25.0			
Agree	62	83.8	12	16.2			
Strongly disagree	23	92.0	2	8.0			

	B	S.E.	Wald (x^2)	Sig	Exp(B)	95% C.I. Lower(Upper)	P
Single predictor logistic regression:							.016
Reference group: disagree/strongly disagree	.288	.441	.426	.514	1.333		
Neither disagree nor agree	.811	.645	1.578	.209	2.250	.635(7.973)	
Agree or strongly agree	1.516	.527	8.277	.004	4.554	1.621(12.790	

*p<.05

Chi-square analysis indicated that there is a statistically significant difference in the soldier-student's perception of *adequate technical help* for those students who completed their DLDCD course and those who did not complete their course. Soldier-students who agreed or strongly agreed that they received adequate technical help were 4.5 [OR = 4.554] times more likely to complete their DLDCD course than those who disagreed or strongly disagreed that they received adequate technical help. Those who neither disagreed nor agreed that they received adequate technical help were 2.25 [OR = 2.250] more likely to complete their DLDCD course than those who disagreed or strongly disagreed that they received adequate technical help.

In response to an open-ended question, two study participants commented about *adequate technical help.* Both students stated that it was difficult to access technical support while deployed and suggested that those who make decisions about when the technical support team is available should take into account duty hours and the difference in time zones for deployed students.

Consistent Internet access

The independent variable *consistent Internet access* is a categorical variable indicating the soldier-student's experience of consistent Internet access, with 1 indicating strong disagreement, 2 disagreement, 3 neither disagreement nor agreement, 4 agreement, and 5 indicating strong agreement with the statement: I had consistent Internet access while engaged in DLDCD. Table 9 provides the details of statistical analysis for this variable.

Table 9

Statistical Analysis of Consistent Internet Access (N = 144)

	n	%	Mean	Median	Mode	SD	Range	Min	Max
Descriptive:			2.78	3	2	1.220	4	1	5
Strongly disagree	21	14.6							
Disagree	50	34.7							
Neither disagree nor agree	26	18.1							
Agree	34	23.6							
Strongly agree	13	9.0							

	Course Completion				Asymptotic Significance (2-sided)	Phi and Cramer's V	df
	Yes		No				
	n	%	n	%			
Bivariate:					.242	.171	3
Strongly disagree/disagree	54	76.1	17	23.9			
Neither disagree nor agree	20	76.9	6	23.1			
Agree	28	82.4	6	17.6			
Strongly agree	13	100.0	0	0.0			

Chi-square analysis indicated that there is no statistically significant difference in *consistent Internet access* for students who completed their DLDCD course and those who did not complete their course, although a higher percentage of those participants who agree, 82.4% (n = 28), and those who strongly agree, 100% (n = 13), completed their course compared to those who disagreed, 76.1% (n = 54), and those who were neutral, 76.9% (n = 20), about having consistent access.

In response to an open-ended question, twenty-two soldier students stated that better, more consistent Internet service will improve DLDCD experiences. One respondent stated, "The biggest complication was the spotty Internet access and reliability." Another student reported that "lack of access is why I had to drop the course half way through." However, one participant noted that lack of Internet consistency may be less of a problem for students now, reporting that his 2004-2005 deployment in Iraq was "when those services had not fully matured in the combat theater."

Combat environment

The independent variable C*ombat Environment* was measured using the Deployment Risk and Resilience Inventory-2 C (DRRI-2 C) subscale. It is a continuous variable indicating the soldier-student's perception of the conditions of day-to-day life while deployed. Scores can range from 14 to 70, with higher scores indicating a more stressful deployment environment. Scores for study participants are detailed in Table 10.

Table 10

Statistical Analysis of Combat Environment (DRRI-2 C) (N = 144)

	n	%	Mean	Median	Mode	SD	Range	Min	Max
Descriptive:			40.04	40	29	12.130	15	70	55
15 – 20	8	5.6							
21 – 30	24	16.8							
31 – 40	44	30.8							
41 – 50	40	28.0							
51 – 60	18	12.6							
61 – 70	10	7.0							

	Mean	SD	t	df	p
Bivariate:			1.792	142	.075
Course completion					
Yes (n = 115)	39.40	11.987			
No (n = 29)	43.62	12.240			

An independent-samples t-test indicated that there is no statistically significant difference in *combat environment* for those who completed their DLDCD course and those who did not complete their course. However, the lower the level of discomfort reported by the study participant on the DRRI-2 C survey, the greater the likelihood that the participant completed their DLDCD course.

Study participants were asked an open-ended question to expand the exploration of systems factors affecting *course completion.* Qualitative data related to military policy and procedure that interfered with successful completion of DLDCD included being moved from one base to another, not having enough "down time" to pursue course-related tasks, and no access to a "personal PC." One study participant reported that the

Morale, Welfare, & Recreation's (MWR) "rigid thumb drive policy" made his DLDCD learning experience more difficult. Two students hoped for a more predictable schedule while downrange and at the same time acknowledged that this was impossible.

Research Question #2 – Military Mezzo

What are the differences, if any, in the military mezzo variables of *unit members' support of DLDCD, unit leaders' support of DLDCD, role conflict, unit relationships (DRRI-2 K1),* and *unit support (DRRI-2 J)* for those students who completed their DLDCD course and those who did not complete their course?

The independent variable *military role conflict with DLDCD* and *DLDCD role conflict with military unit responsibilities* are the only military mezzo variables that have statistically significant differences ($p<.05$) for those students who completed their DLDCD course and those who did not complete their course. A detailed analysis for each military mezzo independent variable is outlined below.

Unit members' support of DLDCD

Unit members' support of DLDCD is a categorical variable indicating the soldier-student's perceived level of support of DLDCD from unit members, with 1 indicating strong disagreement, 2 disagreement, 3 neither disagreement nor agreement, 4 agreement, and 5 indicating strong agreement with the survey item: My military unit members supported my DLDCD. Table 11 provides the statistical analysis for this variable.

Table 11

Statistical Analysis of Unit Members' Support of DLDCD (N = 144)

	n	%	Mean	Median	Mode	SD	Range	Min	Max
Descriptive:			3.84	4	4	1.008	4	1	5
Strongly disagree	5	3.5							
Disagree	8	5.6							
Neither disagree nor agree	32	22.2							
Agree	59	41.0							
Strongly agree	40	27.8							

	Course Completion				Asymptotic Significance (2-sided)	Phi and Cramer's V	df
	Yes		No				
	n	%	n	%			
Bivariate:					.121	.201	3
Strongly disagree/disagree	8	61.5	5	38.5			
Neither disagree nor agree	23	71.9	9	28.1			
Agree	49	83.1	10	16.9			
Strongly agree	35	87.5	5	12.5			

Chi-square analysis indicated that there is no statistically significant difference in the military mezzo independent variable of *unit members' support of DLDCD* for those who completed their DLDCD course and those who did not complete their course. However, the higher the level of agreement with this statement, the more likely soldier-students completed their DLDCD course.

Unit leaders' support of DLDCD

The independent variable *unit leaders' support of DLDCD* is a categorical variable indicating the soldier-student's perceived support of DLDCD from unit leaders, with 1 indicating strong disagreement, 2 disagreement, 3 neither disagreement nor agreement, 4 agreement, and 5 indicating strong agreement with the statement: My military unit leader supported my DLDCD. The details of the statistical analysis for this independent variable are depicted in Table 12.

Table 12

Statistical Analysis of Unit Leaders' Support of DLDCD (N = 144)

	n	%	Mean	Median	Mode	SD	Range	Min	Max
Descriptive:			3.93	4	5	1.101	4	1	5
Strongly disagree	7	4.9							
Disagree	7	4.9							
Neither disagree nor agree	29	20.1							
Agree	47	32.6							
Strongly agree	54	37.5							

	Course Completion				Asymptotic Significance (2-sided)	Phi and Cramer's V	df
	Yes		No				
	n	%	n	%			
Bivariate:					.211	.177	3
Strongly disagree/disagree	10	71.4	4	28.6			
Neither disagree nor agree	20	69.0	9	31.0			
Agree	38	80.9	9	19.1			
Strongly agree	47	87.0	7	13.0			

Chi-square analysis indicated that there is no statistically significant difference in the military mezzo independent variable of *unit leaders' support of DLDCD* for those students who completed their DLDCD course and those who did not complete their course. However those who agree, 80.9% (n = 38), and those who strongly agree, 87.0% (n = 47), with this statement completed their DLDCD course at higher rates than those who disagreed, 71.4% (n = 10), that their unit leaders' supported their DLDCD.

In response to an open-ended survey question, two study participants reported that an increased level of *unit leader's support* of DLDCD would have improved their learning experience. This is consistent with the quantitative data collected for this study.

Role conflict

To measure the concept of *role conflict,* participants were asked to what degree their military responsibilities interfered with DLDCD and to what degree their DLDCD interfered with their military responsibilities. The responses to these two questions are compared in Table 13. Study participants responded with 1 indicating strong

disagreement, 2 disagreement, 3 neither disagreement nor agreement, 4 agreement, and 5 indicating strong agreement to the following statements: My responsibilities as a member of a military unit interfered with my DLDCD, and my DLDCD interfered with my responsibilities as a member of a military unit.

Table 13

Statistical Analysis of Role Conflict (N = 144)

	n	%	Mean	Median	Mode	SD	Range	Min	Max
Descriptive:									
Military responsibilities interfered with DLDCD			3.11	3	4	1.183	4	1	5
Strongly disagree	15	10.4							
Disagree	34	23.6							
Neither disagree nor agree	29	20.1							
Agree	52	36.1							
Strongly agree	14	9.7							
DLDCD responsibilities interfered with unit responsibilities			2.38	2	2	1.158	4	1	5
Strongly disagree	38	26.4							
Disagree	50	34.7							
Neither disagree nor agree	25	17.4							
Agree	26	18.1							
Strongly agree	5	3.5							

	Course Completion				Asymptotic Significance (2-sided)	Phi and Cramer's V	df
	Yes		No				
	n	%	n	%			
Bivariate:							
Military responsibilities interfered with DLDCD					.021*	.259	3
Strongly disagree/disagree	43	87.8	6	12.2			
Neither disagree nor agree	23	79.3	6	20.7			
Agree	42	80.8	10	19.2			
Strongly agree	7	50.0	7	50.0			
DLDCD responsibilities interfered with unit responsibilities					.030*	.249	3
Strongly disagree	31	81.6	7	18.4			
Disagree	43	86.0	7	14.0			
Neither disagree No agree	22	88.0	3	12.0			
Agree/strongly Agree	19	61.3	12	38.7			

	B	S.E.	Wald (x^2)	Sig	Exp(B)	95% C.I. Lower(Upper)	p
Single predictor logistic regression: Military responsibilities interfered with DLDCD							.039
Reference group: Disagree/strongly disagree	1.969	.436	20.423	.000	7.167		
Neither disagree nor agree	-.626	.633	.979	.323	.535	.155(1.848)	
Agree	-.534	.560	.910	.340	.586	.196(1.757)	
Strongly agree	-1.969	.690	8.155	.004	.140	.036(.539	
DLDCD responsibilities interfered with unit responsibilities							.043
Reference group: Strongly disagree	1.488	.418	12.645	.000	4.429		
Disagree	.327	.584	.314	.575	1.387	.441(4.358)	
Neither disagree nor agree	.504	.744	.459	.498	1.656	.385(7.121)	
Agree/strongly agree	-1.029	.558	3.401	.065	.358	.120(1.067)	

*p<.05

Chi-square analysis indicated that both role conflict variables have statistically significant differences for those who completed their DLDCD course and those who did not complete their course. Those who strongly agree that military responsibilities interfere with DLDCD course completion were over seven [OR = 7.14] times less likely to complete their DLDCD course than those who disagree or strongly disagree with this statement. Those who agree or strongly agree that DLDCD responsibilities interfere with military unit responsibilities were over 2.5 [OR = 2.79] times less likely to complete their DLDCD course than those who strongly disagree with this statement.

Unit relationships (DRRI – 2, subscale K1)

The military mezzo independent variable *unit relationships,* as measured by the Deployment Risk and Resiliency – 2, subscale K1 (DRRI-2K1), is a continuous variable indicating the soldier-student's quality of relationships with unit members during deployment. Scores can range from 8 to 32, with lower scores indicating more positive relationships. The detailed statistical analysis of DRRI-2 K1 responses is captured in Table 14.

Table 14

Statistical Analysis of Unit Relationships (DRRI-2 K1) (N = 144)

	n	%	Mean	Median	Mode	SD	Range	Min	Max
Descriptive:			14.17	13	8	5.851	24	8	32
8 – 11	60	41.6							
12 – 15	32	22.3							
16 – 19	27	18.9							
20 – 23	14	9.8							
24 – 27	6	4.2							
28 – 32	5	3.5							

	Mean	SD	t	df	p
Bivariate:			-.846	142	.399
Course completion					
Yes (*n* = 115)	14.37	5.779			
No (*n* = 29)	13.34	6.166			

The results of an independent-samples t-test indicated that there is no statistically significant difference in the military mezzo independent variable of *unit relationships,* as measured by DRRI-2 K1, for those who completed their DLDCD course and those who did not complete their course.

Unit support (DRRI – 2, subscale J)

The military mezzo independent variable *unit support,* as measured by the Deployment Risk and Resiliency – 2, subscale J (DRRI-2 J), is a continuous variable indicating the soldier-student's perception of level of unit support. Scores can range from 12 to 60, with higher scores indicating a higher level of support. Table 15 details the statistical analysis for this independent variable.

Table 15

Statistical Analysis of Unit Support (DRRI-2 J) (N = 144)

	n	%	Mean	Median	Mode	SD	Range	Min	Max
Descriptive:			47.63	48	60	10.431	46	14	60
14 – 28	9	6.3							
30 – 36	10	7.0							
37 – 41	10	7.0							
42 – 46	25	17.5							
47 – 51	39	27.2							
52 – 56	16	11.2							
57 – 60	35	24.3							

	Mean	SD	t	df	p
Bivariate:			-.619	142	.537
Course completion					
Yes (*n* = 115)	47.90	10.162			
No (*n* = 29)	13.34	11.565			

An independent-samples t-test indicated that there is no statistically significant difference in the independent variable *unit support,* as measured by the DRRI-2 J subscale, for those who completed their DLDCD course and those who did not complete their course. However, the higher the DRRI-2 J score, indicating a higher level of unit support, the greater the likelihood that the participant completed their DLDCD course.

Research Question #3 – Military Micro

What are the differences, if any, in the military micro independent variables of *number of deployment while engaged in DLDCD, military affiliation, military rank,* and *military occupation* for those who completed their DLDCD course and those who did not complete their course*?*

There are no military micro independent variables that demonstrated a statistically significant difference for those who completed their DLDCD course and those who did not complete their course. Each military micro variable is explored in detail below.

Number of deployment while engaged in DLDCD

The *number of deployment while engaged in DLDCD* is a categorical variable and is defined as the number of times that the soldier student was deployed to a combat area prior to and including the DLDCD experience. Table 16 captures the statistics related to this independent variable.

Table 16

Statistical Analysis of Number of Deployment while Engaged in DLDCD (N = 144)

	n	%	Mean	Median	Mode	SD	Range	Min	Max
Descriptive:			2.03	2	1	1.348	10	1	11
First	62	43.1							
Second	48	33.3							
Third	15	10.4							
Fourth or later	19	13.2							

	Course Completion				Asymptotic Significance (2-sided)	Phi and Cramer's V	df
	Yes		No				
	n	%	n	%			
Bivariate:					.644	.078	2
First	49	79.0	13	21.0			
Second	37	77.1	11	22.9			
Third or later	29	85.3	5	14.7			

Chi-square analysis indicated that there is no statistically significant difference in the independent variable of *number of deployment while engaged in DLDCD* for those who completed their DLDCD course and those who did not complete their course.

Military affiliation

The military micro independent variable of *military affiliation* is categorical and indicates the specific active duty enlistment (Air Force, Army, Coast Guard, Marine Corps, Navy) or citizen soldier (National Guard, Reserves) affiliation. Table 17 provides a statistical analysis for this independent variable.

Table 17

Statistical Analysis of Military Affiliation (N = 144)

	n	%	Mean	Median	Mode	SD	Range	Min	Max
Descriptive:			2.60	2	1	2.056	6	1	7
					Military Community Comparison*				
					n		%		
Army	71	49.3			486,937		22.6		
Marine Corps	15	10.4			183,417		8.6		
Navy	17	11.8			323,334		15.0		
Air Force	20	13.9			307,326		14.2		
Reserves	4	2.8			362,670		16.8		
National Guard	17	11.8			453,437		21.0		

*From dmdc.osd.mil/appj/dwp/dwp_reports.jsp, retrieved on March 31, 2016

	Course Completion				Asymptotic Significance (2-sided)	Phi and Cramer's V	df
	Yes		No				
	n	%	n	%			
Bivariate:					.194	.205	4
Army	58	81.7	13	18.3			
Marine Corps	10	66.7	5	33.3			
Navy	15	88.2	2	11.8			
Air Force	18	90.0	2	10.0			
Citizen Soldiers	14	66.7	7	33.3			

Chi-square analysis indicated that there is no statistically significant difference in the independent variable *military affiliation* for those who completed their DLDCD course and those who did not complete their course. However, those affiliated with the Air Force completed their course at a higher rate, 90% (n = 18), while lower rates of completion were noted for those affiliated with the Marine Corps, 66.7% (n = 10), and Citizen Soldiers (Reserves and National Guard), 66.6% (n = 14).

Military rank

The independent dichotomous variable of *military rank* indicates if the soldier student is either enlisted military personnel or officer rank. Table 18 provides this information with a comparison to the military community population.

Table 18

Statistical Analysis of Military Rank (N = 144)

	n	%	Mean	Median	Mode	SD	Range	Min	Max
Descriptive:			1.24	1	1	.614	2	1	3

	Military Community Comparison*	
	n	%
Enlisted	1,838,449	83.4
Warrant Officer		
Commissioned Officer	366,390	16.6

*From Defense Manpower Requirements Report – Fiscal Year 2014

	Course Completion				Asymptotic Significance (2-sided)	Phi and Cramer's V	df
	Yes		No				
	N	%	n	%			
Bivariate:					.537	.051	1
Enlisted	98	79.0	26	21.0			
Officer	17	85.0	3	15.0			

Chi-square analysis indicated that there is no statistically significant difference in the independent variable *military rank* for those who completed their DLDCD course and those who did not complete their course. However, the officers' rate of course completion, 85% (*n* = 17), is higher than the rate of enlisted soldier-students, 79.0% (*n* = 98).

Military occupation

This independent categorical variable indicates the soldier student's military occupation while engaged in DLDCD. The occupations were grouped using DoD coding. The largest group of enlisted study participants who engaged in DLDCD were classified as infantry gun crew (*n* = 32). Other military occupations represented in this sample included communications and intelligence (*n* = 21), healthcare (*n* = 15), and administrative support (*n* = 10). Seven study participants each from the following occupational categories participated in this study: electrical equipment repair, mechanical equipment repair, and service and supply. Other military occupations represented include military police (*n* = 6), Explosive Ordnance Disposal, (*n* = 4), and technical or allied specialist (*n* = 3). The following military occupations were

represented by one study participant each: crafts worker, non-occupational, munitions specialist, motor transport, human resources, nuclear biological chemical specialist, detainee operations, psychological operations, forward observer, aviation electrician, logistics, and air transportation.

Study participants who identified as warrant officer or commissioned officer reported being employed in the following military occupations while engaged in DLDCD: tactical operations officer (*n* = 5), intelligence officer (*n* = 4), engineering or maintenance officer (*n* = 3), general or executive officer (*n* = 2), test pilot (*n* = 2), scientist or professional (*n* = 1), and administrator (*n* = 1). Table 19 provides the details of bivariate analysis for the independent military micro variable of *military occupation.*

Table 19

Bivariate Analysis of Military Occupation (N = 144)

	Course Completion				Asymptotic Significance (2-sided)	Phi and Cramer's V	df
	Yes		No				
	n	%	n	%			
Enlisted:					.430	.203	6
Infantry, munitions	34	72.3	13	27.7			
Equipment repair	18	85.7	3	14.3			
Communications and Intelligence	3	60.0	2	40.0			
Healthcare	21	91.3	2	8.7			
Technical Specialists	14	82.4	3	17.6			
Service and Transportation	8	72.7	3	27.3			
Officer:					.582	.087	1
General - Executive	4	100.0	0	0.0			
Specialists	13	81.3	3	18.8			

Chi-square analysis indicated that there is no statistically significant difference in *military occupation* for those who completed their DLDCD course and those who did not complete their course, although healthcare soldier-students completed their DLDCD course at a higher rate, 91.3% (*n* = 21), than infantry or munitions workers, 72.3% (*n* = 34).

Research Question #4 – Higher Education Macro

What are the differences, if any, in the higher education macro independent variables of *higher education institution* and *pace of DL course* for those who completed their DLDCD course and those who did not complete their course?

Neither of the higher education macro independent variables achieved statistical significance in this study. The independent variable *higher education institution* was then collapsed to explore the influence of higher education institution presence at a Military Education Center (MEC) as identified on GoArmyEd and it's for-profit versus non-profit status.

Higher education institution

The largest percentage of study participants reported attending American Military University, 21.4% (n = 28). Nearly 10% (n = 13) of the soldier-students attended the University of Maryland and 7.6% (n = 10) attended Embry Riddle Aeronautical University. Slightly over 6%, (n = 8) of the participants attended Central Texas University and 4.6% (n = 6) identified their higher education institution as "military training." Three students each attended Trident University International or the University of Phoenix. Two students each attended one of the following higher education institutions: Columbia College, Grantham University, Henley Putnam Online University, Missouri Baptist University, Norwich University, Park University, Pennsylvania State University, Pierce College, Thomas Edison State College, or Troy University. Each of the following higher education institutions were represented by one student each in this exploratory study: Allied American University, American Intercontinental University, Arizona State University, Ashford University, Bellevue University, Brigham Young

University, Campbell University, City College of Chicago, Coastline Community College, College of DuPage, Colorado Technical University, Columbus State University, Community College of the Air Force, Coursera, Eastern Kentucky University, Excelsior College, Grand Canyon University, Hawaii Pacific University, Kansas State University, Liberty Theological Seminary, Methodist University, Miami Dade College, Modesto Junior College, Northcentral University, Penn Foster College, Southern Illinois University, Southwestern University, Tidewater Community College, University of Connecticut, University of Illinois at Chicago, University of Missouri, University of Northern Colorado, University of Oklahoma, University of Tennessee, University of Texas at Austin, University of the Cumberlands, University of Wisconsin at Green Bay, University of Wisconsin at Stout, University of Wisconsin at Whitewater, Wayland Baptist University or Western Connecticut State University.

Table 20 details the analysis of the independent variable *higher education institution* exploring two sub-categories. The analysis explores differences between non-profit and for-profit higher education institutions. Differences between those higher education institutions with a Military Education Center presence and those institutions not having representation at a MEC (as identified by GoArmyEd) are also explored.

Table 20

Statistical Analysis of Higher Education Institution (N = 144)

	n	%	Mean	SD
Descriptive				
For Profit:			.3360	.47424
Yes	42	33.6		
No	83	66.4		
MEC presence:			.3435	.47670
Yes	45	34.4		
No	86	65.6		

	Course Completion				Asymptotic Significance (2-sided)	Phi and Cramer's V	df
	Yes		No				
	n	%	n	%			
Bivariate							
For Profit					.136	.133	1
Yes	32	76.2	10	23.8			
No	72	86.7	11	13.3			
MEC presence					.080	.153	1
Yes	41	91.1	4	8.9			
No	68	79.1	18	20.9			

Neither subcategory achieves statistical significance. However, soldier-students who attended non-profit higher education institutions, 86.7% (n = 72) completed their DLDCD course at a higher rate than those students who attended for-profit institutions, 76.2% (n = 32). Those students who attended higher education institutions with a MEC presence, 91.1% (n = 41) completed their DLDCD course at a higher rate than those students who did not have a representative of their higher education center present at their MEC, 79.1% (n = 68).

In responses to an open-ended question on the survey, three study participants wrote about their impression that higher education administrators, not their course Instructors, "fail to understand that learning while deployed is very difficult and sometimes events happen that are outside of a military member's control," making timely course completion impossible.

Although not specifically asked on the DLDCD questionnaire, one student felt that he needed "better library access" and another would have liked to have a wider

variety of courses offered online. One student shared that higher education administration needs to address the "stigma around a distance learning degree – it is still negative." One study participant expressed some frustration with the course Instructor and classmates, and stated "a lot of slackers were allowed to progress." This soldier-student held university administrators accountable, stating that the university "needs to be more selective."

Pace of distance learning course

The categorical independent variable of *pace of DL course* indicates the pace of the DL course – standard university semester, five - eight week accelerated course, self-paced/competency-based module, Massive Open Online Course (MOOC), or ten weeks – five modules. Table 21 details the analysis of this independent variable.

Table 21

Statistical Analysis of Pace of DL Course (N = 144)

	n	%	Mean	Median	Mode	SD	Range	Min	Max
Descriptive:			2.06	2	2	.863	4	1	5
Standard university semester	34	23.6							
5 – 8 week accelerated course	77	53.5							
Self-paced or competency-based modules	27	18.8							
Massive Open Online Course (MOOC)	3	2.1							
Ten weeks – five modules	2	1.4							

	Course Completion				Asymptotic Significance (2-sided)	Phi and Cramer's V	df
	Yes		No				
	n	%	n	%			
Bivariate:					.178	.155	2
Standard university semester	27	79.4	7	20.6			
5 – 10 week modules	69	84.1	13	15.9			
Self-paced or competency-based modules	19	67.9	9	32.1			

The chi-square analysis indicated that there is no statistically significant difference in *pace of DL course* for those students who completed their DLDCD course and those who did not complete their course. However, those students who worked on 5 – 10 week modules, 84.1% (n = 69), completed their course at a higher rate than those who were engaged in self-paced or competency-based modules, 67.9% (n = 19).

Three study participants offered specific input regarding the *pace of the DL course.* One student noted that the "Deployment Operational Tempo tends to be slower in the winter. It would have been nice if the semester wasn't in the typical stateside semester schedule and followed this instead." The other students pointed out that "last minute mission changes" require a more flexible pace. "Deployed students' situations can change at a moment's notice."

Research Question #5 – Higher Education Mezzo

What are the differences, if any, in the higher education mezzo variables of *frequency of Instructor contact, timeliness of Instructor response, Instructor flexibility, DL classmate support, ability to engage in DL teamwork,* and *DL course* for those soldier-students who completed their distance learning course while deployed and those who did not complete their course?

The higher education mezzo independent variables of *frequency of Instructor contact, Instructor flexibility,* and *ability to engage in DL teamwork* are statistically significant higher education mezzo independent variables. The details of this data analysis are captured below.

Frequency of Instructor contact

The independent categorical variable *frequency of Instructor contact* is the soldier student's report of frequency of Instructor contact – multiple times per day, about once a day, 3 – 4 times per week, 1 – 2 times per week, less than once per week, or never. Table 22 provides the details of the statistical analysis for this independent variable.

Table 22

Statistical Analysis of Frequency of Instructor Contact (N = 144)

	n	%	Mean	Median	Mode	SD	Range	Min	Max
Descriptive:			1.99	2	2	1.071	5	0	5
Never	14	9.7							
Less than once per week	29	20.1							
1 – 2 times per week	56	38.9							
3 – 4 times per week	37	25.7							
About once a day	6	4.2							
Multiple times per day	2	1.4							

	Course Completion				Asymptotic Significance (2-sided)	Phi and Cramer's V	df
	Yes		No				
	n	%	n	%			
Bivariate:					.024*	.256	3
Never/less than once per week	29	67.4	14	32.6			
1 – 2 times per week	44	78.6	12	21.4			
3 – 4 times per week	35	94.6	2	5.4			
Daily/multiple times a day	7	87.5	1	12.5			

	B	S.E.	Wald (x^2)	Sig	Exp(B)	95% C.I. Lower(Upper)	p
Single predictor logistic regression:							.014
Reference group: never/less than once per week	.728	.325	5.007	.025	2.071		
1 – 2 times per week	.571	.460	1.538	.215	1.770	.718(4.364	
3 – 4 times per week	2.134	.797	7.177	.007	8.448	1.773(40.252)	
Daily or more	1.218	1.117	1.187	.276	3.379	.378(30.202)	

*p<.05

Chi-square analysis indicated that there is a statistically significant difference in the higher education mezzo independent variable of *frequency of Instructor contact* for those who completed their DLDCD course and those who did not complete their course. Study participants who reported that they interacted with their course Instructor 3 – 4 times per week were eight [OR = 8.448] times more likely to complete their DLDCD

course than those who reported that they interacted with their Instructor less than once per week or not at all. Those who reported interacting with their Instructor daily or more were only three [OR = 3.379] times more likely to complete their DLDCD course than those who reported interacting with the Instructor less than once per week or not at all.

Timeliness of Instructor response

The independent categorical variable of *timeliness of Instructor response* indicates how quickly the Instructor responded to the soldier student's questions: the same day, the next day, within 2 – 3 days, after 3 or more days, or never. Results of the statistical analysis for this variable are detailed in Table 23.

Table 23

Statistical Analysis of Timeliness of Instructor Response (N = 144)

	n	%	Mean	Median	Mode	SD	Range	Min	Max
Descriptive:			2.97	3	2	1.054	5	0	5
Never	1	.7							
After 3 or more days	1	.7							
Within 2 – 3 days	54	37.5							
The next day	53	36.8							
The same day	16	11.1							
Did not email Instructor	19	13.2							

	Course Completion				Asymptotic Significance (2-sided)	Phi and Cramer's V	df
	Yes		No				
	n	%	n	%			
Bivariate:					.189	.182	3
Two or more days	44	78.6	12	21.4			
The next day	45	84.9	8	15.1			
The same day	14	87.5	2	12.5			
Did not email Instructor	12	63.2	7	36.8			

Chi-square analysis indicated that there is no statistically significant difference in the independent variable of *timeliness of Instructor response* for those study participants who completed their DLDCD and those who did not complete their course. However, those soldier-students who received a reply from their Instructor on the same day, 87.5% (n = 14) completed their DLDCD course at a slightly higher rate than those who did not

hear from their Instructor until the next day or longer. Those who did not choose to interact with their Instructor at all had the lowest rate of course completion, 63.2% (*n* = 12).

Instructor flexibility

The independent categorical variable of *Instructor flexibility* is defined as the solider student's perception of Instructor flexibility with 1 indicating strong disagreement, 2 disagreement, 3 neither disagreement nor agreement, 4 agreement, and 5 indicating strong agreement to the survey item: My Instructor provided the level of flexibility I needed for my DLDCD. The details of the statistical analysis for this variable are outlined in Table 24.

Table 24

Statistical Analysis of Instructor Flexibility (N = 144)

	n	%	Mean	Median	Mode	SD	Range	Min	Max
Descriptive:			4.03	4	4	.869	4	1	5
Strongly disagree	2	1.4							
Disagree	5	3.5							
Neither disagree nor agree	25	17.4							
Agree	67	46.5							
Strongly agree	45	31.3							

	Course Completion				Asymptotic Significance (2-sided)	Phi and Cramer's V	df
	Yes		No				
	n	%	n	%			
Bivariate:					.000**	.420	2
Strongly disagree or disagree	5	71.4	2	28.6			
Neither disagree nor agree	11	44.0	14	56.0			
Agree or strongly agree	99	88.4	13	11.6			

	B	S.E.	Wald (x^2)	Sig	Exp(B)	95% C.I. Lower(Upper)	p
Single predictor logistic regression:							.000
Reference group: disagree/strongly disagree	.916	.837	1.199	.273	2.500		
Neither disagree nor agree	-1.157	.929	1.554	.213	.314	.051(1.940)	
Agree or strongly agree	1.114	.887	1.576	.209	3.046	.535(17.334)	

**p<.005

Chi-square analysis indicated that there is a statistically significant difference in *Instructor flexibility* for those study participants who completed their DLDCD course and those who did not complete their course. Soldier-students who agreed or strongly agreed that their course Instructor was flexible were three [OR = 3.046] times more likely to complete their DLDCD course than those who disagreed or strongly disagreed that their course Instructor was flexible.

In response to an open-ended survey question, study participants expressed concern regarding a lack of flexibility, noting the importance of being able to complete tasks at any time during a 24 hour day because of time zone differences. Respondents expressed frustration with the Instructor requirement of logging in at a certain time of day to participate in classroom discussion. In addition to time zone differences, mission requirements can interfere with classroom participation. The concern about time zones was also linked with group projects, an assignment that several participants found extremely frustrating because of their other responsibilities.

DL classmate support

The independent categorical variable of *DL classmate support* indicates the soldier student's experience of DL classmate support, with 1 indicating strong disagreement, 2 disagreement, 3 neither disagreement nor agreement, 4 agreement, and 5 indicating strong agreement to the survey item: My DL classmates supported my DLDCD. Table 25 details the statistical analysis for this independent variable.

Table 25

Statistical Analysis of DL Classmate Support (N = 144)

	n	%	Mean	Median	Mode	SD	Range	Min	Max
Descriptive:			3.80	4	3	.866	4	1	5
Strongly disagree	1	.7							
Disagree	4	2.8							
Neither disagree nor agree	53	36.8							
Agree	51	35.4							
Strongly agree	35	24.3							

	Course Completion				Asymptotic Significance (2-sided)	Phi and Cramer's V	df
	Yes		No				
	n	%	n	%			
Bivariate:					.065	.195	2
Strongly disagree/disagree	3	60.0	2	40.0			
Neither disagree nor agree	38	71.7	15	28.3			
Agree/strongly agree	74	86.0	12	14.0			

There is no statistically significant difference in the independent variable of *DL classmate support* for those who completed their DLDCD course and those who did not complete their course. However, those who agreed or strongly agreed that they experienced classmate support completed their course at a higher rate, 86% (n = 74), than those who neither disagreed nor agreed, 71.7% (n = 38) or those who disagreed or strongly disagreed, 60% (n = 3), with this statement.

Ability to engage in DL teamwork

The independent categorical variable of *ability to engage in DL teamwork* indicates the soldier student's ability to engage in DL teamwork, with 1 indicating strong disagreement, 2 disagreement, 3 neither disagreement nor agreement, 4 agreement, and 5 indicating strong agreement with the following survey item: I was able to actively participate in learning through collaboration and teamwork with my DL classmates. The statistical analysis for this independent variable is detailed in Table 26.

Table 26

Statistical Analysis of Ability to Engage in DL Teamwork (N = 144)

	n	%	Mean	Median	Mode	SD	Range	Min	Max
Descriptive:			3.63	4	4	1.044	4	1	5
Strongly disagree	6	4.2							
Disagree	16	11.1							
Neither disagree nor agree	31	21.5							
Agree	64	44.4							
Strongly agree	27	18.8							

	Course Completion				Asymptotic Significance (2-sided)	Phi and Cramer's V	df
	Yes		No				
	n	%	n	%			
Bivariate:					.044*	.237	3
Strongly disagree or disagree	15	68.2	7	31.8			
Neither disagree nor agree	21	67.7	10	32.3			
Agree	57	89.1	7	10.9			
Strongly agree	22	81.5	5	18.5			

	B	S.E.	Wald (x^2)	Sig	Exp(B)	95% C.I. Lower(Upper)	p
Single predictor logistic regression:							.044
Reference group: disagree/strongly disagree	.762	.458	2.772	.096	2.143		
Neither disagree nor agree	-.020	.598	.001	.973	.980	.304(3.162)	
Agree	1.335	.608	4.818	.028	3.800	1.154(12.517)	
Strongly agree	.719	.675	1.138	.286	2.053	.547(7.702)	

**p<.05*

Chi-square analysis indicated that there is a statistically significant difference in the soldier-student's ability to engage in DL teamwork for those who completed their DLDCD course and those who did not complete their course. Those who strongly agreed that they were able to engage in classmate collaboration and teamwork were two [OR = 2.053] times more likely to complete their course than those who disagreed or strongly disagreed with this statement while those who agreed with this statement regarding teamwork were 3.8 [OR = 3.800] times more likely to complete their course.

This direct quote from a soldier-student indicates a very low desire to connect with classmates and appears to reflect a strong sense of role conflict.

> The required "chat" boards are absolutely horrendous. They add nothing at all to my learning. I do not care at all about Internet strangers.

> No information I posted was true about me, and I ignored everything other students had to say. If it was not required and a part of my grade, I would never use the chat rooms, message boards, discussion forums, etc. The actual course material is all I care about – those chats do nothing but take away from time I could use to eat, sleep, study, etc.

DL course

This independent categorical variable is the name of the course that the DL student was enrolled in while engaged in DLDCD. Participants were enrolled in a wide range of courses. Ten students, 7.6%, were enrolled in multiple courses. Ten students, 7.6%, were enrolled in a Psychology course, 6.9% (n = 9) were enrolled in an English Composition course, 6.1% (n = 8) were enrolled in a History course, and 4.6% (n = 6) studied Algebra. Four students, 3.1%, were enrolled in either a Criminal Justice or Math course. Three students, 2.3%, studied one of the following courses: Accounting, Aviation Legislation, Economics, an Intelligence course, or Sociology. Two study participants, 1.5%, were enrolled in one of these courses: Aerospace, American Government, Business Ethics, Business Management, Education Administration, German, Public Policy or Unit Leadership.

One study participant each enrolled in the following courses: Advanced Surveillance, Art Appreciation, Astronomy, Biochemistry, Calculus, Captain's Career course, Cultural Understanding, Emergency Management, Engineering Management, Environmental Management, Finance, Geography of Tourism, Hermeneutics, Human Resource Management, Information Assurance, Information Technology, Instructional System Design, International Business, Kinesiology, Medical Terminology, Military History, Morals and Ethics, Nutrition, Pharmacology, Pharmacy Technician certification, Plumbing, Political Science, Project Management, Psychology of Leadership, Religion,

Report Writing and Advance Work, Research Writing, Strategic Studies, Terminal and Port Security, The Fall of Yugoslavia, Theories of Personality, Tort Law, Trigonometry, or World Politics. In addition, one student worked on a thesis and another was enrolled in a higher education course in order to work on a Criminal Justice capstone project.

Courses were then collapsed into three sub-categories: standard university courses, military courses, and multiple courses. The results of this statistical analysis are outlined in Table 27.

Table 27

Statistical Analysis of DL Course (N = 144)

	n	%	Mean	Median	Mode	SD	Range	Min	Max
Descriptive:			1.2846	1	1	.60761	2	1	3
Standard university	98	79.7							
Military	15	12.2							
Multiple	10	8.1							

	Course Completion				Asymptotic Significance (2-sided)	Phi and Cramer's V	df
	Yes		No				
	n	%	n	%			
Bivariate:					.286	.143	2
Standard university	78	79.6	20	20.4			
Military	12	80.0	3	20.0			
Multiple	10	100.0	0	0.0			

There is no statistically significant difference in the independent variable of *DL course* for those students who completed their DLDCD course and those who did not complete their course. However, those students who took multiple courses completed their courses at a higher rate, 100.0% (n = 10), than those who took a single standard university course, 79.6% (n = 78), or those who were engaged in military training, 80.0% (n = 12).

Research Question #6 – Higher Education Micro

What are the differences, if any, in the higher education micro independent variables of *DL online hours per week, DL offline hours per week, comfort with DL*

course options, ability to manage academic workload, ability to meet academic deadlines, higher education goal related to DLDCD, program completion related to DLDCD, expectations of DLDCD, satisfaction with DLDCD, willingness to engage in DLDCD again, degree aspiration, and *level of education completed* for those soldier-students who completed their DLDCD course and those who did not complete their course?

Six higher education micro independent variables demonstrated a statistically significant difference for those who completed their DLDCD course and those who did not complete their course: *comfort with DL course options,* the *ability to manage academic workload,* the *ability to meet academic deadlines, program completion related to DLDCD, expectations of DLDCD,* and *satisfaction with DLDCD.* A detailed description of the analysis for each higher education micro independent variable follows.

DL online and offline hours per week

These independent categorical variables are the number of reported hours spent online and offline related to DLDCD: none, 1 - 3 hours, 4 – 6 hours, 7 – 10 hours, 11 – 15 hours, or more than 15 hours. The details of the statistical analysis for these variables are outlined in Table 28.

Table 28

Statistical Analysis of DL Online and Offline Hours per Week (N = 144)

	n	%	Mean	Median	Mode	SD	Range	Min	Max
Descriptive:									
Online			1.80	2	1	1.048	5	0	5
None	8	5.6							
1 – 3 hours	55	38.2							
4 – 6 hours	52	36.1							
7 – 10 hours	20	13.9							
11 – 15 hours	5	3.5							
More than 15 hours	4	2.8							
Offline			2.09	2	2	1.194	5	0	5
None	8	5.6							
1 – 3 hours	38	26.4							
4 – 6 hours	56	38.9							
7 – 10 hours	26	18.1							
11 – 15 hours	7	4.9							
More than 15 hours	9	6.3							

	Course Completion				Asymptotic Significance (2-sided)	Phi and Cramer's V	df
	Yes		No				
	n	%	n	%			
Bivariate:							
Online					.356	.120	2
None to 3 hours	47	74.6	16	25.4			
4 – 6 hours	43	82.7	9	17.3			
7 or more hours	25	86.2		4			
Offline					.249	.139	2
None to 3 hours	33	71.7	13	28.3			
4 – 6 hours	47	83.9	9	16.1			
7 or more hours	35	83.3	7	16.7			

Chi-square analysis indicated that there is no statistically significant difference in either the soldier-student's online or offline hours per week for those who completed their DLDCD course and those who do not complete their course. However, those who were engaged in learning online for seven or more hours per week, 86.2% (n = 25), completed their course at a higher rate than those who spent 0 – 3 hours per week, 74.6% (n = 47) online. Those who engaged in learning offline for 4 – 6 hours, 83.9% (n = 47), or 7 or more hours, 83.3% (n = 35) completed their DLDCD course at higher rates than those who engaged in offline learning for 0 – 3 hours per week, 71.7% (n = 33).

Comfort with DL course options

The independent variable of *comfort with DL course options* is categorical and defined as the soldier student's report of comfort with DL course options, with 1 indicating strong disagreement, 2 disagreement, 3 neither disagreement nor agreement, 4 agreement, and 5 strong agreement in response to the survey item: I feel comfortable using DL course options (e.g. messaging, drop box, discussion forums, resources, etc.) on the course website used for my DLDCD. The analysis for this independent variable is detailed in Table 29.

Table 29

Statistical Analysis of Comfort with DL Course Options (N = 144)

	n	%	Mean	Median	Mode	SD	Range	Min	Max
Descriptive:			4.36	4.50	5	.725	3	2	5
Disagree	1	.7							
Neither disagree nor agree	18	12.5							
Agree	53	36.8							
Strongly agree	72	50.0							

	Course Completion				Asymptotic Significance (2-sided)	Phi and Cramer's V	df
	Yes		No				
	n	%	n	%			
Bivariate:					.029*	.214	1
Disagree/neutral	11	57.9	8	42.1			
Agree	43	81.1	10	18.9			
Strongly agree	61	84.7	11	15.3			

	B	S.E.	Wald (x^2)	Sig	Exp(B)	95% C.I. Lower(Upper)	p
Single predictor logistic regression:							.052
Reference group: disagree/neutral	.318	.465	.470	.493	1.375		
Agree	1.140	.582	3.833	.050	3.127	.999(9.792)	
Strongly agree	1.395	.569	6.017	.014	4.033	1.323(12.290)	

*p<.05

Chi-square analysis indicated that there is a statistically significant difference in *comfort with DL course options* for those who completed their DLDCD course and those who did not complete their course. Study participants who strongly agreed that that they were comfortable with DL course options were four [OR = 4.033] times more likely to

complete their course than those who disagreed or were neutral regarding their comfort level with course options. Those who agreed were three [OR = 3.127] times more likely to complete their DLDCD course than those who disagreed or were neutral that they were comfortable with their DL course options.

Ability to manage academic workload

The independent variable of *ability to manage academic workload* is categorical and defined as the soldier student's perception of ability to manage academic workload, with 1 indicating strong disagreement, 2 disagreement, 3 neither disagreement nor agreement, 4 agreement, and 5 indicating strong agreement in response to the following survey item: I was able to manage the academic workload while engaged in DLDCD. The details of the statistical analysis for this variable are outlined in Table 30 below.

Table 30

Statistical Analysis of Able to Manage Academic Workload (N = 144)

	n	%	Mean	Median	Mode	SD	Range	Min	Max
Descriptive:			3.65	4	4	.888	4	1	5
Strongly disagree	3	2.1							
Disagree	14	9.7							
Neither disagree nor agree	30	20.8							
Agree	80	55.6							
Strongly agree	17	11.8							

	Course Completion				Asymptotic Significance (2-sided)	Phi and Cramer's V	df
	Yes		No				
	n	%	n	%			
Bivariate:					.024*	.227	2
Strongly disagree or disagree	10	58.8	7	41.2			
Neither disagree nor agree	22	73.3	8	26.7			
Agree or strongly agree	83	85.6	14	14.4			

	B	S.E.	Wald (x^2)	Sig	Exp(B)	95% C.I. Lower(Upper)	p
Single predictor logistic regression:							.034
Reference group: Strongly disagree or disagree	.357	.493	.524	.469	1.429		
Neither disagree nor agree	.655	.643	1.038	.308	1.925	.546(6.787)	
Agree or strongly agree	1.423	.571	6.206	.013	4.150	1.355(12.715)	

*p<.05

Chi-square analysis indicated that there is a statistically significant difference in the independent variable *ability to manage academic workload* for those who completed their DLDCD and those who did not complete their course. Those who agreed or strongly agreed with this statement were four [OR = 4.150] times more likely to complete their DLDCD course than those who disagreed or strongly disagreed with this statement. Study participants who neither disagreed nor agreed were nearly two [OR = 1.925] times more likely to complete their DLDCD course than those who disagreed or strongly disagreed that they were able to manage their academic workload.

Ability to meet academic deadlines

The categorical independent variable of *ability to meet academic deadlines* is the soldier-student's report of ability to meet higher education deadlines, with 1 indicating strong disagreement, 2 disagreement, 3 neither disagreement nor agreement, 4 agreement, and 5 indicating strong agreement in response to the following survey item: I met the DL Instructor's deadlines for completion of academic tasks while engaged in DLDCD. The statistical analysis for this independent variable is detailed in Table 31.

Table 31

Statistical Analysis of Ability to Meet Academic Deadlines (N = 144)

	n	%	Mean	Median	Mode	SD	Range	Min	Max
Descriptive:			3.79	4	4	.953	4	1	5
Strongly disagree	2	1.4							
Disagree	15	10.4							
Neither disagree nor agree	26	18.1							
Agree	69	47.9							
Strongly agree	32	22.2							

	Course Completion				Asymptotic Significance (2-sided)	Phi and Cramer's V	df
	Yes		No				
	n	%	n	%			
Bivariate:					.000**	.353	2
Strongly disagree or disagree	7	41.2	10	58.8			
Neither disagree nor agree	22	84.6	4	15.4			
Agree or strongly agree	86	85.1	15	14.9			

	B	S.E.	Wald (x^2)	Sig	Exp(B)	95% C.I. Lower(Upper)	p
Single predictor logistic regression:							.001
Reference group: Strongly disagree or disagree	-.357	.493	.524	.469	.700		
Neither disagree nor agree	2.061	.734	7.894	.005	7.857	1.865(33.097)	
Agree or strongly agree	2.103	.567	13.771	.000	8.190	2.697(24.871)	

**p<.005

Chi-square analysis indicated that there is a statistically significant difference in the independent variable *ability to meet academic deadlines* for those participants who completed their DLDCD course and those who did not complete their course. Those who agreed or strongly agreed with this statement were eight [OR = 8.190] times more likely to complete their course than those who disagreed or strongly disagreed with this statement. Study participants who were neutral, neither disagreed nor agreed that they were able to meet academic deadlines, were over seven [OR = 7.857] times more likely to complete their course than those who disagreed or strongly disagreed with this statement.

Higher education goal related to DLDCD

The independent variable of *higher education goal related to DLDCD* is categorical and indicates the specific higher education program pursued by the soldier student during the DLDCD experience – military training, 2-year degree, 4-year degree, graduate school. Table 32 includes the details of the statistical analysis for this independent variable.

Table 32

Statistical Analysis of Higher Education Goal Related to DLDCD (N = 144)

	n	%	Mean	Median	Mode	SD	Range	Min	Max
Descriptive:			3.79	4	4	1.104	5	1	6
Military training	8	5.6							
Certificate	6	4.2							
Two-year degree	20	13.9							
Four-year degree	72	50.0							
Graduate school program	31	21.5							
Personal growth	7	4.9							

	Course Completion				Asymptotic Significance (2-sided)	Phi and Cramer's V	df
	Yes		No				
	n	%	n	%			
Bivariate:					.303	.159	3
Military training, certificate or personal growth	14	66.7	7	33.3			
Two-year degree	15	75.0	5	25.0			
Four-year degree	61	84.7	11	15.3			
Graduate degree	25	80.6	6	19.4			

Chi-square analysis indicated that there is no statistically significant difference in the independent variable *higher education goal related to DLDCD* in those who completed their DLDCD course and those who did not complete their course. However, there was a higher rate of completion, 84.7% (n = 61) for those who sought a four-year degree relative to those who were engaged in course work for military training, certification, or personal growth, 66.7% (n = 14), those who sought a two-year degree, 75% (n = 15) or those who were working on a graduate degree while deployed, 80.6% (n = 25).

Program completion

The independent variable *program completion related to DLDCD* is categorical and indicates the soldier-student's program completion related to DLDCD: yes; still pursuing the training, degree or program; decided not to complete training, degree, or program. Table 33 provides the details of the statistical analysis for this variable.

Table 33

Statistical Analysis of Program Completion (N = 144)

	n	%	Mean	Median	Mode	SD	Range	Min	Max
Descriptive:			1.28	1	1	.633	2	0	2
Decided not to complete program	14	9.7							
Completed program	75	52.1							
Still pursuing program	55	38.2							

	Course Completion				Asymptotic Significance (2-sided)	Phi and Cramer's V	df
	Yes		No				
	n	%	n	%			
Bivariate:					.000**	.378	2
Decided not to complete program	6	42.9	8	57.1			
Completed program	69	92.0	6	8.0			
Still pursuing program	40	72.7	15	27.3			

	B	S.E.	Wald (x^2)	Sig	Exp(B)	95% C.I. Lower(Upper)	p
Single predictor logistic regression:							.000
Reference group: did not complete program	-.288	.540	.284	.594	.750		
Completed program	2.730	.688	15.763	.000	15.333	3.984(59.012)	
Still pursuing program	1.269	.619	4.198	.040	3.556	1.057(11.965)	

***p*<.005

Chi-square analysis indicated that the independent variable of *program completion* has a statistically significant difference for study participants who completed their DLDCD course and those who did not complete their course. Soldier students who completed their program related to DLDCD were more than 15 [OR = 15.333] times more likely to complete their DLDCD course than those who did not complete their higher education program. Those who reported that they are continuing to pursue their

academic goal were 3.5 [OR = 3.556] times more likely to complete their DLDCD course.

Expectations of DLDCD met

The independent variable of *expectations of DLDCD met* is categorical and indicates the study participant's report of having expectations of DLDCD met, with 1 indicating not at all true, 2 indicating somewhat true, and 3 indicating very true to the survey item: My DLDCD met my expectations. Table 34 provides the details of the statistical analysis for this independent variable.

Table 34

Statistical Analysis of Expectations of DLDCD were met (N = 144)

	n	%	Mean	Median	Mode	SD	Range	Min	Max
Descriptive:			2.43	3	3	.633	2	1	3
Not at all true	11	7.6							
Somewhat true	60	41.7							
Very true	73	50.7							

	Course Completion				Asymptotic Significance (2-sided)	Phi and Cramer's V	df
	Yes		No				
	n	%	n	%			
Bivariate:					.000**	.382	2
Not at all true	4	36.4	7	63.6			
Somewhat true	44	73.3	16	26.7			
Very true	67	91.8	6	8.2			

	B	S.E.	Wald (x^2)	Sig	Exp(B)	95% C.I. Lower(Upper)	p
Single predictor logistic regression:							.000
Reference group: not at all true	-.560	.627	.797	.372	.571		
Somewhat true	1.571	.691	5.164	.023	4.812	1.241(18.660)	
Very true	2.973	.758	15.382	.000	19.542	4.424(86.319)	

**p<.005

Chi-square analysis indicated that the independent variable *expectations of DLDCD met* has a statistically significant difference for those students who completed their DLDCD course and those who did not complete their course. Participants who responded "very true" to this statement were 19.5 [OR = 19.542] times more likely to complete their DLDCD course than those who responded "not at all true." Those who

responded “somewhat true” were nearly five [OR = 4.812] times more likely to complete their DLDCD course than those who responded “not at all true.”

Satisfaction with DLDCD experience

The independent variable of *satisfaction with DLDCD* is categorical and the soldier-student’s reported level of satisfaction with the DLDCD experience, with 1 indicating not at all true, 2 indicating somewhat true, and 3 indicating very true to the following statement: overall, I was satisfied with my DLDCD. Table 35 provides the statistical analysis for this independent variable.

Table 35

Statistical Analysis of Satisfaction with DLDCD (N = 144)

	n	%	Mean	Median	Mode	SD	Range	Min	Max
Descriptive:			2.47	3	3	.658	2	1	3
Not at all true	13	9.0							
Somewhat true	51	35.4							
Very true	80	55.6							

	Course Completion				Asymptotic Significance (2-sided)	Phi and Cramer’s V	df
	Yes		No				
	n	%	n	%			
Bivariate:					.000**	.391	2
Not at all true	5	38.5	8	61.5			
Somewhat true	37	72.5	14	27.5			
Very true	73	91.3	7	8.8			

	B	S.E.	Wald (x^2)	Sig	Exp(B)	95% C.I. Lower(Upper)	p
Single predictor logistic regression:							.000
Reference group: not at all true	-.470	.570	.680	.410	.625		
Somewhat true	1.442	.651	4.910	.027	4.229	1.181(15.139)	
Very true	2.815	.694	16.450	.000	16.686	4.282(65.017)	

**p<.005

Chi-square analysis indicated that there is a statistically significant difference in the independent variable *satisfaction with DLDCD* for those study participants who completed their DLDCD course and those that did not complete their course. Soldier-students who responded “very true” to this statement were over 16.5 [OR = 16.686] times more likely to complete their course compared to those who responded with “not at all true” while participants who responded with “somewhat true” were four [OR = 4.229]

times more likely to complete their DLDCD course than those who responded "not at all true."

Willingness to engage in DLDCD again

The independent variable of *willingness to engage in DLDCD again* is categorical and the soldier-student's reported willingness to engage in DLDCD again, with 1 indicating not at all true, 2 indicating somewhat true, and 3 indicating very true to the following statement: I would engage in DLDCD again. Table 36 provides the statistical analysis for this independent variable.

Table 36

Statistical Analysis of Willingness to Engage in DLDCD again (N = 144)

	n	%	Mean	Median	Mode	SD	Range	Min	Max
Descriptive:			2.44	3	3	.717	2	1	3
Not at all true	19	13.2							
Somewhat true	42	29.2							
Very true	83	57.6							

	Course Completion				Asymptotic Significance (2-sided)	Phi and Cramer's V	df
	Yes		No				
	n	%	n	%			
Bivariate:					.234	.142	2
Not at all true	15	78.9	4	21.1			
Somewhat true	30	71.4	12	28.6			
Very true	70	84.3	13	15.7			

Chi-square analysis indicated that there is no statistically significant difference in the independent variable of *willingness to engage in DLDCD again* for those who completed their DLDCD course and those who did not complete their course. Those who responded "very true" to the statement completed their course at a slightly higher rate, 84.3% (n = 70) than those who responded "not at all true," 78.9% (n = 15), and those who responded "somewhat true," 71.4% (n = 30).

Degree aspiration

This independent categorical variable is the soldier-student's higher education goal: associate, bachelor, master, doctorate, professional (MD, JD, DDS, etc.), or other. The statistical analysis for this independent variable is detailed in Table 37.

Table 37

Statistical Analysis of Degree Aspiration (N = 144)

	n	%	Mean	Median	Mode	SD	Range	Min	Max
Descriptive:			3.12	3	3	.957	5	1	6
Associate	4	2.8							
Bachelor	36	25.0							
Master	52	36.1							
Doctorate	44	30.6							
Professional	7	4.9							
Uncertain	1	.7							

	Course Completion				Asymptotic Significance (2-sided)	Phi and Cramer's V	df
	Yes		No				
	n	%	n	%			
Bivariate:					.450	.105	2
Associate, bachelor or uncertain	30	73.2	11	26.8			
Master	43	82.7	9	17.3			
Doctorate or professional	42	82.4	9	17.6			

Chi-square analysis indicated that there is no statistically significant difference in *degree aspiration* for those who completed their DLDCD course and those who did not complete their course. However, those who aspire to a master's degree, 82.7% (n = 43) and doctorate or professional degrees, 82.4% (n = 42) completed their DLDCD course at higher rates than those who aspire to complete an associate or bachelor degree or are uncertain about their degree aspiration, 73.2% (n = 30).

Level of education completed

This independent categorical variable is the soldier-student's level of education completed prior to DLDCD: high school diploma or equivalency, associate, two-year, or

junior college, bachelor, master, doctorate, professional (MD, JD, DDS, etc.). The statistical analysis for this independent variable is detailed in Table 38.

Table 38

Statistical Analysis of Level of Education Completed Prior to DLDCD (N = 144)

	n	%	Mean	Median	Mode	SD	Range	Min	Max
Descriptive:			1.81	2	1	.926	3	1	4
High school diploma or equivalency	70	48.6							
Associate, two-year, or junior college	40	27.8							
Bachelor	26	18.1							
Master	8	5.6							

	Course Completion				Asymptotic Significance (2-sided)	Phi and Cramer's V	df
	Yes		No				
	n	%	n	%			
Bivariate:					.073	.220	3
High school diploma or equivalency	50	71.4	20	28.6			
Associate, two-year, or junior college	34	85.0	6	15.0			
Bachelor	23	88.5	3	11.5			
Master	8	100.0	0	0.0			

Chi-square analysis indicated that there is no statistically significant difference in the independent variable *level of education completed prior to DLDCD* for those students who completed their DLDCD course and those who did not complete their course. However, as the variable *level of education completed* increased, the likelihood that the study participant completed their DLDCD course also increased.

Research Question #7 – Personal/Family Mezzo

What are the differences, if any, in the personal/family mezzo variables of *family support, first generation college student, parent status* and *family size* for those who completed their DLDCD course and those who did not complete their course?

No personal/family mezzo variables achieved statistical significance. Each personal/family independent variable is analyzed below.

Family support

The independent categorical variable of *family support* is the soldier-student's perception of family support of DLDCD, with 1 indicating strong disagreement, 2 disagreement, 3 neither disagreement nor agreement, 4 agreement, and 5 indicating strong agreement to the survey item: My family members supported my DLDCD. Table 39 provides the details of the statistical analysis for this independent variable.

Table 39

Statistical Analysis of Family Support (N = 144)

	n	%	Mean	Median	Mode	SD	Range	Min	Max
Descriptive:			4.05	4	5	.895	4	1	5
Strongly disagree	1	.7							
Disagree	4	2.8							
Neither disagree nor agree	36	25.0							
Agree	49	34.0							
Strongly agree	54	37.5							

	Course Completion				Asymptotic Significance (2-sided)	Phi and Cramer's V	df
	Yes		No				
	n	%	n	%			
Bivariate:					.094	.211	3
Strongly disagree or disagree	3	60.0	2	40.0			
Neither disagree nor agree	25	69.4	11	30.6			
Agree	39	79.6	10	20.4			
Strongly agree	48	88.9	6	11.1			

Chi-square analysis indicated that there is no statistically significant difference in *family support* for those students who completed their DLDCD course and those who did not complete their course. However, those study participants who agreed, 79.6% (n = 39) or strongly agreed, 88.9% (n = 48), completed their DLDCD course at a higher rate than those who were neutral about this statement, 69.4% (n = 25), or those who disagreed or strongly disagreed, 60.0% (n = 3) that their family supported their DLDCD experience.

First generation college student

This independent dichotomous variable indicates the soldier-student's status as a first generation college student (yes, no). Table 40 provides the details of descriptive and bivariate analysis of this independent variable.

Table 40

Statistical Analysis of First Generation College Student (N = 144)

	n	%	Mean	Median	Mode	SD	Range	Min	Max
Descriptive:			.49	0	0	.502	1	0	1
No	73	50.7							
Yes	71	49.3							

	Course Completion				Asymptotic Significance (2-sided)	Phi and Cramer's V	df
	Yes		No				
	n	%	n	%			
Bivariate:					.589	.045	1
No	57	78.1	16	21.9			
Yes	58	81.7	13	18.3			

Chi-square analysis indicated that there is no statistically significant difference in the independent variable of *first generation college student* for those who completed their DLDCD course and those who did not complete their course.

Parent status

This independent dichotomous variable indicates the soldier-student's parent status (yes, no). Table 41 outlines the details of the statistical analysis for this variable.

Table 41

Statistical Analysis of Parent Status (N = 144)

	n	%	Mean	Median	Mode	SD	Range	Min	Max
Descriptive:			.41	0	0	.493	1	0	1
No	85	59.0							
Yes	59	41.0							

	Course Completion				Asymptotic Significance (2-sided)	Phi and Cramer's V	df
	Yes		No				
	n	%	n	%			
Bivariate:					.223	.101	1
No	65	76.5	20	23.5			
Yes	50	84.7	9	15.3			

Chi-square analysis indicated that there is no statistically significant difference in the independent variable *parent status* for those who completed their DLDCD course and those who did not complete their course. However, those who reported being a parent at the time of their DLDCD experience, 84.7% (n = 50), completed their course at a slightly higher rate than those who reported not being a parent while engaged in DLDCD, 76.5% (n = 65).

Family size

This independent continuous variable is the number of children that the soldier-student had, under the age of 18, at the time of engagement in DLDCD. Table 42 provides the details of the statistical analysis for this independent variable.

Table 42

Statistical Analysis of Number of Children Under Age of 18 While Engaged in DLDCD

	n	%	Mean	Median	Mode	SD	Range	Min	Max
Descriptive:			.76	0	0	1.051	3	0	3
0	85	59.0							
1	23	16.0							
2	21	14.6							
3 or more	15	10.4							

	Course Completion				Asymptotic Significance (2-sided)	Phi and Cramer's V	df
	Yes		No				
	n	%	n	%			
Bivariate:					.452	.105	2
0	65	76.5	20	23.5			
1	19	82.6	4	17.4			
2 or more	31	86.1	5	13.9			

Chi-square analysis indicated that there is no statistically significant difference in the independent variable *number of minor children while engaged in DLDCD* for those who completed their DLDCD course and those who did not complete their course. However, study participants who reported having 2 or more children at the time of their DLDCD, 86.1% (n = 31) completed their course at a higher rate than those with one

child, 82.6% (n = 19), and those who reported not having children, 76.5% (n = 65), at the time of DLDCD experience.

Research Question #8 – Personal Micro

What are the differences, if any, in the personal micro independent variables of *comfort with basic computer applications, level of resiliency, age, gender, race* and *relationship status* for those students who completed their DLDCD course and those who did not complete their course?

No personal micro independent variables were found to have statistically significant differences for those who completed their DLDCD course and those who did not complete their course. Each personal micro independent variable is analyzed below.

Comfort with basic computer applications

The independent categorical variable of *comfort with basic computer applications* is the soldier-student's reported level of comfort with basic computer applications, with 1 indicating strong disagreement, 2 disagreement, 3 neither disagreement nor agreement, 4 agreement, and 5 indicating strong agreement in response to the survey item: I feel comfortable with basic computer applications (e.g. word processing, spreadsheets, web browsers, email). Table 43 provides the details of the descriptive and bivariate analyses for this independent variable.

Table 43

Statistical Analysis of Comfort with Basic Computer Applications (N = 144)

	n	%	Mean	Median	Mode	SD	Range	Min	Max
Descriptive:			4.55	5	5	.657	3	2	5
Disagree	2	1.4							
Neither disagree nor agree	7	4.9							
Agree	45	31.3							
Strongly agree	90	62.5							

	Course Completion				Asymptotic Significance (2-sided)	Phi and Cramer's V	df
	Yes		No				
	n	%	n	%			
Bivariate:					.604	.113	3
Disagree	1	50.0	1	50.0			
Neither disagree nor agree	5	71.4	2	28.6			
Agree	35	77.8	10	22.2			
Strongly agree	74	82.2	16	17.8			

Chi-square analysis indicated that there is no statistically significant difference in the independent variable *comfort with basic computer applications* for those who completed their DLDCD course and those who did not complete their course. However, those that strongly agree, 82.2% (n = 74), and those that agree, 77.8% (n = 35) completed their course at a higher rate than those who were neutral, 71.4% (n = 5), and those who disagreed, 50.0% (n = 1), with this statement.

Level of resiliency

The independent variable *level of resiliency* is continuous and defined as the total score of the Connor-Davidson Resilience Scale 10 (CD-RISC 10), ranging from 0 to 40 with higher scores reflecting a greater level of resilience. Table 44 provides the details of the statistical analysis for this independent variable.

Table 44

Statistical Analysis of Level of Resilience (CD-RISC 10) (N = 144)

	n	%	Mean	Median	Mode	SD	Range	Min	Max
Descriptive:			32.6	32.5	30	5.241	19	21	40
21 – 25	17	11.9							
26 – 30	39	27.2							
31 – 35	35	24.2							
36 – 40	53	36.8							

	Mean	SD	T	df	p
Bivariate:			-.060	142	.952
Course completion					
Yes (*n* = 115)	32.62	5.261			
No (*n* = 29)	32.55	5.255			

The results of the independent-samples t-test indicated that there is no statistically significant difference in level of resiliency, as measured by the Connor-Davidson Risk and Resilience Scale 10, for those who completed their DLDCD course and those who did not complete their course.

Age

This independent categorical variable is the soldier-student's current chronological age. The survey item asked that the study participant identify a category of age: 18 – 24, 25 – 34, 35 – 44, 45 – 54, 55 – 64, 65 – 74, and 75 and older. Descriptive and bivariate statistics for this variable are detailed in Table 45, together with a statistical picture of the military community as a whole for comparison.

Table 45

Statistical Analysis of Age (N = 144)

	n	%	Mean	Median	Mode	SD	Range	Min	Max
Descriptive:			1.60	2	2	.814	3	1	4
					Military Community Comparison*				
					n		%		
18 – 24	52	36.1			877,730		39.8		
25 – 34	57	39.6			788,304		35.7		
35 – 44	32	22.2							
45 – 54	3	2.1							

*From dmdc.osd.mil/appj/dwp/dwp_reports.jsp, retrieved on March 31, 2016

	Course Completion				Asymptotic Significance (2-sided)	Phi and Cramer's V	Df
	Yes		No				
	n	%	n	%			
Bivariate:					.290	.131	2
18 – 24	38	73.1	14	26.9			
25 – 34	47	82.5	10	17.5			
35 or older	30	85.7	5	14.3			

Chi-square analysis indicated that there is no statistically significant difference in the independent variable *age* for those who completed their DLDCD course and those who did not complete their course. However, those study participants 35 and older, 85.7% (n = 30), and those 25 – 34, 82.5% (n = 47), completed their DLDCD course at a higher rate than those who reported their age as 18 – 24, 73.1% (n = 38).

Gender

This independent categorical variable is the soldier-student's gender (male, female). Descriptive and bivariate statistics are detailed in Table 46.

Table 46

Statistical Analysis of Gender (N = 144)

	n	%	Mean	Median	Mode	SD	Range	Min	Max
Descriptive:			1.78	2	2	.417	1	1	2
Female	32	22.2							
Male	112	77.8							

	Course Completion				Asymptotic Significance (2-sided)	Phi and Cramer's V	df
	Yes		No				
	n	%	n	%			
Bivariate:					.781	.023	1
Female	25	78.1	7	21.9			
Male	90	80.4	22	19.6			

Chi-square analysis indicated that there is no statistically significant difference in the independent variable *gender* for those who completed their DLDCD course and those who did not complete their course.

Race

This independent categorical variable is the soldier-student's race (White, African-American, American Indian, Asian, Pacific Islander, Hispanic, from multiple races). Descriptive and bivariate statistics are detailed in Table 47.

Table 47

Statistical Analysis of Race (N = 144)

	n	%	Mean	Median	Mode	SD	Range	Min	Max
Descriptive:			1.68	1	1	1.761	7	1	8
White	117	81.2							
African American	9	6.2							
American Indian or Alaskan Native	1	.7							
Asian	6	4.1							
Hispanic	7	4.8							
Native Hawaiian or other Pacific Islander	1	.7							
From multiple races	4	2.7							

	Course Completion				Asymptotic Significance (2-sided)	Phi and Cramer's V	Df
	Yes		No				
	n	%	n	%			
Bivariate:					.068	.222	3
White	96	82.1	21	17.9			
African American	8	88.9	1	11.1			
Hispanic	3	42.9	4	57.1			
Asian	3	50.0	3	50.0			
All other races	8	88.9	1	11.1			
From multiple races	4	100.0	0	0.0			

Chi-square analysis indicated that there is no significant difference in the independent variable *race* for those who completed their DLDCD course and those who did not complete their course. However, those who identified as Hispanic completed their DLDCD course at the lowest rate, 50% (n = 3).

Relationship status

This independent categorical variable is a description of the soldier-student's current relationship status (married; widowed; divorced; separated; in a domestic partnership or civil union; single, but cohabitating with a significant other; single, never married). Table 48 provides the details of the descriptive and bivariate analyses for this independent variable.

Table 48

Analysis of Relationship Status (N = 144)

	n	%	Mean	Median	Mode	SD	Range	Min	Max
Descriptive:			3.63	3	1	2.778	6	1	7
Married	70	48.6							
Widowed	1	.7							
Divorced	9	6.3							
Separated	3	2.1							
Domestic partnership or civil union	3	2.1							
Single, cohabitating with significant other	9	6.3							
Single, never married	49	34.0							

	Course Completion				Asymptotic Significance (2-sided)	Phi and Cramer's V	df
	Yes		No				
	n	%	n	%			
Bivariate:					.397	.113	2
Married, cohabitating or domestic partnership	66	80.5	16	19.5			
Separated, divorced or widowed	12	92.3	1	7.7			
Single, never married	37	75.5	12	24.5			

Chi-square analysis indicated that there is no statistically significant difference in the independent variable *relationship status* for those who completed their DLDCD course and those who did not complete their course. The highest rate of completion, 92.3% (n = 12) was reported by those who were separated, divorced or widowed, followed by married or cohabitating study participants, 80.5% (n = 66), and single, never married individuals, 75.5% (n = 37).

Conclusion

Military domain independent variables that have statistically significant differences for those who completed their DLDCD course and those who did not complete their course are *adequate technical help* and *role conflict.* Higher education domain independent variables that have statistically significant differences for those who completed their course and those who did not are *frequency of Instructor contact, Instructor flexibility,* the *ability to engage in DL teamwork, role conflict, comfort with DL course options,* the *ability to manage academic workload,* the *ability to meet academic deadlines, program completion related to DLDCD, expectations of DLDCD,* and *satisfaction with DLDCD.* No personal/family independent variables achieved statistical significance. A discussion of the implications of these findings follows in chapter 5.

Chapter Five

Discussion

In this chapter, the findings of this study, as detailed in chapter four, are summarized and discussed, including how this research might affect decisions about distance learning during combat deployment (DLDCD) in the future. The opportunities and challenges of using social media for research purposes are discussed. Lessons learned from this research process and recommendations for future research are summarized.

Research Findings

Fifty-two independent variables that potentially affect the dependent variable of *course completion* were explored in this study. Variables were organized using a systems theory framework and grouped at macro, mezzo and micro levels across military, higher education and personal/family domains. Within the military domain, only two independent variables were found to have statistically significant differences for those students who completed their DLDCD course and those who did not complete their course – the macro variable of *adequate technical help* and the mezzo variable of *military role conflict.* Several higher education variables were found to have statistically significant differences: the mezzo variables of *frequency of Instructor contact, Instructor flexibility,* the *ability to engage in classmate collaboration and teamwork,* and *DLDCD role conflict*; and the micro variables of *comfort with DL course options,* the *ability to manage academic workload,* the *ability to meet academic deadlines, program completion related to DLDCD, expectations of DLDCD met,* and *satisfaction with DLDCD experience.* Each is discussed within a systems context below.

Military Macro

Hayak (2011) reported that harsh environmental factors are detrimental to military learner's persistence. However, the findings of this study do not provide strong support for his observation. There was no statistically significant difference in the independent variable *combat environment (DRRI-2 C)* for those students who completed their DLDCD course and those who did not complete their course. However, although not statistically significant, it was noted that those who reported a harsher combat environment were less likely to complete their DLDCD course.

The independent variable *adequate technical help* is significantly different in those who completed their DLDCD course and those who did not complete their course. Soldier-students who agreed or strongly agreed that they received adequate technical help were 4.5 times more likely to complete their course than those who disagreed or strongly disagreed that they received adequate technical help. Responses to an open-ended question intended to gather specific information about ways to improve DLDCD experiences were consistent with the quantitative findings of this study. Study participants referred to their concern about *adequate technical help* by reporting that it was difficult to access technical support while deployed. They suggested that those who make decisions about when the technical support team is available should take into account duty hours and the difference in time zones for deployed students. The results of this study, both quantitative and qualitative, are consistent with the findings of Reynolds (2002), who reported that military learners are more likely to persist when there are fewer technical problems and Matthews (2004), who emphasized the importance of an easily accessible help system for military learners.

Military Mezzo

Both independent variables assessing level of role-conflict for soldier-students demonstrated statistically significant differences for those who completed their DLDCD course and those who did not complete their course. In fact, 50% of this study's participants reported that their military responsibilities interfered with their DLDCD responsibilities, their DLDCD responsibilities interfered with their military responsibilities, or both. McBreen (2002) expressed his concern that a focus on academics for soldier-students can negatively impact military unit cohesion. He noticed that college courses interrupted unit cohesion, for both the individual and the unit. Warner et al. (2011) reported that the need to maintain combat readiness interfered with an individual's academic responsibilities. The findings of this study are consistent with that of McBreen and Warner et al.

Higher Education Macro

No higher education macro independent variables achieved statistical significance. However, there are interesting differences noted for those who completed their DLDCD course and those who did not complete their course. For example, soldier-students attending non-profit higher education institutions, 86.7% (n = 72) completed their DLDCD course at a higher rate than those students attending for-profit institutions, 76.2% (n = 32). In addition, those soldier-students attending higher education institutions with a Military Education Center (MEC) presence, 91.1% (n = 41) completed their DLDCD course at a higher rate than those students who did not have a representative of their higher education institution present at their MEC. These findings indicate the need for further study of differences in courses provided by non-profit versus

for-profit higher education institutions. Also, study participants in this research project were more successful persisting to course completion when their higher education institution had a MEC presence available to them, another level of support for soldier-students warranting further study.

The independent variable *pace of DL course* did not achieve statistical significance in this study. However, those students who worked on 5 – 10 week modules, 84.1% (n = 69), completed their course at a higher rate than those who were engaged in self-paced or competency-based modules, 67.9% (n = 19) or those who were enrolled in standard university semester courses, 79.4% (n = 27). Lorenzo (2007) believes that competency-based learning is the most beneficial structure for adult learners. The results of this study are not consistent with Lorenzo's statement. Reynolds (2002) found that lengthy course modules decreased the soldier-student's tendency to persist to course completion. The results of this study are consistent with Reynolds' findings.

Higher Education Mezzo

Hart (2012) reported that increased communication with the Instructor is associated with persistence. Study participants who reported that they interacted with their Instructor 3 – 4 times per week were 8 times more likely to complete their DLDCD course than those who reported that they interacted with their Instructor less than once per week or not at all. However, those who reported interacting with their Instructor daily or more were only 3 times more likely to complete their DLDCD course than those who reported interacting with the Instructor less than once per week or not at all. These findings are not completely consistent with Hart's observation and warrant further study.

Several researchers have confirmed that an Instructor behavior linked to competency in DL teaching is timely feedback to students (Bolliger & Martindale, 2004; Dooley & Lindner, 2002; Ortiz-Rodriguez, et al, 2005; Kim & Moore, 2005; Thurmond, Wamback, Connors & Frey, 2002; Young, 2006). In this study, the variable *timeliness of Instructor feedback* did not achieve statistical significance. However, those soldier-students who received a reply from their Instructor on the same day, 87.5% (n = 14) completed their DLDCD course at a slightly higher rate than those who did not hear from their Instructor until the next day or longer.

This research study found that there is a statistically significant difference in *Instructor flexibility* for those study participants who completed their DLDCD course and those who did not complete their course. Soldier-students who agreed or strongly agreed that their course Instructor was flexible were 3 times more likely to complete their DLDCD course than those who disagreed or strongly disagreed that their course Instructor was flexible. These findings are consistent with Polin's (2004) statement that DL teaching strategies require Instructor flexibility. In fact, study participants expressed concern regarding a lack of flexibility, noting the importance of being able to complete tasks at any time during a 24 hour day because of time zone differences. Specifically, respondents expressed frustration with the Instructor requirement of logging in at a certain time of day to participate in classroom discussion. In addition to time zone differences, mission requirements reportedly interfered with classroom participation. The concern about time zones was also linked with group projects, an assignment that several participants found extremely frustrating because of their other responsibilities.

The independent variable *ability to engage in DL teamwork* was found to have a statistically significant difference for those who completed their DLDCD course and those who did not complete their course. Those who strongly agreed that they were able to engage in classmate collaboration and team work were 2 times more likely to complete their course than those who disagreed or strongly disagreed with this statement while those who agreed with this statement regarding teamwork were 3.8 times more likely to complete their course. However, this direct quote from a soldier-student indicates a very low desire to connect with classmates and appears to reflect a strong sense of role conflict.

> The required "chat" boards are absolutely horrendous. They add nothing at all to my learning. I do not care at all about Internet strangers. No information I posted was true about me, and I ignored everything other students had to say. If it was not required and a part of my grade, I would never use the chat rooms, message boards, discussion forums, etc. The actual course material is all I care about – those chats do nothing but take away from time I could use to eat, sleep, study, etc.

Higher Education Micro

In this study, the independent variable of *program completion* demonstrated a statistically significant difference in study participants who completed their DLDCD course and those who did not complete their course. Soldier students who completed their program related to DLDCD were 15 times more likely to complete their DLDCD course than those who did not complete their higher education program. Those who are continuing to pursue their academic goal were 3.5 times more likely to complete their course. Although it is unknown if study participants completed their program while enlisted or after their discharge from military service, these findings challenge, at least in

part, Murray's (2007) concern that DLDCD is so difficult that "most soldiers do not complete their degrees until after they leave the military, if they complete them at all."

Two indicators of the soldier-students satisfaction were found to demonstrate statistically significant differences for those students who completed their DLDCD course and those who did not complete their course, *expectations of DLDCD were met* and *satisfaction with DLDCD*. Participants who responded "very true" to the statement "my DLDCD expectations were met" were 19.5 times more likely to complete their DLDCD course than those who responded "not at all true." Those who responded "somewhat true" were nearly five times more likely to complete their DLDCD course than those who responded "not at all true." Soldier-students who responded "very true" to the statement "I was satisfied with my DL experience" were over 16.5 times more likely to complete their course compared to those who responded with "not at all true" while participants who responded with "somewhat true" were four times more likely to complete their DLDCD course than those who responded "not at all true." Student satisfaction is highly correlated with course completion (Astin, 1977; Hart, 2012; Schreiner, 2009). The research findings from this study focused on soldier-students align with findings of previous researchers.

Use of Social Media in Research

The personal use of social media is wide-spread and for many is a daily component of social interaction. It is tempting for a researcher to think that such a high level of exposure to a survey link posted on social media pages that are dedicated to the focus of the research project, in this case military and higher education Facebook pages, will provide an abundance of study participants. This was not the case for this study.

This researcher expected far more than 144 completed responses to a survey link posted to pages highly correlated to the topic of the study. Collectively, these pages had the potential of over 69,500,000 views. While much discussion with other researchers and interested parties was initiated through social media communication during the data collection phase of this research, the use of social media as the platform for data collection did not yield a high number of interested participants, as expected.

During the initial stages of data collection, completed surveys were submitted at the pace of one or two per day. There were factors that contributed to this slow pace of data collection. For example, although most Facebook pages initially allowed for the posting of the request for participation, upon the page administrator's review, the post was sometimes removed from the page. Some administrators would send a private message that the request to participate in the survey was against their policy. Others would express interest and give information about the military vetting process that needed to take place prior to allowing such a post.

Lessons Learned

As a new researcher, it was appealing to collect information about many variables that potentially impact DLDCD. However, as a result, the survey tool was very broad, and some study participants apparently lost interest before completing the entire instrument. I expect future research efforts to be more concise and focus on a narrower range of variables of interest.

Timing for data collection can be improved. This researcher requested participation at the very end of Spring Semester with follow-up requests made during Summer Semester. With a significantly reduced student population on campus during the

summer months, SVA leaders reported that they were less likely to find interested participants for this study. In hindsight, it might have been better to delay data collection until the beginning of Fall Semester. Future research will take timing into consideration and begin the data collection phase when more individuals are engaged in coursework.

Several encouraging individuals representing various military groups verbally expressed their support of this study and willingness to share the survey with eligible participants. For example, one ESS serving at the Kuwait Camp Buehring Education Center remarked that she had thoroughly researched the specific topic of distance learning while deployed and did not find anything in the literature to help her in her work. She reported having two full DL courses starting during the month of June and wrote of her intention to share the survey link with the students in each of these classes. However, IP addresses on completed surveys indicated that no responses were received from Kuwait. The ESS did not respond to follow-up correspondence from this researcher to discuss factors that may have interfered with participation. Other military personnel who were initially interested and helpful later reported that they could not follow through with sharing the survey link because doing so violated policy and/or the instructions of their supervisor. This is consistent with Miller et al.'s (2011) findings:

> "Researchers, even those sponsored by DoD entities, may face challenges in obtaining the cooperation of unit or base-level commanders for promotion or administration of the instrument in their domain. Leaders may feel bombarded with requests for focus group and survey research participation and thus may only be willing to accommodate research they have been formally tasked by senior leadership to support. Indeed, researchers may face active opposition to their efforts, with commanders instructing their personnel not to participate in a study" (p. 61).

Therefore, considering the low number of responses for this study, future research efforts will begin with a more formal and specific written agreement between interested parties.

Recommendations for Future Research

Future researchers can work directly with Military Education Center Specialists prior to the data collection phase to increase the number of study participants in specific locations. This collaboration has the potential to provide a greater power in future studies than this sample size of 144 individuals.

In an effort to address the emerging needs of combat veterans returning from Iraq and Afghanistan with symptoms of PTSD, Tanielian & Jaycox (2008) reviewed the existing trauma literature at the time. They found that most of the participants in research studies completed up until that point were actually domestic violence survivors. Findings of these studies became the basis for future research to address "the invisible wounds of war" for returning combat veterans. Therefore, with some caution, but in the same spirit as Tanielian & Jaycox, the findings of this study can begin to inform higher education administrators and instructors about the needs of other adult learners whose pursuit of higher education is compromised by a challenging learning environment.

A longitudinal study of soldier-students that examines retention and persistence would also provide a better understanding of the variables that contribute to military students completing their college degrees. In this study, level of resilience was explored as a factor affecting *course completion*. Future studies might look at other individual attributes that contribute to reaching higher education goals. A follow-up study exploring how demographic factors might mediate the relationships among resiliency, unit

cohesion, level of perceived support and persistence will help inform administrators and policy-makers in both the military and higher education domains.

Other factors not addressed in this research, but meaningful to military learners, warrant further study. For example, recent attention to how Post 9/11 G.I. Bill funds are spent has focused on the differences in learning experiences between non-profit and for-profit higher education institutions. In fact, one-third of this study's participants were enrolled in courses at a for-profit institution. These students were less likely to complete their DLDCD course than those who attended non-profit higher education institutions. Studies that confirm or challenge the strength of for-profit curricula will assist military learners in making good decisions regarding their choice of a higher education institution and use of their educational benefits.

Conclusion

This study looked at the reported behaviors and attitudes of soldier-students during their most recent distance learning experience while deployed to a combat area and explored the differences in multiple variables across systems levels and domains for those soldier-students who completed their DLDCD and those who did not complete their course. New DLDCD procedures and processes require compelling feedback from soldier-students to influence change in the system (Murray, 2007). It is hoped that this exploratory study begins to inform Instructors, higher education administrators, and military administration as to what system changes would be helpful to increase academic success for soldier-students.

References

Abel, R. (2005). Implementing best practices in online learning. *Educause Quarterly, 3,* 75-77.

Ackerman, R., DiRamio, D., & Mitchell, R.L. (2008). From combat to campus: Voices of student veterans. *NASPA Journal, 45*(1). Retrieved from http://publications.naspa.org/naspajournal/vol45/iss1/art5.

Adler, A.B. (2013). Resilience in a military occupational health context: Directions for future research. In R.R. Sinclair & T.W. Britt (Eds.) *Building psychological resilience in military personnel: Theory and practice.* Washington, D.C.: American Psychological Association.

Adler, A.B., Bliese, P.D., & Castro, C.A. (2011). An introduction to deployment psychology. In A.B. Adler, P.D. Bliese, & C.A. Castro (Eds.) *Deployment psychology: Evidence-based strategies to promote mental health in the military.* Washington, D.C.: American Psychological Association.

Adler, A.B., Bliese, P.D., McGurk, D., Hoge, C.W., & Castro, C.A. (2009). Battlemind debriefing and Battlemind training as early interventions with soldiers returning from Iraq: Randomization by platoon. *Journal of Consulting and Clinical Psychology, 77,* 928-940.

Adler, A.B., Huffman, A.H., Bliese, P.D., & Castro, C.A. (2005). The impact of deployment length and experience on the well-being of male and female soldiers. *Journal of Occupational Health Psychology, 10,* 121-137. doi: 10.1037/1076-8998.10.2.121

Adler, A.B., Litz, B.T., & Bartone, P.T. (2003). The nature of peacekeeping stressors. In T.W. Britt & A.B. Adler (Eds.), *The psychology of the peacekeeper: Lessons from the field* (pp. 149-167). Westport, CT: Praeger.

Affleck, G., & Tennen, H. (1996). Construing benefits from adversity: Adaptational significance and dispositional underpinnings. *Journal of Personality, 64,* 899-922.

Alreck, P.L., & Settle, R.B. (2003). *The survey research handbook* (3rd ed.). Chicago, IL: Irwin.

American Council on Education (2008, November). Serving those who serve: Higher education and America's veterans. Issue Brief. Retrieved from http://www.acenet.edu/Content/NavigationMenu/ProgramServices/MilitaryPrograms/Veterans_Issue_Brief_1108.pdf

Anderson, T. (2008). Toward a theory of online learning. In *Theory and practice of online learning,* (2nd ed). Retrieved from: http://www.cde.athabascau.ca/online_book/

Anderson, T., & Dron, J. (2011). Three generations of distance education pedagogy. *International Review of Research in Open and Distance Learning, 12*(3), 80-97.

Angelino, L.M., Williams, F.K., & Natvig, D. (2007). Strategies to engage online students and reduce attrition rates. *The Journal of Educators Online, 4*(2), 1-14. Retrieved from http://www.thejeo.com/Volume4Number2/Angelino%20Final.pdf.

Aragon, S.R., & Johnson, E.S. (2008). Factors influencing completion and noncompletion of community college online courses. *The American Journal of Distance Education, 22*(3), 146-158.

Arango, T. (2010). War in Iraq defies U.S. timetable for end of combat. *New York Times.* Retrieved from http:// www.nytimes.com/2010/07/03/world/middleeast/03iraq.html?_r=1&emc=etal.

Armed Forces Health Surveillance Center (2011). Associations between repeated deployments to Iraq (OIF/OND) and Afghanistan (OEF) and post-deployment illness and injuries, active component, U.S. Armed Forces, 2003-2010. Mental disorders, by gender, age, group, military occupation, and "dwell times" prior to repeat (second through fifth) deployments. *Medical Surveillance Monthly Report, 18*(9), 2-11.

Artiss, K.L. (2010). The combat soldier. *Military Medicine, 175*(4), 259-267.

Astin, A.W. (1977). *Preventing students from dropping out.* San Francisco, CA: Jossey-Bass.

Bachmann, D.P., Elfrink, J., & Vazzana, G. (2000). E-mail and snail mail face off in rematch. *Marketing Research, 11*(4), 10-15.

Baltar, F., & Brunet, I. (2012). Social research 2.0: Virtual snowball sampling method using Facebook. *Internet Research 22*(1), 57 -74.

Banathy, B.H. (1996). Systems inquiry and its application in education. In D.H. Jonassen (Ed.). *Handbook of research for educational communications and technology: A project of the Association for Educational communications and Technology.* New York, NY: Simon & Schuster Macmillan.

Bandura, A. (1997). *Self-efficacy: The exercise of control.* New York, NY: W.H. Freeman.

Bartone, P.T. (1999). Hardiness protects against war-related stress in Army Reserve forces. *Consulting Psychology Journal: Practice and Research, 51,* 72-82.

Bartone, P.T., & Adler, A.B. (1999). Cohesion over time in a peacekeeping medical task force. *Medical Psychology, 11*(1), 85-107.

Bartone, P.T., Johnsen, B.H., Eid, J., Brun, W., & Laberg, J.C. (2002). Factors influencing small-unit cohesion in Norwegian Navy office cadets. *Military Psychology, 14*(1), 1-22.

Bartone, P.T., Ursano, R.J., Wright, K.M., & Ingraham, L.H. (1989). The impact of a military air disaster on the health of assistance workers: A prospective study. *Journal of Nervous and Mental Disease, 177,* 317-328. doi: 10.1097/000005053-198906000-00001

Beale, D.J., Cohen, R.R., Burke, M.J., & McLendon, C.L. (2003). Cohesion and performance in groups: A meta-analytic clarification of construct relations. *Journal of Applied Psychology, 88,* 989-1004.

Beaudoin, M.F. (2006). *Perspectives on higher education in the digital age.* New York, NY: Nova Science Publishers, Inc.

Bean, J.P., & Metzner, B.S. (1985). A conceptual model of nontraditional undergraduate student attrition. *Review of Educational Review, 55,* 485-540.

Beem, K. (2005). Superintendent soldiers. *School Administrator, 62*(8), 45-49.

Belasco, A. (2011). The cost of Iraq, Afghanistan, and other global war on terror operations since 9/11. Retrieved from http://www.fas.org/sgp/crs/natsec/RL33110.pdf.

Bell, N.S., Amoroso, P.J., Williams, J.O., Yore, M.M., et al. (2010). Demographic, physical, and mental health factors associated with deployment of U.S. Army soldiers to the Persian Gulf. *Military Medicine, 175*(4), 227-238.

Ben-Dor, G., Pedahzur, A., Canetti-Nisim, D., Zaidise, E., Perliger, A., & Bermanis, S. (2008). I versus we: Collective and individual factors of reserve service motivation during war and peace. *Armed Forces & Society, 34*(4), 565-592.

Benke, M., Bishop, T., Thompson, M., Scarafiotti, C., & SchWeber, C. (2004). Promoting student support and satisfaction in online learning. In J. Bourne & J.C. Moore (Eds.), *Elements of quality online education: Into the mainstream,* (p. 17). Needham, MA: Sloan Consortium.

Berge, Z. L., Muilenburg, L., & Haneghan J. V. (2002). Barriers to distance education and training: Survey results. *Quarterly Review of Distance Education, 3*(4), 409-418.

Berge, Z., & Huang, Y. (2004). A model for sustainable student retention: A holistic perspective on the student dropout problem with special attention to e-learning. *DEOSNEWS, 13*(5). Retrieved from: http://www.ed.psu.edu/acsde/deos/deosnews/deosnews13_5.pdf.

Berg-Weger, M. (2013). *Social work and social welfare: An invitation,* (3rd ed.). New York, NY: Routledge.

Bhutta, C. B. (2012). Not by the book: Facebook as a sampling frame. *Sociological Methods and Research, 41*, 57–88.

Biddle, B.J., & Thomas, E.J. (Eds.). *Role theory: Concepts and research.* New York, NY: Wiley Publications.

Bliese, P.D., Wright, K.M., & Hoge, C.W. (2011). Preventive mental health screening in the military. In A.B. Adler, P.D. Bliese, & C.A. Castro (Eds.), *Deployment psychology: Evidence-based strategies to promote mental health in the military.* Washington, D.C.: American Psychological Association.

Boles, J.S., Wood, J.A., & Johnson, J. (2003). Interrelationships of role conflict, role ambiguity, and work-family conflict with different facets of job satisfaction and the moderating effects of gender. *Journal of Personal Selling and Sales Management, 23,* 99-113.

Bolliger, D.U., & Martindale, T. (2004). Key factors for determining student satisfaction in online courses. *International Journal on E-learning, 3*(1), 61-67.

Bonanno, G.A. (2004). Loss, trauma, and human resilience: Have we underestimated the human capacity to thrive after extremely aversive events? *American Psychologist, 59,* 20-28.

Bonds, T., Baiocchi, D., & McDonald, L.L. (2010). *Army deployments to OIF and OEF*. Santa Monica, CA: RAND Corporation.

Bonk, C.J., & Wisher, R.A. (2000). *Applying collaborative and e-learning tools to military distance learning: A research framework.* (Report No. 63007). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

Borel, C.D. (2004). *Distance learning in a military environment: An examination of distance learning students' perceptions* (Doctoral dissertation). Retrieved from: https://www.researchgate.net/publication/33993833_Distance_learning_in_a_military_environment_an_examination_of_distance_learning_on_students%27

Bowen, G.L. & Martin, J.A. (1998). Community capacity: A core component of the 21st century military community. *Military Family Issues: The Research Digest, 2*(3), 1-4.

Bowen, G.L., & Martin, J.A. (2011). The resiliency model of role performance for service members, veterans, and their families: A focus on social connections and individual assets. *Journal of Human Behavior in the Social Environment, 21*, 162-178. doi: 10.1080/10911359.2011.546198

Bowles, S.V., & Bates, M.J. (2010). Military organizations and programs contributing to resilience building. *Military Medicine, 175*(6), 382-385.

Bremner, J.D. (2000). The invisible epidemic: Posttraumatic stress disorder, memory and the brain. Retrieved from http://www.pandys.org/articles/invisibleepidemic.html

Brewin, C.R., Andrews, B., & Valentine, J.D. (2000). Meta-analysis of risk factors for posttraumatic stress disorder in trauma-exposed adults. *Journal of Consulting and Clinical Psychology, 68,* 748-766.

Britt, W.W., Davison, J., Bliese, P.D., & Castro, C.A. (2004). How leaders can influence the impact that stressors have on soldiers. *Military Medicine, 169,* 541-545.

Britt, T.W., & Oliver, K.K. (2013). Morale and cohesion as contributors to resilience. In R.R. Sinclair & T.W. Britt (Eds.) *Building psychological resilience in military personnel: Theory and practice.* Washington, D.C.: American Psychological Association.

Britt, T.W., Sinclair, R.R., & McFadden, A.C. (2013). Introduction: The meaning and importance of military resilience. In R.R. Sinclair & T.W. Britt (Eds.) *Building psychological resilience in military personnel: Theory and practice.* Washington, D.C.: American Psychological Association.

Brown, P.A., & Gross, C. (2011). Serving those who have served: Managing veteran and military student best practices. *The Journal of Continuing Higher Education, 59*(1), 45-49. doi: 0.1080/07377363.2011.544982

Brown, T.M., & Freeman, D. (2010). Planning for higher education. *Distance Education, 38*(4), 35-43.

Browne, T., Hull, L., Horn, O., Jones, M., Murphy, D., Fear, N.T., Hotopf, M., et al. (2007). Explanations for the increase in mental health problems in UK reserve forces who have served in Iraq. *British Journal of Psychiatry, 190,* 484-489.

Buckman, J.E.J., Sundin, J., Greene, T., Fear, N.T., Dandeker, C., Greenberg, N., & Wessely, S. (2011). The impact of deployment length on the health and well-being of military personnel: A systematic review of the literature. *Occupational and Environmental Medicine, 68*(1), 69-76.

Bunn, J. (2004). Student persistence in a LIS distance education program. *Australian Academic Research Libraries, 35*(3), 253-270.

Campbell-Sills, L., & Stein, M.B. (2007). Psychometric analysis and refinement of the Connor-Davidson Resilience Scale (CD-RISC): Validation of a 10-item measure of resilience. *Journal of Traumatic Stress, 20*(6), 1019-1028.

Cannon-Bowers, J.A., Salas, E., Tannenbaum, S.I., & Mathieu, J.E. (1995). Toward theoretically based principles of training effectiveness: A model and initial empirical investigation. *Military Psychology, 7*(3), 141-164.

Carney-Crompton, S., & Tan, J. (2002). Support systems, psychological functioning, and academic performance of nontraditional female students. *Adult Education, 52*(2), 140-154.

Carrey, N., & Ungar, M. (2007). Resilience theory and the diagnostic and statistical manual: Incompatible bed fellows? *Child and Adolescent Psychiatric Clinics of North America, 16,* 497-513.

Carver, C.S. (1998). Resilience and thriving: Issues, models, and linkages. *Journal of Social Issues, 54,* 245-266.

Carver, C.S., & Scheier, M.F. (2002). The hopeful optimist. *Psychological Inquiry, 13,* 288-290.

Casey, Jr., G.W. (2011). Comprehensive soldier fitness: A vision for psychological resilience in the U.S. Army. *American Psychologist, 66*(1), 1.

Castro, C.A., Hoge, C.W., & Cox, A.L. (2006). *Battlemind training: Building soldier resilience.* Retrieved from http://www.dtic.mil/dtic.mil/dtic/tr/fulltext/u2/a47274.pdf

Catalano, J.T. (1985). Keeping college students in college: A motivation-retention model. *College Student Journal, 19,* 255-260.

Chandra, A., Lara-Cinisomo, S., Jaycox, L.H., Tanielian, T., Burns, R.M., Ruder, T., et al. (2010). Children on the homefront: The experiences of children from military families. *Pediatrics, 125*(1), 13-22.

Charney, D.S. (2004). Psychobiological mechanisms of resilience and vulnerability: Implications for successful adaptation to extreme stress. *American Journal of Psychiatry, 161*, 195-216.

Cobanoglu, C., Warde, B., & Moreo, P.J. (2000). A comparison of mail, fax, and web-based survey methods. Retrieved from: www.amstat.org/sections/srms/Proceedings/papers/2000_065.pdf.

Coll, J.E., & Weiss, E.L. (Eds.) (2015). *Supporting veterans in higher education: A primer for administrators, faculty, and advisors.* Chicago, IL: Lyceum Books, Inc.

Coll, J.E., Weiss, E.L., & Yarvis, J.S. (2011). No one leaves unchanged: Insights for civilian mental healthcare professionals into the military experience and culture. *Social Work in Health Care, 50*(7), 487-500.

Connor, K.M., & Davidson, J.R.T. (2003). Development of a new resilience scale: The Connor Davidson Resilience Scale (CD-RISC). *Depression and Anxiety, 18,* 76-82.

Connor, K.M., & Davidson, J.R.T. (2013). *Overview: Connor-Davidson Resilience Scale (CD-RISC).* Retrieved from www.cd-risc.com.

Cooper, L., & Shear, M.D. (2014, November 7). Obama to send 1500 more troops to assist Iraq. *The New York Times.* Retrieved from: http://www.nytimes.com/2014/11/08/world/middleeast/us-to-send-1500-more-troops-to-iraq.html?_r=0

Coutu, D.L. (2002, May). How resilience works. *Harvard Business Review at Large,* 80(5), 46-55.

Creswell, J.W. (2008). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research.* Upper Saddle River, NJ: Pearson Education, Inc.

Cunningham, J. (2012). Veterans' post-secondary education: Keeping the promise to those who serve. *Hinckley Journal of Politics, 13,* 14-20.

Dasher-Alston, R.M., & Patton, G.W. (1998). Evaluation criteria for distance learning. *Planning for Higher Education,* 11-17.

de Alva, J.K. (2000, March/April). Remaking the academy. *Educause,* 32-40.

Defense Manpower Data Center (2016). *Active duty military strength by service.* Retrieved from http://www.dmdc.osd.mil/appj/dwp/dwp_reports.jsp

Defense Science Board Task Force (2007). *Deployment of members of the National Guard and Reserve in the Global War on Terrorism.* Washington, DC: Office of the Under Secretary of Defense for Acquisition, Technology, and Logistics.

Dempsey, M.E. (2010). *The United States Army operating concept: 2016-2028.* Fort Monroe, VA: Training and Doctrine Command.

Department of the Army (2009). *Personnel policy guidance for overseas contingency operations.* Washington, DC: Headquarters, U.S. Army.

Dillman, D.A., Phelps, G., Tortora, R., Swift, K., Kohrell, J., Berck, J., & Messer, B.L. (2009). Response rate and measurement differences in mixed-mode surveys using mail, telephone, interactive voice response (IVR) and the Internet. *Social Science Research, 38*(1), 1-18. doi: 10.1016/j.ssresearch.2008.03.007

Dillon, C. & Greene, B. (2003). Learner differences in distance learning: Finding differences that matter. In M.G. Moore & W.G. Anderson (Eds.), *Handbook of distance education*, 235-255. Mahwah, NJ: Erlbaum.

DiRamio, D., Ackerman, R., & Garza-Mitchell, R.L. (2008). From combat to campus: Voices of student-veterans. *Journal of Student Affairs, Research and Practice, 45*(1), 73-102. doi:10.2202/1949-6605.1908

DiRamio, D., & Jarvis, K. (Eds.) (2011). Veterans in higher education: When Johnny and Jane come marching to campus. *ASHE Higher Education Report, 37*(3). San Francisco, CA: Wiley/Jossey-Bass.

Distance learning courses flex to accommodate military students (n.d.). Retrieved from http://www.geteducated.com/distance-learning-for-active-duty-army-soldiers/292-distance-learning-courses-flex-to-accommodate-military-students

Dolan, C.A., & Ender, M.B. (2008). The coping paradox: Work, stress, and coping in the U.S. Army. *Military Psychology, 20,* 151-169.

Dooley, K.E., & Lindner, J.R. (2002). Competency-based behavioral anchors as authentication tools to document distance education competencies. *Journal of Agricultural Education, 43,* 24-35.

Drennan, J., Kennedy, J., & Pisarski, A. (2005). Factors affecting student attitudes toward flexible online learning in management education. *The Journal of Educational Research, 98*(6), 331-340.

Duggan, M., & Brenner, J. (2013). The demographics of social media users – 2012. Retrieved from: http://www.pewinternet.org/2013/02/14/the-demographics-of-social-media-users-2012/

Duggan, M., & Smith, A. (2013). Social media update 2013. Pew Research Center. Retrieved from http://www.pewinternet.org/files/old-media/Files/Reports/2013/Social%20Networking%202013_PDF.pdf

Dupin-Bryant, P.A. (2004). Pre-entry variables related to retention in online distance education. *American Journal of Distance Education, 18*(4), 199-206. doi.org/10.1027/s15389286ajde1804_2

Eighmey, J. (2006, January). Why do youth enlist? Identification of underlying themes. *Armed Forces & Society, 32*(2), 307-328.

Ekman, A., & Litton, J.E. (2007). New times, new needs: E-epidemiology. *European Journal of Epidemiology, 22*(5), 285-292.

Esqueda, M.C., DePedro, K., & Atuel, H. (2015). Examining the roles and responsibilities of institutions of higher education after more than a decade of war. In J.E. Coll & E.L. Weiss (Eds.) (2015). *Supporting veterans in higher education: A primer for administrators, faculty, and advisors.* Chicago, IL: Lyceum Books, Inc.

Exum, H.A., Coll, J.E., & Weiss, E.L. (2011). *A civilian counselor's primer to counseling veterans,* (2nd ed.). Deerpark, NY: Linus.

Ferrier-Auerbach, A.G., Eres, C.R., Polusny, M.A., Rath, C.M., & Sponheim, S.R. (2010). Predictors of emotional distress reported by soldiers in the combat zone. *Journal of Psychiatric Research 44*(7), 470-476. doi: 10.1016/j.jpsychires.2009.10.010

Fikretoglu, D., & McCreary, D.R. (2012). *Psychological resilience: A brief review of definitions and key theoretical, conceptual, and methodological issues* (Technical Report 2012-012). Toronto, Ontario, Canada: Defense R&D Canada.

Fisher, C.D., & Gitelson, R. (1983). A meta-analysis of the correlates of role conflict and ambiguity. *Journal of Applied Psychology, 68*(2), 320-333.

Flake, E.M., Davis, B.E., Johnson, P.L., & Middleton, L.S. (2009). The psychosocial effects of deployment on military children. *Journal of Developmental & Behavioral Pediatrics, 30,* 271-278.

Fox, S., & Raine, L. (2014). The Web at 25 in the U.S. Retrieved from http://www.pewinternet.org/2014/02/27/the-web-at-25-in-the-u-s/

Frankola, K. (2001). Why online learners drop out. *Workforce, 80*(10), 53-59.

Fredrickson, B.L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist, 56,* 218-226.

Friedman, B.D., & Allen, K.N. (2011). Systems theory. In J.R. Brandell (Ed.) *Theory & practice in clinical social work,* (2nd ed.). Thousand Oaks, CA: SAGE Publications, Inc.

Friedman, M.J. (2006). Posttraumatic stress disorder among military returnees from Afghanistan and Iraq. *American Journal of Psychiatry, 163,* 586-593.

Gal, R., & Jones, F.D. (1995). A psychological model of combat stress. In F.D. Jones, L.R. Sparacino, V.L. Wilcox, J.M. Rothberg, & J.W. Stokes (Eds.), *War psychiatry.* Washington, D.C.: Office of the Surgeon General – Borden Institute.

Garrison, D.R. (2003). Self-directed learning and distance education. In M.G. Moore & W.G. Anderson (Eds.), *Handbook of distance education,* 161-168. Mahwah, NJ: Erlbaum.

Germain, C.B., & Gitterman, A. (2008). *The life model of social work practice: Advances in theory and practice* (3rd ed.). New York, NY: Columbia University Press.

Gibson, A., Kupczynski, L., & Ice, P. (2010). Factors in online student success: A cross-curricular study. Retrieved from http://sloanconsortium.org/2010aln/presentation/factors-online-student-success-cross-curricular-study.

Glover-Graf, N.M., Miller, E., & Freeman, S. (2010). Accommodating veterans with posttraumatic stress disorder symptoms in the academic setting. *Rehabilitation Education, 24*(1 & 2), 43-55.

GoArmyEd (2012). *Soldier life.* Retrieved from http://goarmy.com/soldier-life/being-a-soldier/ongoing-training/leadership-training.htm.

GoArmyEd (2013) *Higher education gateway.* Retrieved from https://www.goarmyed.com/public/public_earn_degree-credentialing-cool.aspx

Grabinger, S. (2004). Design lessons for social education. In T.M. Duffy & J.R. Kirkley, (Eds.), *Learner-centered theory and practice in distance education: Cases from higher education.* Mahwah, NJ: Lawrence Erlbaum Associates.

Greenberg, N. & Jones, N. (2011). Optimizing mental health support in the military: The role of peers and leaders. In A.B. Adler, P.D. Bliese, & C.A. Castro (Eds.) *Deployment psychology: Evidence-based strategies to promote mental health in the military,* 69-101. Washington, D.C.: American Psychological Association.

Greene, M.P. (Ed.). (2012). *Resiliency: An integrated approach to practice, policy, and research,* (2nd ed.). Washington, D.C.: National Association of Social Workers Press.

Greene, M.P., & Conrad, A.P. (2012). Resilience: Basic assumptions and terms. In M.P. Greene (Ed.) *Resiliency: An integrated approach to practice, policy, and research* (2nd ed.). Washington, D.C.: National Association of Social Workers Press.

Griffith, J. (1988). Measurement of group cohesion in U.S. Army units. *Basic and Applied Social Psychology, 9,* 149-171. doi: 10.1207/s15324834basp0902_6

Griffith, J. (2009). Being a reserve soldier: A matter of social identity. *Armed Forces & Society, 36*(1), 38-64.

Griffith, J. (2010). Citizens coping as soldiers: A review of deployment stress symptoms among reservists. *Military Psychology, 22,* 176-206.

Gully, S.M., Devine, D.J., & Whitney, D.J. (1995). A meta-analysis of cohesion and performance: Effects of level of analysis and task interdependence. *Small Group Research, 26*(4), 497-520.

Gunwardena, C.N., & McIsaac, M.S. (1996). Distance education. In D.H. Jonassen (Ed.), *Handbook of research for educational communications and technology* (2nd ed.), 355-395. New York, NY: Simon and Schuster.

Hamrick, F.A., Rumann, C.B., & Associates (2013). *Called to serve: A handbook on student veterans and higher education.* San Francisco, CA: Jossey-Bass.

Hart, C. (2012). Factors associated with student persistence in an online program of study: A review of the literature. *Journal of Interactive online learning, 11*(1), 19-42.

Hartley, K., & Benedixen, L.D. (2001). Educational research in the Internet age: Examining the role of individual characteristics. *Educational Researcher, 30*(9), 22-26.

Hayek, C.T. (2011). *A nonexperimental study examining online military learner satisfaction and retention.* (Doctoral dissertation). Retrieved from: http://search.proquest.com/docview/894251223

Hellmus, T.C. & Glenn, R.W. (2005). *Steeling the mind: Combat stress reactions and their implications for urban warfare.* Santa Monica, CA: RAND Corporation. Retrieved from http://www.rand.org/pubs/monographs/MG191.

Hill, J.R., & Hannafin, M.J. (1997). Cognitive strategies and learning from the World Wide Web. *Educational Technology Research and Development, 45*(4), 37-64.

Hill, R. (1998). What sample size is "enough" in Internet survey research? *Interpersonal Computing and Technology: An Electronic Journal for the 21st Century, 6*(3-4). Retrieved from: www.emoderators.com/ipct-j/1998/n3-4/hill.html.

Hills, M.K. (2010). *Digital natives and immigrants: The role of student attitudes towards technology on attrition and persistence in professional military education online distance learning environments.* College Station, PA: Penn State University Press.

Hobfall, S.E. (2002). Social and psychological resources and adaptation. *Review of General Psychology, 6,* 307-324.

Holder, B. (2007). An investigation of hope, academics, environment, and motivation as predictors of persistence in higher education online programs. *The Internet and Higher Education, 10,* 245-260. doi: 10.1016/j.iheduc.2007.08.002

Howell, S.L., Williams, P.B., & Lindsay, N.K. (2003). Thirty-two trends affecting distance education: An informed foundation for strategic planning. *Online Journal of Distance Learning Administration, 6*(3). Retrieved from http://www.westga.edu/~distance/ojdla/fall63/howell63.html

Huseman, S. (2008, January 3). Battlemind prepares soldiers for combat, returning home. *Army News Service.* Retrieved from http://www.army.mil/article/6829/battlemind-prepares-soldiers-for-combat-returning-home.

Internal Revenue Service (2016). *Publication 3: Combat zones.* Retrieved from: https://www.irs.gov/publications/p3/ar02.html#en_US_2016_publink1000176207

Ishitani, T. (2006). Studying attrition and degree completion behavior among first-generation college students in the United States. *Journal of Higher Education 77*(5), 861. Retrieved from http://find.galegroup.com.proxy1.ncu.edu/itx/start.do?prodId=SPJ.SP09.

Ivankova, N.V., & Stick, S.L. (2007). Collegiality and community-building as a means for sustaining student persistence in the computer-mediated asynchronous learning environment. *Online Journal of Distance Learning Administration, 8*(3), Retrieved from http://www.westga.edu/~distance/ojdla/fall83/ivankova83.htm

Jackson, R., & Watkin, C. (2004). The resilience inventory: Seven essential skills for overcoming life's obstacles and determining happiness. *Selection & Development Review, 20*(6), 13-17.

Jackson, S.E., & Schuler, R.S. (1985). A meta-analysis and conceptual critique of research on role ambiguity and role conflict in work settings. *Organizational Behavior and Human Decision Processes, 36,* 16-78.

Janis, I.L. (1972). *Victims of groupthink: A psychological study of foreign-policy decisions and fiascoes.* Boston, MA: Houghton Mifflin.

Jeffries, M. (2013). *Research in distance education.* Retrieved from: http://www.computerschool.net/edu/DL_history_mJeffries.html

Jex, S.M., Kain, J., & Park, Y. (2013). Situational factors and resilience: Facilitating adaptation to military stressors. In R.R. Sinclair & T.W. Britt (Eds.) *Building psychological resilience in military personnel: Theory and practice,* (pp. 67-84). Washington, D.C.: American Psychological Association.

Johnson, T. (2009, Summer). Ensuring the success of deploying students: A campus view. In R. Ackerman & D. DiRamio (Eds.) Creating a veteran-friendly campus: Strategies for transition success, *New Directions for Student Services (126),* 55-60.

Johnson, D.C., Polusny, M.A., Erbes, C.R., King, D., King, L., Litz, B.T., et al. (2008, August). Resilience and response to stress: Development and initial validation of the Response to Stressful Experiences Scale. Paper presented at the 2nd Annual Marine Corps Combat and Operational Stress Control Conference, San Diego, CA.

Kahn, R.L., Wolfe, D.M., Quinn, R.P., Snoek, J.D., & Rosenthal, R.A. (1964). *Organizational stress: Studies in role conflict and ambiguity.* New York, NY: Wiley.

Karau, S.J., & Hart, J.W. (1998). Group cohesiveness and social loafing: Effects of a social interaction manipulation on individual motivation within groups. *Group Dynamics: Theory, Research, and Practice, 2*(3), 185-191.

Katz, P. (1990). Emotional metaphors, socialization, and roles of drill sergeants. *Ethos, 18*(4), 457-480.

Kearsley, G. (2000). *Online education: Learning and teaching in cyberspace.* Belmont, CA: Wadsworth.

Keating, K. (2004, June). New meaning to basic training. *Training and Development, 58*(6), 59-61.

Keegan, D. (2002). Definition of distance education. In L. Foster, B.L. Bower, & L.W. Watson (Eds.). *ASHE Reader: Distance education – teaching and learning in higher education.* Boston, MA: Pearson Custom Publishing.

Kennedy, H. (2004). Army reserve seeks to toughen up training for part-time soldiers. *National Defense, 91,* 52. Retrieved from http://www.nationaldefensemagazine.org/issues/2004/Dec/ArmyReserveSeeks.htm.

Kessler, R.C., Foster, C.L., Saunders, W.B., & Stang, P.E. (1995). Social consequences of psychiatric disorders to educational attainment. *American Journal of Psychiatry, 152*(7), 1026-1032.

Kim, K.S., & Moore, J.L. (2005). Web-based learning: Factors affecting students' satisfaction and learning experience. *First Monday, 10*(11).

King, D.W., King, L.A., Foy, D.W., & Gudanowski, D.M. (1996). Prewar factors in combat-related posttraumatic stress disorder: Structural equation modeling with a national sample of female and male Vietnam veterans. *Journal of Consulting and Clinical Psychology, 64,* 520-531.

King, L.A., King, D.W. & Vogt, D.S. (2003). *Manual for the Deployment Risk and Resilience Inventory (DRRI): A collection of measures for studying deployment-related experiences of military veterans.* Boston, MA: National Center for PTSD.

King, L.A., King, D.W., Vogt, D.S., Vogt, D.S., Knight, J., & Samper, R.E. (2006). Deployment risk and resilience inventory: A collection of measures for studying deployment-related experiences of military personnel and veterans. *Military Psychology, 18*(2), 89-120.

King, F., Young, M.F., Drivere-Richmond, K., & Schrader, P.G. (2009). Defining learning and distance education. *Association for the Advancement of Computing in Education Journal, 9*(1), 1-14.

Kirkhaug, R. (2009, December). Antecedents of role conflict in compliance-enhancing organizations. *Psychological Reports, Part 2, 105*(3), 1113-1125.

Kirkland, F.R. (1987). *Leading in COHORT companies.* (Report WRAIR NP-88-13). Washington, DC: Walter Reed Army Institute of Research.

Knox, J., & Price, D.H. (1995). The changing American military family: Opportunities for social work, helping reservists and their families cope with separations and deployment. *Social Service Review, 69,* 479-497.

Kongsved, S.M., Basnov, M., Holm-Christensen, K., & Hjollund, N.H. (2007). Response rate and completeness of questionnaires: A randomized study of Internet versus paper-and-pencil versions. *Journal of Medical Internet Research, 9*(3).

Kopelman, R.E., Greenhaus, J.H., & Connolly, T.F. (1983). A model of work, family, and interrole conflict: A construct validation study. *Organizational Behavior and Human Performance, 32,* 198-215.

Kudler, H. (2010). *Painting a moving train: Work with veterans of Iraq and Afghanistan and their families.* [A Power-Point presentation sponsored by the Veterans Integrated Service Network 6 VHA, DVA]. Retrieved from http://www.mirecc.va.gov/visn6/paint-moving-train.asp.

Lagier, J. (2003). Distance learning and the minority student: Special needs and opportunities. *Internet and Higher Education, 6,* 179-184.

Lang, J., Bliese, P.D., Adler, A.B., & Holzl, R. (2010). The role of effort-reward imbalance for reservists in military deployment. *Military Psychology, 22,* 524-542. doi: 10.1080/08995605.2010.521730.

Larreamendy-Joerns, J., & Leinhardt, G. (2006). Going the distance with online education. *Review of Educational Research, 76*(4), 39.

Laurence, J.H. (2006). Poultry and patriotism: Attitudes toward the U.S. military. In T.W. Britt, A.B. Adler, & C.A. Castro (Eds.), *Military life: The psychology of serving in peace and combat, volume four – military culture,* (pp. 211-228). Westport, CT: Praeger Security International.

Lehman, H. (2010, Jun3 13). Army welcomes older recruits looking for stability. St. Petersburg Times. Retrieved from http://www.tampabay.com/news/military/army-welcomes-older-recruits-looking-for-stability/1102212

Lepore, S., & Revenson, T. (2006). Relationships between posttraumatic growth and resilience: Recovery, resistance, and reconfiguration. In L.G. Calhoun & R.G. Tedeschi (Eds.), *Handbook of posttraumatic growth: Research and practice.* Mahwah, NJ: Lawrence Erlbaum Associates.

Lester, P.B., Harms, P.D., Herian, M.N., Krasikova, D.V., & Beal, S.J. (2011). *The comprehensive soldier fitness program evaluation: Report #3 – longitudinal analysis of the Impact of Master Resilience Training on self-reported resilience and psychological health data.* Monterey, CA: Office of the Deputy Under Secretary of the Army. Retrieved from http://www.ppc.sas.upenn.edu/csftechreport3mrt.pdf.

Lester, P.B., McBride, S., & Cornum, R.L. (2013). Comprehensive soldier fitness: Underscoring the facts, dismantling the fiction. In R.R. Sinclair & T.W. Britt (Eds.) *Building psychological resilience in military personnel: Theory and practice.* Washington, D.C.: American Psychological Association.

Letzring, T.D., Block, J., & Funder, D.C. (2005). Ego-control and ego-resiliency: Generalization of self-report scales based on personality descriptions from acquaintances, clinicians, and the self. *Journal of Research in Personality, 39*(4), 395-422. doi: 10.1016/j.jrp.2004.06.003

Lipka, S. (2011, August 7). What data? Ask students. Again and again. *The Chronicle of Higher Education.* Retrieved from http://www.chronicle.com/article/Want-Data-Ask-Students-Again/128537/

Livingston, W.G., Havice, P.A., Cawthon, T.W., & Fleming, D.S. (2011). Coming home: Student veterans' articulation of college re-enrollment. *Journal of Student Affairs Research and Practice, 48*(3), 4.

Lomsky-Feder, E., Gazit, N., & Ben-Ari, E. (2008, July). Reserve soldiers as transmigrants: Moving between the civilian and military worlds. *Armed Forces & Society, 34*(4), 593-614.

Lorenzetti, J.P. (2007, June 15). Courses in your pants pocket: The military's hints for truly mobile education. *Distance Education Report, 11*(12), 5-6.

Lorenzo, G. (2007). Western Governors University: How competency-based distance education has come of age. *Educational Pathways, 6*(7), 1-12.

Lott, A.J., & Lott, B.E. (1965). Group cohesiveness as interpersonal attraction: A review of relationships with antecedent and consequent variables. *Psychological Bulletin, 64,* 259-309.

Luppicini, R.J. (2002). Toward a conversation system modeling research methodology for studying computer-mediated learning communities. *Journal of Distance Education, 17*(2), 87-101.

Luthans, F., Norman, S., & Hughes, L. (2006). Authentic leadership: A new approach for a new time. In R.J. Burke, & C.I. Cooper (Eds.), *Inspiring Leaders,* 84-104. New York: Routledge.

Luthar, S.S., & Cicchetti, D. (2000). The construct of resilience: Implications for interventions and social policies. *Development and Psychopathology, 12,* 857-885.

MacCoun, R.J. (1996). Sexual orientation and military cohesion: A critical review of the evidence. In G.M. Herek, J.B. Jobe, & R. Carney (Eds.), *Out in force: Sexual orientation and the military* (pp. 157-176). Chicago, IL: University of Chicago Press.

MacDermid, M., Samper, R., Schwartz, R., Nishida, J., & Nyaronga, D. (2008). *Understanding and promoting resilience in military families.* West Lafayette, IN: Purdue University.

Maddi, S.R. (2005). On hardiness and other pathways to resilience. *American Psychologist, 60,* 261-262.

Mancini, A.D., & Bonanno, G.A. (2009). Predictors and parameters of resilience to loss: Toward an individual differences model. *Journal of Personality, 77,* 1805-1832. doi: 10.1037/003-066X.61.3.204

Mandernach, J. (2009). Effect of instructor-personalized multimedia in the online classroom. Retrieved from http://www.irrodl.org/index.php/irrodl/article/viewArticle/606/1263.

Manning, F.J (1991). Morale, unit cohesion, and esprit de corps. In R. Gal & D. Mangelsdorff (Eds.), *Handbook of military psychology,* 453-470. New York, NY: Wiley.

Manning, F.J., & Ingraham, L.H. (1987). An investigation into the value of unit cohesion in peacetime. In G. Belenky (Ed.), *Contemporary studies in combat psychiatry,* 47-67. Westport, CT: Greenwood Press.

Martin, L., Rosen, L.N., Durand, D.B., Knudson, K.H., & Stretch, R.H. (2000). Psychological and physical health effects of sexual assaults and nonsexual traumas among male and female United States Army soldiers. *Behavioral Medicine, 26,* 23-33.

Masten, A.S. (2001). Ordinary magic: Resilience processes in development. *American Psychologist, 56,* 227-238.

Masten, A.S., & Coatsworth, J.D. (1998). The development of competence in favorable and unfavorable environments. Lessons from research on successful children. *American Psychologist, 53,* 205-220.

Mathews, E.A. (2004). *A study of course design factors that influence e-learning course completion rates.* [Thesis] Retrieved from: https://www.researchgate.net/publication/235205384_A_Study_of_Course_Design_Factors_that_Influence_E-Learning_Course_Completion_Rates

Mazzetti, M. & Schmitt, E. (2014, November 21). In a shift, Obama extends U.S. role in Afghan Combat. The New York Times. Retrieved from: http://www.nytimes.com.com/2014/11/22/us/

McBreen, B.B. (2002). *Improving unit cohesion: The first step in improving Marine Corps infantry battalion capabilities.* [Thesis] Retrieved from: http://www.2ndbn5thmar.com/coh/mcbreen2002.pdf

McGonigle, D. (2008). Those who serve. *Military Advanced Education, 3*(2). Retrieved from http://military-advanced-education.com.

McIsaac, M.S., & Gunawardena, C.N. (1996). Distance education. In D.H. Jonassen (Ed.). *Handbook of research for educational communications and technology: A project of the Association for Educational Communications and Technology.* New York, NY: Simon & Schuster Macmillan.

McMurray, A.J. (2007). College students, the GI Bill, and the proliferation of online learning: A history of learning and contemporary challenges. *The Internet and Higher Education, 10,* 143-150.

Meredith, L.S., Sherbourne, C.D., Gaillot, S., Hansell, L., Ritschard, H.V., Parker, A.M., & Wrenn, G. (2011). *Promoting psychological resilience in the U.S. military.* Santa Monica, CA: RAND Corporation.

Merrill, H.S. (2003). Best practices for online facilitation. *Adult Learning, 14*(2), 13-16.

Metz. G.W. (2004). Challenge and changes to Tinto's persistence theory. *Journal of College Student Retention Research Theory, 6*(2), 191.

Mikulincer, M., & Solomon, Z. (1989). Causal attribution, coping strategies, and combat-related posttraumatic stress disorder. *European Journal of Personality, 3,* 269-284.

Miles, R.H., & Perreault, Jr., W.D. (1976). Organizational role conflict: Its antecedents and consequences. *Organizational Behavior and Human Performance, 17,* 19-44.

Milgram, N.A., Orenstein, R., & Zafrir, E. (1989). Stressors, personal resources, and social supports in military performance during wartime. *Military Psychology, 1*(4), 185-199.

Military.com (2013). *Combat zone tax exclusions.* Retrieved from http://www.military.com/benefits/military-pay/special-pay/combat-zone-tax-exclusions

Miller, L.L., Rostker, B.D., Burns, R.M., Barnes-Proby, D., Lara-Cinisomo, S., & West, T.R. (2011). *A new approach for assessing the needs of service members and their families.* Santa Monica, CA: RAND Corporation.

MIT Conference on distance education and training strategies (2003, September). Lessons from best practice conference held on September 24th at the Tang Center at MIT. The best of the best: From a distance. *E-Learn Magazine: Education and Technology in Perspective.*

Molina, D., Esqueda, M.C., & DeBraber, T. (2015). An introduction to veteran educational benefits: Challenges experienced by student veterans. In J.E. Coll & E. L. Weiss (Eds.) (2015). *Supporting veterans in higher education: A primer for administrators, faculty, and advisors.* Chicago, IL: Lyceum Books, Inc.

Moore, D. (2013, February 15). *Here's why your GI Bill benefits might be in danger.* Retrieved from: http://www.veteransunited.com/network/are-your-gi-benefits-in-danger

Moore, J.L., Dickson-Deane, C., & Galyen, K. (2011). e-Learning, online learning, and distance learning environments: Are they the same? *Internet and Higher Education, 14,* 129-135.

Moore, M.G. (1993). Transactional distance theory. In D. Keegan (Ed.) *Theoretical principles of distance education.* New York: Routledge.

Moore, M.G., & Anderson, W.G. (2003). *Handbook of distance education.* Mahwah, NJ: L. Erlbaum Associates.

Moore, M., & Kearsley, G. (1996). *Distance education: A systems view.* Belmont, CA: Wadsworth Publishing.

Murphy, J., Hill, C.A., & Dean E. (2013). Social media, sociality and survey research. In C.A. Hill, J. Murphy, & E. Dean (Eds.). *Social media, sociality, and survey research.* Hoboken, NJ: John Wiley and Sons Publishing.

Murphy, J., Link, M.W., Childs, J.H., Tesfaye, C.L., Dean, E., Stern, M., Pasek, J., Cohen, J., Callegaro, M., & Harwood, P. (2014). *Social media in public opinion research: Report of the AAPOR Task Force on emerging technologies in public opinion research.* Oakbrook Terrace, IL: American Association for Public Opinion Research.

Murray, A.T. (2013). *Impact of military deployment on soldier-students* (Doctoral dissertation). CEC Theses and Dissertations. Retrieved from http://nsuworks.nova.edu/do/search/?q=author_lname%3A%22Murray%22%20author_fname%3A%22August%22&start=0&context=3894661

NATO (2016). *Resolute Support Mission in Afghanistan.* Retrieved from: http://www.nato.int/cps/en/natohq/topics-113694.htm

Nexgate. (2013). 2013 State of social media span. Retrieved from http://nexgate.com/wp-content/uploads/2013/09/Nexgate-2013-State -of-Social-Media-Spam-Research-Report.pdf

Nunnally, J. (1978). *Psychometric theory.* New York: McGraw-Hill.

Online colleges for military students (n.d.). geteducated.com. Retrieved from http://www.geteducated.com/distance-learning-for-active-duty-army-soldiers/293-how-to-pick-the-best-online-college-for-military-students

Orvis, B.R., McDonald, L.L., Raymond, B., & Wu, F. (2005). *Increasing participation in Army continuing education: eArmyU and effects of possible program changes.* Santa Monica, CA: RAND Publications.

Padilla, M., & Shapiro, M. (2003). Higher education and the call-up of Reserve Armed Forces. *College & University, 79*(2), 49-51.

Park, J.H., & Choi, H.J. (2009). Factors influencing adult learners' decision to drop out or persist in online learning. *Educational Technology & Society, 12*(4), 207-217.

Parker, W. (2003). *Teaching democracy: Unity and diversity in public life.* New York, NY: Teachers College Press.

Pascarella, E.T., & Terenzini, P.T. (2005). *How college affects students.* San Francisco, CA: Jossey-Bass.

Pealer, L.N., Weiler, R.M., Pigg, R.M., Miller, D., & Dorman, S.M. (2001). The feasibility of a web-based surveillance system to collect health risk behavior data from college students. *Health Education & Behavior, 28*(5), 547.

Perry, W.G. (1999). *Forms of intellectual and ethical development in the college years: A scheme.* San Francisco, CA: Jossey-Bass.

Peterson, M., Wagner, J.A., & Lamb, C.W. (2001). The role of advising in non-returning students' perceptions of their university. *Journal of Marketing for Higher Education, 10*(3), 45-59. doi: 10.1300/1050v10n03_03

Polin, L. (2004). Learning in dialogue with a practicing community. In T.M. Duffy & J.R. Kirkley (Eds.) *Learner-centered theory and practice in distance education: Cases from higher education.* Mahwah, NJ: Lawrence Erlbaum Associates.

Porter, S.R., Whitcomb, M.E., & Weitzer, W.H. (2004). Multiple surveys of students and survey fatigue. In S. R. Porter (Ed.) Special issue: Overcoming research problems. *New Directions for Institutional Research,* (121), 63-73.

Pryce, J.G., Pryce, D.H., & Shackelford, K.K. (2012). *The costs of courage: Combat stress, warriors, and family survival.* Chicago, IL: Lyceum Books, Inc.

Reynolds, K.A. (2002). *Going the distance with distance learning: An analysis of motivational factors that influence e-learning course completion rates.* [Thesis]. Retrieved from: https://www.researchgate.net/publication/35243180_Going_the_distance_with_distance_learning_an_analysis_of_motivational_factors_that_influence_E-learning_course_completion_rates

Rizzo, J.R., House, R.J. & Lirtzman, S.I. (1970). Role conflict and ambiguity in complex organizations. *Administrative Science Quarterly, 15*(2), 150-163.

Rosenheck, R., & Fontana, A. (1994). A model of homelessness among male veterans of the Vietnam War generation. *American Journal of Psychiatry, 151*, 421-427.

Rossman-Stollman, E. (2008, July). Mediating structures and the military: The case of religious soldiers. *Armed Forces & Society, 34*(4), 615-638.

Rovai, A.P. (2003). In search of higher persistence rates in distance education online programs. *The Internet and Higher Education, 6*, 1-16.

Rutter, M. (1985). Resilience in the face of adversity: Protective factors and resistance to psychiatric disorder. *The British Journal of Psychiatry, 147*, 598-611.

Saba, F. (1999). Toward a systems theory of distance education. *The American Journal of Distance Education, 13*(2), 24-31.

Saba, F. & Shearer, R. (1994). Verifying key theoretical concepts in a dynamic model of distance education. *American Journal of Distance Education, 8*(1), 36-59.

Sage, A. (2014). The Facebook platform and the future of social research. In C.A. Hill, E. Dean, & J. Murphy (Eds.). *Social media, society, and survey research.* Hoboken, NJ: John Wiley & Sons .

Salo, M. (2011). *United we stand – divided we fall: A standard model of unit cohesion.* (Dissertation). Retrieved from: https://helda.helsinki.fi/bitstream/handle/10138/27252/unitedwe.pdf?sequence=1

Samuels, C.A. (2005, March 23). Iraq deployments being felt in the schools. *Education Week, 24*(28), 1-17.

Sander, L. (2013, Jan. 5). Veterans' graduation rates are focus of new partnership. *The Chronicle of Higher Education.* Retrieved from http://chronicle.com/article/Veterans-Graduatin-Rates-Ar/136503/

Schaubroeck, J.M., Riolli, L.T., Peng, A.C., & Spain, E.S. (2011). Resilience to traumatic exposure among soldiers developed in combat. *Journal of Occupational Health Psychology, 16*, 18-37. doi: 10.1037/a0021006

Schreiner, L.A. (2009). Linking student satisfaction and retention. *Journal of College Student Retention.* Retrieved from http://www.noel-levitz.com.

Schlager, M. (2004). Enabling new forms of online engagement: Challenges for e-learning design and research. In T.M. Duffy & J.R. Kirkley (Eds.), *Learner-centered theory and practice in distance education: Cases from higher education.* (pp. 91-104). Mahwah, NJ: Lawrence Erlbaum Associates.

Schuler, R.S., Aldag, R.J., & Brief, A.P. (1977). Role conflict and ambiguity: A scale analysis. *Organizational Behavior and Human Performance, 20,* 111-128.

Schunk, D.H. & Zimmerman, B.J. (Eds.). (1998). *Self-regulated learning: From teaching to self-reflective practice.* New York, NY: The Guilford Press.

Scott, M.J. (1992). *Role conflict and reality shock among neophyte Navy nurses.* Monterey, CA: Dudley Knox Library.

Seaberry, B. (2008). *A case study of student and faculty satisfaction with online courses at a community college.* (Doctoral dissertation). Retrieved from http://www.dvc.edu/org/departments/instructional-technology/Case_Study_Online_Courses_5-29-08_Seaberry.pdf.

Seabury, B.A., Seabury, B.H., & Garvin, C.D. (2011). *Foundations of interpersonal practice in social work: Promoting competence in generalist practice.* Thousand Oaks, CA: SAGE Publications.

Segal, D.R., Freedman-Doan, J.G., Bachman, G. & O'Malley, P.M. (2001). Attitude of entry-level enlisted personnel: Pro-military and politically mainstreamed. In P.D. Feaver & R.H. Kohn (Eds.), *Soldiers and Civilians: the civil-military gap and American national security.* Cambridge, MA: MIT Press.

Selbe, J. (2010). Veterans and higher education: Barriers, solutions and successes. In C. Hopkins, D. Herrmann, R. B. Wilson, B. Allen, & L. Malley (Eds.). *Improving college education of veterans* (pp. 41-46). Washington, DC: Booksurge.

Shale, J. (1988). Toward a reconceptualization of distance education. *The American Journal of Distance Education, 2*(3), 25-34.

Shanley, M.G., Crowley, J.C., Lewis, M.W., Straus, S.G., Leuschner, K.J., & Coombs, J. (2012). *Making improvements to the Army Distributed Learning Program.* Santa Monica, CA: RAND Corporation.

Shea-Porter, C. (2009). Posttraumatic stress disorder and government initiatives to relieve it. *Health & Social Work, 34*(3), 235-236.

Sheehan, B.K. & McMillan, J.S. (1999). Response variation in e-mail surveys: An exploration. *Journal of Advertising, 39*(4), 45-54.

Shirom, A. (1976). On some correlates of combat performance. *Administrative Science Quarterly, 21,* 419-432. doi: 10.2307/2391852

Siebold, G.L. (1988). *How small unit cohesion affects performance.* Alexandria, VA: Army Research Institute.

Siebold, G.L. (2006). Military group cohesion. In T.W. Britt, C.A. Castro, & A.B. Adler (Eds.). *Military life: The psychology of serving in peace and combat. Vol. 1: Military performance,* 185-201. Westport, CT: Praeger Security International.

Simmons, C., Fisher, A.K., & Simmons, B. (2015). Cognitive complexity and student veterans. In J.E. Coll & E.L. Weiss, (Eds.) *Supporting veterans in higher education: A primer for administrators, faculty, and advisors.* Chicago, IL: Lyceum Books, Inc.

Sinclair, R.R., & Britt, T.W. (2013). *Building psychological resilience in military personnel: Theory and practice.* Washington, D.C.: American Psychological Association.

Sinclair, R.R., Waitsman, M.C., Oliver, C.M., & Deese, M.N. (2013). Personality and psychological resilience in military personnel. In R.R. Sinclair & T.W. Britt (Eds.) *Building psychological resilience in military personnel: Theory and practice.* Washington, D.C.: American Psychological Association.

Sisk, R. (2014, August 1). Airborne unites to stay in Afghanistan into 2015. *DoD Buzz: Online Defense Acquisition Journal.* Retrieved from: http://www.dodbuzz.com/2014/08/01/airborne-units-to-stay-in-afghanistan-into-2015/

Sloan Consortium (2009). *Learning on demand: Online education in the United States.* Retieved from: http://sloanconsortium.org/ublications/survey/learning_on_demand_sr2010.

Smith, A. (2014). Six new facts about Facebook. Pew Research Center. Retrieved from: http://www.pewresearch.org/fact-tank/2014/02/03/6-new-facts-about-facebook/

Smith, J. (2013, September 3). No plans for complete withdrawal from Afghanistan, ISAF general says. *Stars and Stripes.* Retrieved from http://www.stripes.com/news/no-plans-for-complete-withdrawal-from-afghanistan-isaf-general-says-1.238952.

Smith, P.J. (2005). Editorial: Distance education: Past contributions and possible futures. *Distance Education, 26*(2), 159-163.

Smith, P., & Dillon, C. (1999). Toward a systems theory of distance education: A response. *The American Journal of Distance Education, 13*(2), 32-36.

Snyder, C.R., Harris, C., Anderson, J.R., Holleran, S.A., Irving, L.M., Sigmon, S.T., & Harney, P. (1991). The will and the ways: Development and validation of an individual-differences measure of hope. *Journal of Personality and Social Psychology, 60,* 570-585.

Soeters, J.L., Poponete, C., & Page, J.T. (2006). Culture's consequences in the military. In T.W. Britt, A.B. Adler, & C.A. Castro (Eds.), *Military life, the psychology of serving in peace and combat: Military culture, Volume 4,* 13-34. Westport, CN: Praeger Security International.

Sorrells, A.M., Wills, S., Reagins-Lilly, S., Cate, C., & Moe, J. (2015). Veterans integration to academic leadership: A collaborative university – U.S. Veterans Department of Veterans Affairs outreach program. In J.E. Coll & E.L. Weiss (Eds.), *Supporting veterans in higher education: A primer for administrators, faculty, and advisors.* Chicago, IL: Lyceum Books, Inc.

Spady, W.G. (1970. Dropouts from higher education: An interdisciplinary review and synthesis. *Interchange, 1*(1), 64-85.

Steinberg, A.G., & Nourizadeh, S.M. (2001, August). *Superior, peer, and subordinate mentoring in the U.S. Army.* Paper presented at the 110th Annual Convention of the American Psychological Association, Chicago, IL.

Stern, M.J., Adams, A.E., & Elasser, S. (2009). Digital inequality and place: The effects of technological diffusion on Internet proficiency and usage across rural, suburban, and urban counties. *Sociological Inquiry, 79*(4), 291-417.

Stern, M.J., Bilgen, I., & Dillman, D.A. (2014). The state of survey methodology in the 2010s: Challenges, dilemmas, and optimal solutions in the era of the tailored design. *Field Methods.* Retrieved from: http://fmx.sagepub.com/content/early/2014/02/05/1525822X13519561. doi: 10.1177/1525822X13519561

Stewart, B.L. (2004). Online learning: A strategy for social responsibility in educational access. *The Internet and Higher Education, 7,* 299-310.

Stouffer, S.A. (1949). *The American soldier: Combat and its aftermath.* Princeton, NJ: Princeton University Press.

Straus, S.G., Shanley, M.G., Yeung, D., Rothenberg, J., Steiner, E.D., & Leuschner, K.J. (2011). *New tools and metrics for evaluating Army distributed learning.* Santa Monica, CA: RAND Corporation.

Sue, V.M., & Ritter, L.A. (2012). *Conducting online surveys,* (2nd ed.). Thousand Oaks, CA: SAGE Publications, Inc.

Tanielian, T., & Jaycox, L.H. (Eds.). (2008). *Invisible wounds of war: Psychological and cognitive injuries, their consequences, and services to assist recovery.* Santa Monica, CA: RAND Center for Military Health Policy Research.

Tedeschi, R.G., & McNally, R.J. (2011). Can we facilitate posttraumatic growth in combat veterans? *American Psychologist, 66,* 19-24. doi: 10.1037/a0021896

Thach, E. C., & Murphy, K. L. (1995). Competencies for distance education professionals. *Educational Technology Research and Development, 43*(1), 57-79.

The Technical Cooperation Program (2008, September). (Psychological Health and Operation Effectiveness). Defining resilience: An international perspective. Presentation made at the International Military Testing Association annual meeting in Amsterdam, The Netherlands.

Thurmond, V., Wambach, K., Connors, H.R., & Frey, B.B. (2002). Evaluation of student satisfaction: Determining the impact of a Web-based environment by controlling for student characteristics. *The American Journal of Distance Education, 16,* 169-190.

Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition.* (2nd ed.). Chicago: University of Chicago Press.

Tischler, G.L. (1969). Patterns of psychiatric attrition and of behavior in a combat zone. In P.G Bourne (Ed.), *Psychology and physiology of stress,* 19-44. New York, NY: Academic Press.

Torres, K., Machuca, A., Morris, P., & Whitley, W. (2011). Challenges faced by undergraduate military students at American Public University System. In *Proceedings of World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education 2011*, 2254-2259. Chesapeake, VA: AACE.

TRADOC (1999). *The Army distance learning plan.* Fort Monroe, VA: U.S. Army Training and Doctrine Command.

Tubre, T.C., & Collins, J.M (2000). Jackson and Schuler (1985) revisited: A meta-analysis of the relationships between role ambiguity, role conflict, and job performance. *Journal of Management, 26*(1), 155-169.

Tucker, J. S., Sinclair, R. R., Mohr, C. D., Adler, A. B., Thomas, J. L., & Salvi, A. D. (2009). Stress and counterproductive behavior: Multiple relationships between demands, control, and soldier indiscipline over time. *Journal of Occupational Health Psychology, 14*, 257-271. doi: 10.1037/a0014951

United Press International, Inc. (2013, September 4). Not all NATO troops leaving Afghanistan, commander says. *United Press International, Inc.* Retrieved from http://www.upi.com/Top_News/World-News/2013/09/04/Not-all-NATO-troops-leaving-Afghaistan-commander-says.

U.S. General Accounting Office (2003). *Military transformation: Progress and challenges for DoD's advanced distributed learning programs* (GAO Publication No. 03-393). Washington, DC: Author.

U.S. Department of Veterans Affairs. (2009, November 6). *G.I. Bill history.* Retrieved from http://www4.va.gov/about_va/vahistory.asp.

U.S. Department of Veterans Affairs (2013). *Analysis of VA healthcare utilization among Operation Enduring Freedom (OEF), Operation Iraqi Freedom (OIF), and Operation New Dawn (OND) veterans.* Washington, DC: Author.

U.S. Department of Veterans Affairs. (2014). *Expenditure Report: Fiscal year 2013.* Retrieved from http://www.va.gov/vetdata/expenditures.asp.

U.S. Department of Veterans Affairs (2014, October 13). *Projected veteran population 2013 to 2043.* Retrieved from http://www.va.gov/vetdata/docs/Quick_Facts.asp

Van Hook, M.P. (2014). *Social work practice with families: A resiliency-based approach.* Chicago, IL: Lyceum Books, Inc.

Vickers, R.C. (1984). *The military chaplaincy: A study in role conflict.* Alexandria, VA: Army Military Personnel Center.

Vogt, D., Smith, B.N., King, D.W., & King, L.A. (2012). *Manual for the Deployment Risk and Resilience Inventory-2 (DRRI-2): A Collection of Measures for Studying Deployment-Related Experiences of Military Veterans.* Boston, MA: National Center for PTSD.

von Bertalanffy, L. (1968). *General systems theory: Foundations, development, applications.* New York, NY: George Braziller.

Walker, W. (1992). Comparing Army Reserve forces: A tale of multiple ironies, conflicting realities, and more certain prospects. *Armed Forces & Society, 18,* 303-323.

Wardynski, C., Lyle, D.S., & Colarusso, M.J. (2010). Towards a U.S. Army Officer Corps strategy for success: Developing talent. [Monograph]. *Officer Corps Strategy Monograph Series, 5.* Strategic Studies Institute. Retrieved from: http://www.strategicstudiesinstitute.army.mil/pubs/display.cfm?pubID=965

Warner, C.H., Appenzeller, G.N., Breitbach, J.E., Mobbs, A. & Lange, J.T. (2011). The CARE framework: The broadening of mental health services in a deployed environment. In A.B. Adler, P.D. Bliese, & C.A. Castro (Eds.) *Deployment psychology: Evidence-based strategies to promote mental health in the military.* Washington, D.C.: American Psychological Association.

Weiss-Gal, I. (2008). The person-in-environment approach: Professional ideology and practice of social workers in Israel. *Social Work, 53*(1), 65-75.

Werner, E.E. (1993). Risk, resilience, and recovery: Perspectives from the Kauai Longitudinal Study. *Development and Psychopathology, 5,* 503.

Wessely, S. (2006). Twentieth-century theories on combat motivation and breakdown. *Journal of Contemporary History, 41,* 268-286. doi: 10.1177/0022009406062067

Westat (2010, October 18). *National Survey of Veterans, Active Duty Service Members, Demobilized National Guard and Reserve Members, Family Members and Surviving Spouses.* Rockville, MD: Westat.

Wheeler, S. (2002). Around the globe. *The Quarterly Review of Distance Education, 3*(4), 453-459.

Whitesell, A. A. (2012) *Unit cohesion, attachment, personality factors, and mental health in veterans of Iraq and Afghanistan.* (Doctoral dissertation), University of Tennessee. Retrieved from: http://trace.tennessee.edu/ut_graddiss/1515.

Williams, R. A., Hagerty, B.M., Yousha, S.M., Harrocks, J., Hoyle, K.S., & Liu, D. (2004). Psychosocial effects of the BOOT STRAP intervention in Navy recruits. *Military Medicine, 169,* 814-820.

Windle, G. (2010). What is resilience? A systematic review and concept analysis. *Reviews in Clinical Gerontology, 21,* 1-18.

Windle, G., Bennett, K.M., & Noyes, J. (2011). A methodological review of resilience measurements scales. *Health and Quality of Life Outcomes, 9*(8). Retrieved from http://www.hqlo.com/content/9/1/8

Wisher, R.A., & Freeman, M.W. (2006). The U.S. Reserve component: Training strategies for adapting to deployment. In T.W. Britt, A.B. Adler, & C.A. Castro (Eds.) *Military life – the psychology of serving in peace and combat: Volume 4 – military culture,* 82-96. Westport, CN: Praeger Security International.

Wisher, R.A., Sabol, M.A., & Moses, F.L. (2002, May). *Distance learning: The soldier's perspective.* U.S. Army Research Institute, (Special Report 49). Retrieved from: http://www.ncohistory.com/files/NCOH00005.pdf

Witte, C.J., & Mannon, C.J. (2010). *The Internet and social inequalities.* New York, NY: Routledge.

Woodie, T.E. (2005). *Learning together: The role of the online community in Army professional education.* [Monograph]. Retrieved from https://www.researchgate.net/publication/37162665_Learning_together_the_role_of_the_online_community_in_Army_professional_education

Woodruff, S.I., Conway, T.L., & Edwards, C.C. (2000). Increasing response rates to a smoking survey for U.S. Navy enlisted women. *Evaluation and the Health Professions, 23,* 172-181.

Woodruff, T., Kelty, R., & Segal, D.R. (2006, April). Propensity to serve and motivation to enlist among American combat soldiers. *Armed Forces & Society, 32*(3), 353-366.

Yamada, A., Atuel, H.R., & Weiss, E.L. (2013). Military culture and multicultural diversity among military service members: Implications for mental health providers. In F.A. Paniqua & A. Yamada (Eds.) *Handbook of multicultural mental health* (2nd ed.). 389-410. New York, NY: Academic Press.

Young, S. (2006). Student views of effective online teaching in higher education. *The American Journal of Distance Education, 20*(2), 65-77.

Young, S.L. (2012). *Transitioning from combat to college: The impact of risk and resilience factors on student veterans.* [Dissertation] Retrieved from: http://fordham.bepress.com/dissertations/AAI3544993/

Zastrow, C.H. (2013). *The practice of social work: A comprehensive worktext* (10th ed.). Belmont, CA: Brooks/Cole.

Zastrow, C.H., & Kirst-Ashman, K.K. (2013). *Understanding human behavior and the social environment* (9th ed.). Belmont, CA: Brooks/Cole.

Zinger, L., & Cohen, A. (2010). Veterans returning from war into the classroom: How can colleges be better prepared to meet their needs? *Contemporary Issues in Education Research, 3*(1), 39-51.

Zirkle, C. (2001). Access barriers in distance education. *Contemporary Education, 72*(2), 39.

Appendix

Appendix A

Distance Learning Experiences during Combat Deployment (DLDCD) Survey

First and foremost, thank you for your service to our country. I hope that you will decide to serve once again by participating in this study. I am very interested in the experiences of veterans who have engaged in distance learning while deployed. I am hopeful that the results of this study will assist future military students in their pursuit of higher education.

This research project is being conducted by Ann F. Trettin, doctoral candidate in the Higher Education Administration program at the University of Toledo and is under the direction of David Meabon, PhD, Associate Professor in Educational Leadership at the University of Toledo.

The survey asks those who have been engaged in distance learning while deployed to a combat area to answer questions related to that experience. The results of the survey will be analyzed to explore the impact of various factors on the experience of distance learning during combat deployment. Records will be stored in a password-protected database at the University of Toledo. Your participation in this study is completely voluntary. There are minimal risks to participate. However, if you feel uneasy or anxious while taking this survey, you may stop at any time. The only direct benefit to you, should you choose to participate, is knowing that this research may benefit others who engage in distance learning while deployed.

If you have questions at any time before, during, or after your participation, please feel free to contact a member of the research team:

David Meabon, PhD; david.meabon@utoledo.edu; (419) 530-2666

Ann Trettin; ann.trettin@utoledo.edu; (419) 530-4664

If you have questions beyond those answered by the research team, please contact the chairperson of the University of Toledo's SBE Review Board in the Office of Research at (419) 530-2844.

Thank you for your time and consideration. Your participation is greatly appreciated. It will take approximately 15 – 20 minutes to complete the survey. As an expression of gratitude, five $100 Amazon gift cards will be awarded to drawing winners. You can decide to be entered into this drawing by entering your email address at the end of the survey. The email addresses will be used only for the purpose of informing winners of the results of the drawing.

By clicking on the link to continue (next), you are making a decision to participate in this research study, that you have read the information provided above, have had all of your questions answered, and have decided to take part in this research.

Have you ever engaged in Distance Learning during Combat Deployment (DLDCD)?

_____ Yes
_____ No

Please select the one combat area below that best describes your deployment while engaged in distance learning.

_____ 17 Jan 1991 and after: The Persian gulf, Red Sea, gulf of Oman, the part of the Arabian Sea north of 10N latitude and west of 66 longitude, the Gulf of Aden, and the countries of Bahrain, **Iraq,** Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates
_____ 21 Nov 1995 and after: Bosnia and Herzegovina, Croatia, and Macedonia
_____ 24 Mar 1999 and after: Kosovo area, Federal Republic of Yugoslavia (Serbia and Montenegro), Albania, the Adriatic Sea and the Ionian Sea north of the 39th Parallel
_____ 19 Sept 2001 and after: **Afghanistan,** Pakistan, Tajikistan, Jordan
_____ 21 Sept 2001 through 31 Dec 2005: Incirlik Air Base, Turkey
_____ 01 Oct 2001 and after: Kyrgyzstan, Uzbekistan
_____ 09 Jan 2002 and after: Philippines (only troops with orders referencing OEF)
_____ 10 Apr 2002 and after: Yemen
_____ 01 Jul 2002 and after: Djibouti
_____ 01 Jan 2003 through 31 July 2003: Israel
_____ 01 Jan 2003 through 31 Dec 2005: Turkey
_____ 19 Mar 2003 through 31 July 2003: Mediterranean Sea east of 30 E longitude
_____ 19 Mar 2003 and after: Jordan
_____ 19 Mar 2003 through 20 Apr 2003: Egypt
_____ 01 Jan 2004 and after: Somalia
_____ Other (please specify) _____

How many times have you been deployed to a combat area?

_____ Once
_____ Twice
_____ Three times
_____ Four times
_____ Five times
_____ Other (Please specify) _____

During which deployment did you engage in DLDCD?

_____ First
_____ Second
_____ Third
_____ Fourth
_____ Fifth
_____Other (Please specify) _____

How long, in number of months, were you deployed while engaged in DLDCD?

_____ 1 – 6
_____ 7 – 12
_____ 13 – 18
_____ 19 – 24
_____ Other (please specify) _____

What category of compensation did you receive while engaged in DLDCD?

_____ Hazardous duty pay
_____ Received two or more types of hazardous duty pay
_____ Did not receive hazardous duty pay

Did you complete a military resilience-strengthening prevention program prior to your DLDCD?

_____ Yes, I completed the Battlemind Training (BMT).
_____ Yes, I completed the Comprehensive Soldier Fitness (CSF) Training.
_____ No
_____ Uncertain
_____ Other (please specify) _____

What was your highest level of education completed prior to engaging in DLDCD?

_____ High School diploma or equivalency
_____ Associate, two year, junior college
_____ Bachelor
_____ Master
_____ Doctorate
_____ Profession (MD, JD, DDS, etc.)
_____ Other (Please specify) _____

What is the highest degree you intend to earn?

_____ Associate
_____ Bachelor
_____ Master
_____ Doctorate
_____ Professional (MD, JD, DDS, etc.)
_____ Other (Please specify) _____

Did you access learning support at a Military Education Center while engaged in DLDCD?

_____ Yes
_____ No
_____ I did not have access to a Military Education Center

If you responded 'yes' to accessing learning support at a Military Education center, did you find the level of learning support adequate to meet your DLDCD needs?

_____ Yes
_____ No
_____ I did not have access to a Military Education Center

Which of the following best describes the pace of the distance learning course you were enrolled in while engaged in DLDCD?

_____ Standard university semester
_____ Five – eight week accelerated course
_____ Self-paced/competency-based module
_____ Massive Open Online Course (MOOC)
_____ Other (please specify) _____

How often did you interact with your DL Instructor while you were engaged in DLDCD?

_____ Multiple times per day
_____About once a day
_____ 3 – 4 times per week
_____ 1 – 2 times per week
_____ Less than once per week
_____ Never

When you emailed your DL Instructor with a question, when did you typically receive a reply?

_____The same day
_____The next day
_____Within 2 – 3 days
_____After 3 or more days
_____ Never
_____ I did not email my instructor while engaged in DLDCD

Please give your best estimate to the following questions:

In a typical week how many hours did you spend *online* for your DLDCD?

_____ None
_____ 1 – 3 hours
_____ 4 – 6 hours
_____ 7 – 10 hours
_____ 11 – 15 hours
_____ More than 15 hours

In a typical week, how many hours did you spend *offline* for your DLDCD?

_____ None
_____ 1 – 3 hours
_____ 4 – 6 hours
_____ 7 – 10 hours
_____ 11 – 15 hours
_____ More than 15 hours

Evaluate the following statements:

1 – Strongly disagree
2 – Disagree
3 – Neither disagree nor agree
4 – Agree
5 – Strongly agree

_____ My DL Instructor provided the level of flexibility I needed for my DLDCD.
_____ There was adequate technical help for my DLDCD.
_____ I feel comfortable with basic computer applications (e.g. word processing, spreadsheets, web browsers, email).
_____ I feel comfortable using DL course options (e.g. messaging, drop box, discussion forums, resources, etc.) on the course website used for my DLDCD.
_____ I had consistent Internet access while engaged in DLDCD.

_____ I was able to manage the academic workload while engaged in DLDCD.
_____ I met the DL Instructor's deadlines for completion of academic tasks while engaged in DLDCD.
_____My family members supported my DLDCD.
_____ My DL classmates supported my DLDCD.
_____ I was able to actively participate in learning through collaboration and team work with my DL classmates.
_____My military unit members supported my DLDCD.
_____My military unit leader supported my DLDCD.
_____My responsibilities as a member of a military unit interfered with my DLDCD.
_____ My DLDCD interfered with my responsibilities as a member of a military unit.

What higher education institution were you enrolled in for your DLDCD?
_____

What was the name of the course you were taking while engaged in DLDCD?
_____

Which of the following best describes your higher education goal that is directly related to your DLDCD?

_____ Military training
_____ Certificate
_____ Two-year degree
_____ Four-year degree
_____ Graduate school program
_____ Personal growth
_____ Other (please specify) _____

Did you complete the DLDCD?

_____ Yes
_____ No

Did you complete the training, degree, or program that required your DLDCD?

_____ Yes
_____ I am still pursuing the training, degree or program
_____ I have decided not to complete the training, degree or program

Rate your level of satisfaction with your DLDCD.

1 – not at all true
2 – somewhat true
3 – very true

_____ My DLDCD met my expectations.
_____ Overall, I was satisfied with my DLDCD.
_____ I would engage in DLDCD again.

What, if anything, would have improved your DLDCD experience?

_____

Please mark the response that best indicates how much you agree with the following statements as they apply to you over the last month. If a particular situation has not occurred recently, answer according to how you think you would have felt.

0 – not at all true
1 – rarely true
2 – sometimes true
3 – often true
4 – true nearly all of the time

_____ Able to adapt to change
_____ Can deal with whatever comes
_____ See the humorous side of things
_____ Coping with stress strengthens
_____ Tend to bounce back after illness or hardship
_____ Can achieve goals
_____ Under pressure, focus and think clearly
_____ Not easily discouraged by failure
_____ Think of self as strong person
_____ Can handle unpleasant feelings

Indicate how often you experienced each circumstance listed below during your DLDCD. While I was deployed, the people I worked with:

1 – never
2 – once or twice
3 – several times
4 – many times

_____ treated me in an overly critical way
_____ behaved in a way that was uncooperative when working with me
_____ treated me as if I had to work harder than others to prove myself
_____ questioned my abilities or commitment to perform my job effectively
_____ acted as though my mistakes were worse than others
_____ tried to make my job more difficult to do
_____ "put me down" or treated me in a condescending way
_____ threatened my physical safety

These statements are about your relationships with other personnel during your DLDCD. As used in these statements, the term "unit" refers to those you lived and worked with on a daily basis during deployment. Please mark how much you disagree or agree with each statement.

1 – strongly disagree
2 – somewhat disagree
3 – neither agree nor disagree
4 – somewhat agree
5 – strongly agree

_____ My unit was like family to me.
_____ People in my unit were trustworthy.
_____ My fellow unit members appreciated my efforts.
_____ I felt valued by my fellow unit members.
_____ Members of my unit were interested in my well-being.
_____ My fellow unit members were interested in what I thought and how I felt about things.
_____ My unit leader(s) were interested in what I thought and how I felt about things.
_____ I felt like my efforts really counted to the leaders in my unit.
_____ My service was appreciated by the leaders in my unit.
_____ I could go to unit leaders for help if I had a problem or concern.
_____ The leaders of my unit were interested in my personal welfare.
_____ I felt valued by the leaders of my unit.

This set of statements is about the conditions of day-to-day life during your deployment while engaged in distance learning. Read each statement and describe what amount of time you were exposed to each condition over the course of the entire time during this deployment. Mark the response that best fits your choices.

1 – almost none of the time
2 – a few times
3 – some of the time
4 – most of the time
5 – almost all of the time

_____ The climate was uncomfortable.
_____ I had to deal with annoying animals, insects, or plants.
_____ The food I had to eat was of very poor quality (for example, bad or old MREs).
_____ The conditions I lived in were extremely unsanitary.
_____ I didn't have access to bathrooms or showers when I needed them.
_____ I wasn't able to get as much privacy as I needed.
_____ I was exposed to awful smells.
_____ I was subjected to loud noises.
_____ My daily activities were restricted because of local religious or ethnic customs.
_____ I wasn't able to get rest when I needed it.
_____ I wasn't able to contact home when I needed to.
_____ I had to hassle with putting on and taking off heavy or annoying gear.
_____ I was not allowed to do the things I needed to do to get my job done.
_____ I did not have adequate shelter from uncomfortable living conditions (for example, heat, cold, wet, etc.).

What was your military affiliation while engaged in DLDCD?
_____ Army
_____ Marine Corps
_____ Navy
_____ Air Force
_____ Coast Guard
_____ Reserves
_____ National Guard

What was your military rank while engaged in DLDCD?
_____ Enlisted
_____ Warrant Officer
_____ Commissioned Officer

If you were an enlisted service member while engaged in DLDCD, what was your military occupation?

_____ Infantry/Gun Crew
_____ Electrical Equipment Repair
_____ Communications/Intelligence
_____ Healthcare
_____ Technical/Allied Specialist
_____ Support/Administration
_____ Mechanical Equipment Repair
_____ Crafts Worker
_____ Service/Supply
_____ Non-occupational
_____ I was **not enlisted** military at the time of my DLDCD.
_____Other (please specify) _____

If you were a Warrant or Commissioned Officer while engaged in DLDCD, what was your military occupation?

_____ General Office/Executive
_____ Tactical Operations Officer
_____ Intelligence Officer
_____ Engineering and Maintenance Officer
_____ Scientist/Professional
_____ Healthcare Officer
_____ Administrator
_____ Supply/Procurement
_____ Allied Officer
_____ Non-occupational
_____ I was **not a Warrant or Commissioned Officer** while engaged in DLDCD.

What is your age?

_____ 18 – 24
_____ 25 – 34
_____ 35 – 44
_____ 45 – 54
_____ 55 – 64
_____ 65 – 74
_____ 75 or older

What is your gender?

_____ Female
_____ Male

Are you White, Black or African-American, American Indian or Alaskan Native, Asian, Native Hawaiian or other Pacific Islander, or some other race?

_____ White
_____ Black or African-American
_____ American Indian or Alaskan Native
_____ Asian
_____ Native Hawaiian or other Pacific Islander
_____ From multiple races
_____ Some other race (please specify) _____

Are you a member of the first generation in your family to engage in higher education?

_____ Yes
_____ No

Which of the following best describes your current relationship status?

_____ Married
_____ Widowed
_____ Divorced
_____ Separated
_____ In a domestic partnership or civil union
_____ Single, but cohabiting with a significant other
_____ Single, never married

While engaged in DLDCD, did you have any children under the age of 18?

_____ Yes
_____ No

If you had children under the age of 18 while engaged in DLDCD, how many?

_____ 1
_____ 2
_____ 3
_____ Other (please specify) _____

What is your current zip code? _____

If you would like to be entered in a drawing for one of five $100 Amazon gift cards, please enter your email address. _____

Appendix B

Combat Zones

Combat zones are designated by an Executive Order from the President as areas in which the U.S. Armed Forces are engaging or have engaged in combat. There are currently three such combat zones (including the airspace above each):

- Arabian Peninsula Areas, beginning Jan. 17, 1991 – the Persian Gulf, Red Sea, Gulf of Oman, the part of the Arabian Sea north of 10° North latitude and west of 68° East longitude, the Gulf of Aden, and the countries of Bahrain, Iraq, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates.
- Kosovo area, beginning Mar. 24, 1999 – Federal Republic of Yugoslavia (Serbia and Montenegro), Albania, the Adriatic Sea and the Ionian Sea north of the 39th Parallel.
- Afghanistan, beginning Sept. 19, 2001.

Public Law 104-117 designates three parts of the former Yugoslavia as a Qualified Hazardous Duty Area, to be treated as if it were a combat zone, beginning Nov. 21, 1995 – Bosnia and Herzegovina, Croatia, and Macedonia.

In addition, the Department of Defense has certified these locations for combat zone tax benefits due to their direct support of military operations, beginning on the listed dates:

In support of Operation Enduring Freedom (Afghanistan combat zone):

- Pakistan, Tajikistan and Jordan – Sept. 19, 2001
- Incirlik Air Base, Turkey – Sept. 21, 2001 through Dec. 31, 2005
- Kyrgyzstan and Uzbekistan – Oct. 1, 2001
- Philippines (only troops with orders referencing Operation Enduring Freedom) – Jan. 9, 2002
- Yemen – Apr. 10, 2002
- Djibouti – July 1, 2002
- Israel – Jan. 1 through July 31, 2003
- Somalia – Jan. 1, 2004

In support of Operation Iraqi Freedom (Arabian Peninsula Areas combat zone):

- Turkey – Jan. 1, 2003 through Dec. 31, 2005
- the Mediterranean Sea east of 30° East longitude – Mar. 19 through July 31, 2003
- Jordan – Mar. 19, 2003
- Egypt – Mar. 19 through Apr. 20, 2003

Page Last Reviewed or Updated: 17-Feb-2016

https://www.irs.gov/uac/Combat-Zones

Appendix C

Education Services Officers and Specialists
Responses to DLDCD Research Participation

MEC Name, Type and Location	Response
9th MSC – Army Reserve, Honolulu, HI	Sharing link, but doubtful of response; suggested alternative data collection process for future study on this topic
53rd RSC East – Army Reserve, North Little Rock, AR	No; "no data capability to find a candidate pool," sent survey link forward to individuals that they know who meet criteria for this study
81st RSC - Army Reserve, Birmingham, AL	Very supportive of research design and topic; sharing link
99th MSC, Army Reserve, Honolulu, HI	Passed forward for military vetting → No
99th RSC – Army Reserve, West Coraopolis, PA	No
Camp Carroll Education Center – Korea	ESO denies permission
Eqypt – South Camp MFO Multinational Force & Observers	Agrees to pass on the survey to eligible participants; asks if there is any other way that this MEC can be of assistance
Fort Drum – New York	Request must go through Ft. Knox Army Education Services
Fort Hamilton – New York	1) Requested copy of research proposal 2) Posted proposal and survey link for students' consideration
Fort Polk – Louisiana	"Does not want to be involved"
Kuwait – Camp Buehring	Posted survey link for two courses – Summer Semester, 2015
National Guard – Arkansas	Passed survey link forward to Guard Tuition Incentive Program for participants' consideration
National Guard – Colorado	No, citing FERPA, although no personal student information was requested
National Guard – Delaware	"This is not the correct or efficient way to solicit information for PhD studies." "How did you obtain our contact information?"
National Guard – Florida	Passed forward for military vetting
National Guard – Hawaii	Email bounced by Administrator
National Guard - Illinois	1) Requested a copy of the research proposal and passed it forward for review by the Legal and Public Services Office

	2) Preliminary response: Soldiers cannot participate in and/or be a subject of academic research that is not in pursuit of their own degree and has not been approved by the Secretary of Defense 3) After further review, requested flyer and survey link to send to soldiers
National Guard – Indiana	"Any research in this arena is helpful to provide justification for resources and policies." However, another ESS had concerns regarding FERPA, although no personal information was solicited
National Guard – Kansas	Framed research on this topic in positive terms; will not give out soldier contact information to organizations (not requested); asked how their contact information was obtained
National Guard – New Hampshire	Sharing link
National Guard – Rhode Island	"Will try" to get link out
National Guard – South Dakota	Will share link if study is successfully vetted in state of origin (no response from Ohio National Guard); asked how their email addresses were obtained
National Guard - Texas	Under review
National Guard – Utah	Provided contact information → rejected by administrator
Navy Virtual Education Center	"Specific Navy policy prohibits surveys of this nature because they represent a significant expenditure of Navy resources and sometimes are accomplished at the expense of other mission-related efforts." Provided specific resource for data access and suggestions for future studies on this topic
Redstone Arsenal Education Center; Alabama	Email bounced by administrator
USAG Bavaria/Hohenfeis Training Area Education Center – Germany	Requires military vetting
USAG Bavaria Hub/Rose Barracks (Vilseck)	No – must be vetted within the military, and there is "no access to vetting" at the Bavaria Hub
USAG Detroit Arsenal	Requested copy of research proposal
USAG Okinawa, Japan	Willing to share survey link
USAG Vicenza/Camp Darby (Livorno) Education Center – Italy	Email bounced by administrator

Appendix D

College and University Representatives located within MECs Responses to DLDCD Survey Participation

College or University located within MEC	Response
Arizona State University	Posted to social media; reports having 2,000 online connection points and that ASU local researchers have had 300-500 responses to this type of research survey using these connection points
Central Texas University	ESO will not give permission to share link
City Colleges of Chicago	Shared survey link with student veterans; suggested that fall semester data collection will increase participation
Coastal Carolina University	Provided additional points of contact
Embry Riddle University	Must be vetted
Oklahoma University	Must be military vetted
Penn State World Campus	Shared link with military team (approximately 25 people); recommended additional contact – Veteran Mentor Network; provided multiple resources pertinent to soldier-students; shared on LinkedIn; extremely supportive of this research project
Troy University	Posted on Blackboard course web page
University of Maryland	ESO will not give permission to share survey link
University of Maryland – Europe	Must be military vetted

Appendix E

Student Veterans of America Officers and Advisors Responses to DLDCD Study Participation

College or University	Response
American Public University System	Reaching out to Quad; requests results of this study
Black Hawk College	Posting information for chapter members' consideration
Black Hills State University	Posting link to their Facebook page; sending link to listserve
City College of Chicago – Altamonte Springs	Sent link to listserve
City College of Chicago – Richard J. Daley College	Sent forward; sent link to Resource Center
Clemson University	Posted to their 2 Facebook pages
Coastal Carolina University	Forwarding to listserve
Coastline Community College	Forwarding to listserve
College of Southern Maryland	"Not a good source of study participants"
Columbia Southern University	Recommended by another SVA chapter as a good source of study participants
Cosumnes River College	Posted to Facebook page
ECPI University	Still in development – no students who meet criteria for this study
Emporia State University	Must complete ESU IRB process
Henley-Putnam University	Shared link with chapter members
Keystone College	Survey link rejected by email server; banned content
Loyola Marymount University	Shared link with chapter members via Facebook messaging
Loyola University – Chicago	Shared link with on-campus Veterans Office
Miami International University of Art & Design	Passed request to share survey link on to Dean for review
Mohawk Valley Community College	Survey link rejected by email server
Niagara University	Completed DLDCD survey himself and passed link on to others that he knows meet this study's criteria
Northwest Kansas Technical College	Passed survey link on to on-campus Veterans Center

College or University	Response
Union Institute & University	Referred researcher to Victory Media – publishes an annual list of "Military Friendly" colleges and universities
Norwich University	Referred researcher to "online workers"
Palm Beach State College – North	Passed survey link on to on-campus Veterans Center
Pikes Peak Community College	"No access" to chapter members; referred to their IRB
Saint Francis University	Survey rejected by email server – banned content
Shoreline Community College	Message rejected because researcher is an unknown person to the recipient
Southern Illinois University – Edwardsville	Requests results of study
Southern New Hampshire University	Forwarded link to "online division"
St. John's University – Queens Campus	Will present request to the Board
Suffolk University	Suggested contact at Northeastern University
SUNY College of Agriculture and Technology at Cobleskill	Must complete their IRB process
SUNY College of Technology at Delhi	Must complete their IRB process
Sussex County Community College	Forwarded request to their IRB
Temple College	Survey link rejected by college email server
University of the Incarnate Word	Required their IRB approval; contact person facilitated this process, leading to approval for this study on this campus; survey link forwarded to students for their consideration
Tidewater Community College	Forwarded survey link
Tri-County Technical College	Sent survey link forward to membership
Tufts University	Forwarded link to listserve
Tusculum College	Forwarded request for internal approval
University of Central Oklahoma	Sent link forward
University of Iowa	University security rejected email message
University of Maryland School of Social Work	Requested research proposal for review
University of North Florida	Posted survey link on Facebook page
Wake Technical Community College	Forwarded survey link to chapter members; requests results of the study

Appendix F

Military DLDCD Social Media Exposure

D = declined to share survey link
L = 'liked' survey link on Facebook page
M = messaged researcher with additional questions or information
P = declined to share survey link, respecting student privacy, citing PII or FERPA
S = shared survey link with others
V = required additional vetting
VS = additional vetting successfully completed

	"Likes"	**Responses**
1-155 Brigade Combat Team	246	
1-509 Parachute Infantry Battalion	7,053	
1st Battalion – 24th Marines	1,578	
1st Battalion – 34th Marines	22,378	
1st Battalion – 48th Infantry	44,649	
1st Battalion – 61st Infantry	26,637	
1st Battalion – 120th Infantry Regiment	989	
1st Battalion – 121st Field Artillery	359	
1st Marine Corps District	1,187	
2nd Armored Brigade Combat Team – 1st Infantry	5,697	
2nd Battalion – 13th Infantry	46,045	
2nd Brigade Combat	356,970	
2nd Squadron – 13th Cavalry Regiment	1,896	
3rd Battalion – 34th Infantry	55,506	
3rd Brigade – 25th Infantry Division	8,492	
3rd Brigade Combat Team – 1st Armored Division	11,274	
3rd Brigade Combat Team – 4th Infantry Division	19,348	
3rd Squadron – 16th Cavalry Regiment	617	
4th Engineer Battalion	2,057	
5th Battalion – 7th Air Defense	3,903	
5th Marine Corps District	4,978	
5th Ranger Training Battalion	2,993	
6th Engineer Battalion Combat Airborne	3,606	
6th Marine Corps District	3,195	
6th Ranger Training Battalion	4,729	
7th Infantry Division	22,781	
9th MSC – Army Reserve Education Center	GoArmyEd	M, S
25th Combat Aviation Brigade	8,333	
32nd Medical Brigade – Combatives Training Facility	683	
53rd RSC East – Army Reserve Education Center	GoArmyEd	D, M
68th Army Combat Medics	18,858	

	"Likes"	Responses
81st RSC Army Reserve Education Center	GoArmyEd	M, S
82nd Airborne Division	393,393	
99th RSC North – Fort Belvoir Army Reserve Education Center	GoArmyEd	M, V
101st CAB Wings of Destiny	55,935	
110th Multifunctional Medical Battalion	241	
187th Medical Battalion	1,767	
256th Brigade Combat Team - Louisiana	2,148	
267th Maintenance Company Family	260	
313th Medical Company – Georgia	92	
370th Flight Test Squadron – Tanker Operations	167	
379 Asian Pacific American Association	353	
III Corps	44,835	
XVIII Airborne Corps	65,746	L
Airborne & Ranger Training Brigade	30,519	
Air Force Association	22,771	
Air Force Reserve	100,348	
Air Force Special Operations Command	351,219	
Air Force Wounded Warrior	5,332	
American Corporate Partners (ACP) – Community Organization Armed Forces Business Services	3,059	
American Veterans & Patriots	649	S
Americorps Vetcorps	105	
Armed Services & Veteran Research Group	613	
Army Family and MWR Programs	55,427	
Army Installation Management Command (IMCOM)	12,480	
Army National Guard Veterans of America	1,316	
Army Reserve Command – Fort Bragg	38,697	
Army School of Reconnaissance	1,037	
Army Support Activity	1,082	
Battle Buddy Foundation	241,043	L
Camp Carroll Education Center – Korea	GoArmyEd	D, M
Camp Dwyer – Afghanistan	258	
Camp Henry Education Center	GoArmyEd	D, M
Camp John A. Lejeune Education Center	97,144	
Camp Lejeune	109,982	
Camp Pendleton	90,613	
Canadian Institute for Military and Veteran Health Research	558	
Career Transition Assistance	373	
Catholic War Veterans of USA		S

	"Likes"	Responses
Civilian Military Combine Company	104,895	
Combat Veterans Motorcycle Assn. – Georgia	1,065	
Combat Veterans Motorcycle Assn. – Tennessee	1,127	
Combat Veterans PTSD	1,436	
Combat Veterans to Careers	427	
Camp Dwyer – Afghanistan	240	
Commander Destroyer Squadron 7	1,960	
Egypt – South Camp MFO Education Center	GoArmyEd	M, S
Employer Support of the Guard & Reserve (ESGR)	284	
Enlisted Association of the National Guard of the U.S.	756	
Europe District – U.S. Army Corps of Engineers	6,446	
First Army	6,095	L
Fort Belvoir	33,695	
Fort Benning	22,355	
Fort Benning Education Center	715	
Fort Bliss	300	
Fort Bliss Morale, Welfare, & Recreation (MWR)	20,581	
Fort Bragg	164,947	
Fort Campbell	86,293	
Fort Campbell MWR	30,450	
Fort Drum Education Center	GoArmyEd	M, V
Fort Gordon		V
Fort Hamilton Education Center	GoArmyEd	M, S
Fort Lewis	7,318	
Fort Polk Education Center	GoArmyEd	D, M
Fort Riley	25,315	
Fort Rucker	6,314	
Fort Sam Houston Combatives Club	516	
Foxtrot Company – 232nd Medical Battalion	4,787	
General Colin L. Powell	310,441	
Goodfellow Air Force Base – Texas	582	
Green Beret Foundation	189,414	
Hearts Moving Mountains	10,151	
Heroes Never Forget	207	
Hire Our Heroes	3,503	
Hiring Our Heroes	410,905	
Homes for our Troops	158,973	
I.A.V.A.	504,208	M, S
I.A.V.A. – Lake County	63	
Incirlik Air Base	11,924	
Institute for Veterans & Military Families	97,841	

	"Likes"	Responses
Iraq Training & Advisory Mission – Air	610	
Iraq Veteran 8888	702,306	
Iraq Veterans Against the War	27,911	
Joint Base Elmendorf	26,731	
Lackland Joint Base – San Antonio (JBSA)	14,319	
Langley Air Force Base	3,007	
Lewis L. Millet Post 38 – South Korea	91	
Little Rock Air Force Base	19,392	
Keesler Air Force Base	11,882	
Kuwait Camp Buehring Education Center	GoArmyEd	M, S
Malmstrom Air Force Medical Support	457	
March Air Reserve Base	8,071	
Marine Corps Air Station	20,043	
Marine Corps Logistics Base – Albany	1,025	
Marine Corps Mountain Warfare Training	358	
Marine Corps Recruit Depot – San Diego	283,686	
Marine Corps Recruiters School	2,011	
Marine Force Reserve	221,343	
Medical Service Corps Chiefs	3,968	
Military Family Research Institute @ Purdue	825	
Military Research	1,640	
Moody Air Force Base	6,726	
Morehouse Naval Reserve Officer Training Corps	198	
National Guard	1,655,167	
National Guard – Alabama		S
National Guard – Arkansas – RSC 81st	GoArmyEd	M,S
National Guard – Colorado	GoArmyEd	D, M, P
National Guard – Delaware	GoArmyEd	D, M
National Guard Family Readiness Program – Maryland		M
National Guard – Florida	GoArmyEd	M, V
National Guard – Indiana	GoArmyEd	M
National Guard – Illinois		M, S, V, VS
National Guard – Kansas	GoArmyEd	M, V
National Guard – Nevada		L
National Guard – New Hampshire	GoArmyEd	M, S
National Guard – Professional Education Center	GoArmyEd	D, M
National Guard – Rhode Island	GoArmyEd	M, S
National Guard – South Dakota		M
National Guard – Texas	GoArmyEd	M, V
National Guard – Utah Education Services Office	GoArmyEd	M
National Guard – Vermont		S

	"Likes"	Responses
Naval Air Station – Fallon	365	
Naval Air Station – Mayport	7,548	
Naval Station – Great Lakes	44,881	
Naval Submarine School	3,130	
Naval Technical Training Center	247	
Naval Undersea Warfare Center	1,387	
Naval War College	13,002	
Naval Weapons Station – Seal Beach	2,251	
Navy – China Lake	6,456	
Navy Reserve – Norfolk , VA	37,333	
Navy Virtual Education Center		M, V
Offutt Air Force Base	19,731	
Operation 99	206,284	
Operation Heal Our Patriots	14,744	
Operation Home Front	121,671	
Operation Home Front – Carolinas	8,030	
Operation Tango Mike	1,357	
Operation Veteran Assistance	70	
Patriots and Veterans Organization	4,076	
Peterson Air Force Base – 21st Space Wing	6,131	
Proud U.S. Air Force Veterans	2,205	
Proud U.S. Army Veterans	491	
Quantico	32,507	
S.A.F.E. Association	330	
Salute our Troops	3,041	
San Diego Veterans Coalition	402	
Sarasota Magazine		L
Schriner Air Force Base	2,078	
Sea Poacher Base – U.S. Submarine	578	
Security Forces 9/11 Rick March to Remember	4,243	
Sergeant Audie Murphy Club – Fort Sam Houston	450	L
Sinai South Camp Education Center		S
Soldier Medics	207	
Soldier On – Helping our Wounded Warriors	58,567	
Stand with Those who Serve	2,783	
Stars & Stripes Media News Publishing	430,483	
Star Spangled Toons	3,562	
Support Your Vet – for Friends & Family of Iraq & Afghanistan Veterans	8,230	
United Veterans Council of Lake County	83	
USAG Bavaria Hub Education Center	GoArmyEd	M, V
USAG Detroit Arsenal Education Center	GoArmyEd	M, V

	"Likes"	Responses
USAG Okinawa Education Center	GoArmyEd	M, S
U.S. Air Force	2,101,900	
U.S. Air Force Security Police Group	8,343	
U.S. Army	3,395,978	
U.S. Army Aviation Technical Library & Aviation Learning Center	1,474	
U.S. Army Airborne School – Fort Benning	147,250	
U.S. Army Combat Readiness Safety Center	5,004	
U.S. Army Corps of Engineers – Knoxville, IA	468	
U.S. Army Corps of Engineers – Pittsburgh, PA	1,288	
U.S. Army Corps of Engineers – Rock Island	1,628	
U.S. Army Family & MWR	55,750	
U.S. Army – Fort Benning	262,688	
U.S. Army IMCOM - Europe		L, V
U.S. Army Military – District of Washington	58,172	
U.S. Army Reserve Safety	2,886	L
U.S. Army Support – Fort Dix	2,111	
U.S. Army – Training & Doctrine Command	13,078	
U.S. Army Veterans	508	
U.S. Forces – Afghanistan	13,679	
U.S. Marine Corps	4,173,847	
U.S. Marines in Afghanistan	41,551	L
U.S. Mountain Ranger Association	1,965	
U.S. Naval Air Forces	263,850	
U.S. Navy	2,190,676	
U.S. Navy Memes	16,678	
U.S. Navy Reserve	55,406	
U.S.O.	800,461	
U.S.O. Bagram Air Base – Afghanistan	29,255	L
U.S.O. Basrah	834	
U.S. Pacific Fleet	269,833	
U.S. San Diego	8,324	
U.S.S.O.C.O.M. Care Coalition	5,590	
U.S. Special Operations Command	270,310	
Vet Ed	214	
Veteran Researchers	269	
Veterans & Patriots	97,943	
Veterans are Real Professionals	63	
Veterans Campaign – A program for second service	2,591	
Veterans for Peace	46,693	
Veterans Site	2,201,752	

	"Likes"	Responses
Veterans United Network	1,383,284	
Veterans Wellness Blog	528	
V.F.W. "She Serves"	3,771	
Warrior Care	10,509	
Warrior Games	15,577	
Wounded Warrior Project	3,000,151	

Appendix G

Higher Education DLDCD Survey Social Media Exposure

B = posted to Blackboard
C/# = Completed survey questionnaires received/number from this entity
L = "liked" by Facebook page administrator or someone who saw the survey link post
M = messaged researcher with additional questions or information information or provided information about their students
P = declined to allow post to remain on page in order to protect student's privacy
R = requested results of study
S = shared survey link with others
V = required additional vetting, either through their administrative offices or IRB
VS = successfully completed additional vetting process
*** = for-profit university or college**

HED Institution	University "Likes"	Alumni "Likes"	Student Veteran "Likes"	Responses
Abilene Christian	45,242			L
Academy of Art University	89,994			
Adelphi University	12,892			
Adler School of Professional Psychology	1,129			
Adrian College	7,541			
Advanced Technology Institute	784			
Adventist University of Health Science	19,585			
AIB College of Business	3,021	944		M
Aiken Technical College	106			
Aims Community College	7,553			
Airstream Renewables, Inc.	1,957			
Alabama A&M University	16,509			
Albany State University	10,097			
Albertus Magnus College	4,040			
Alfred State	7,859	58		
Allegany College of Maryland	4,492			
Allen University	3,216	34		
Alliant International University of Los Angeles – San Diego	9,534			
Alliant International University of Los Angeles – Fresno	70			
*Allied American University	30,408			C/1
All Star Tractor Trailer Training	177			
Alma College	7,493	2,452		

HED Institution	University "Likes"	Alumni "Likes"	Student Veteran "Likes"	Responses
Alpena Community College				S
Alvernia University	25			
Alvin Community College	5,979			
American College of Healthcare Sciences	38,896			
American Council on Exercise	157,719			
American Graduate University	19			
*American Inter Continental University	105			
American International University	55,036	34		L
American Meridian	33			
*American Military University	91,679			C/28
*American Public University	26,815	2,977		R, S
American River College	17,584			
*American Sentinel University - online	9,729			
American University – Paris	13,778			
American University – Washington, D.C.	111,368			
Amridge University	8,501			
Ancilla College	900			
Angelo State University	16,457			
Animal Behavioral Institute	4,458			
Anne Arundel Community College	10,942			
Anoka-Ramsey Community College – Cambridge	4,851			
Anoka-Ramsey Community College – Coon Rapids	266			
Antelope Valley College	8,190			
Antioch University – Seattle	2,311			
*Antonelli College	3,066			
Aoma School of Integrative Medicine	2,065			
Apex School of Theology	2,042			
Apollos University	210			
Appalachian State University	101,656			
Aquinas College	7,163	106		
Aquinas Institute of Theology	1,281			
Arcadia University	12,402			
*Argosy University – Chicago	53			
*Argosy University – Inland Empire			137	L
*Argosy University – Online	1,267			
*Argosy University – Orange County	104			
Arizona College	1,608			

HED Institution	University "Likes"	Alumni "Likes"	Student Veteran "Likes"	Responses
Arizona State University	223,425			C/1, L, S
Arizona State University Polytechnic	3,316	33,645		
Arizona State University West	3,623			
Arkansas Northeastern College	2,528			
Arkansas State University		54		
Arkansas Technical University	17,627			
Armstrong Atlantic State		25		
Armstrong State University	15,784			
*Art – Home Profession	1,294			
*Art Institute – Austin	3,831			
*Art Institute – Charlotte	389			
*Art Institute – Nashville	8,584			
*Art Institute – Pittsburgh Online	4,314			
*Art Institute – Virginia Beach	879			
Asa College	5,906	344		
*Ashford University	136,298	1,396	3,906	C/1, L
Ashland Community & Technical College	4,709			
Ashville Buncombe Technical Community College	11,118			
Athens State University	9,670			
At-Home Professions	1,250			
Atlanta Technical College		254		
A.T. Still University	461	1,576		
Auburn University	329,781	1,954		
Augsburg College	7,755	944		
Augusta Technical College	5,091	70		
Augustana College	11,087	2,708		
Austin Peay State University Clarksville	3,692			
Aventis College	952			
Averett University	3,732	1,493		
Aviation Institute of Maintenance	20,930			
Aviation Institute of Maintenance – Kansas City	4			
Avila University	4,337	2,469		
Azusa Pacific	28,898			
Bakersfield College	3,604	348		
Baker University	7,875	36		
Bainbridge College	11,624			
Baker College	15,686	57		
Baker Online	1,400			

HED Institution	University "Likes"	Alumni "Likes"	Student Veteran "Likes"	Responses
Baker University	7,875	36		
Baldwin Wallace University	12,965			S
Ball State University	67,265	8,768		
Baltimore City Community College	2,633	183		
Barstow Community College	1,561			
Barton College	3,361			
Barton Community College – Fort Riley	5,266			L
Baruch College	15,715	10,113		
Bates Technical College	1,873			
Baton Rouge Community College	10,225			
Bauder College	2,384			
Bay de Noc Community College	1,031	28		
Baylor University	156,485	10,085		
Bay Path University	4,187			
Belhaven University	13,922	9		
Bellevue University – Nebraska	10,321	654	458	C/1
Bellingham Technical College	1,795			
Belmont University	25,409			
Bemidji State University	14,015			
Benedictine University	9,695			
Benjamin Franklin Institute of Technology	4,065			
*Berkeley College – Newark	395			
Bethany College	3,704	376		
Bevill State Community College	6,082			
Bilhaven University	13,922			
Bismarck State College	2,953			
Black Hawk College				M, S
Black Hills State University	8,129			M, S
Bladen Community College	1,317	13		
Blinn College	9,473			L
Bloomsburg University	22,385			
Blue Mountain Community	2,764			
Blue Ridge Community College – Virginia	5,189			
Boise State University		1,483	119	
Boston University	186,997		124	
Bowling Green State University	43,436	17,459		
Bradley University	30,616	2,687		
Bramson ORT College	1,679			
Brandman University	6, 143			

HED Institution	University "Likes"	Alumni "Likes"	Student Veteran "Likes"	Responses
Brazosport College	14,846			L
Brescia University	2,076	1,020		
Briar Cliff University	3,207			
Bridge Valley Community & Technical College	356			
Bridgewater State University	12,399	1,825		L
Brigham Young University				C/1
Bristal Community College	9,262			
Broadview University	3,977			
Bronx Community College	11,443			
Brookhaven College	4,737	21		
Brookstone College of Business	170			
Broward College	38,191	1,462		
Broward College – Central	40,799		115	
Broward College – South				M
*Brown Mackie College – Cincinnati	642			
*Brown Mackie College – New Mexico	486			
Brownson Technical School	258		11	
*Bryant & Stratton College – Albany	1,107			
*Bryant & Stratton College – Amherst	9			
*Bryant & Stratton College – Bayshore	36,124			
*Bryant & Stratton College – Buffalo	695			
*Bryant & Stratton College – Milwaukee	1,609			
*Bryant & Stratton College – Online	4,764			
*Bryant & Stratton College – Syracuse	1,014			
*Bryant & Stratton College – Syracuse North	790			
*Bryant & Stratton College – Wauwatosa	1,500			
Bryant University	14,609	6,768		
Bucks County Community College	9,755	703		
Buffalo State University	16,973	2,561		
Bunker Hill Community College	9,754			
Butler Community College	14,349	248		
Butler County Community College	6,462			
Butte College	7,641	5,775		
Cabrillo College	29,997	84		
California Baptist University		2,500		
California Career School	779			
California College of San Diego	84,490			

HED Institution	University "Likes"	Alumni "Likes"	Student Veteran "Likes"	Responses
*California Inter Continental University	1,076			
California Lutheran University	3,404			
California Maritime Academy	7,135			
California Polytechnic State University – Ponoma	226			
*California Southern University	7,926	1,863		
California State University – Chico	29,143			
California State University – East Bay	22,354	592		
California State University – Fullerton			245	
California State University – Monterey Bay	14,067			
California State University – Sacramento	32,504			
California State University – San Bernardino	1, 626			
California State University San Marcos	15,180			
Calvary Bible College and Theological Seminary	2,325			
Calumet College of St. Joseph		171		
Calvin College	16,091	4,504		
Cambridge College – Springfield Regional Center	167			
Camden County College	11,511	1,436		
Cameron University	3,905	1,259		
Campbellsville University	8,437			
Campbell University	16,251	1,038	549	C/1
Cape Cod College			68	
Cape Fear Community College	10,934	476		
*Capella University	71,104			L
Capital Community College	2,295			
Capital University	6,635	2,287		L
Career Step	55,538			
Carl Sandburg College	3,963	275		
Carnegie Mellon University	92,073	4,309		
Carroll College	6,195			
Carroll University	28,847			
Cascadia College		2,034		
Case Western University	19,767	470		
Casper College	1,920	280		L
Cayuga Community College	4,066			
Cedar Valley College	2,879			
Cedarville University	14,190	6,413		

HED Institution	University "Likes"	Alumni "Likes"	Student Veteran "Likes"	Responses
Center for Advanced Legal Studies	1,336			
Central Carolina Technical College	4,951			
Central Christian College of Kansas	261			
Central Community College – Grand Island	3,888			
Central Maine Community College	4,402			
Central Michigan University	63,008		302	
Central Oregon Community College	6,819			L
Central Pennsylvania College	6,882			
Central Pennsylvania Institute of Science & Technology	820			
Central State University	7,050	152		
Central Texas College		146		P
Central Texas University				C/6
Centura College Chesapeake	1,660			
Century College	5,251			
Cerritos College			139	
Chabot College	4,826			
Chadron State College		1,777		
*Chamberlin College of Nursing	202,477			
Chaminade University of Honolulu	4,276			
Champlain College	7,649		136	L
Chandler Gilbert Community College	3,777			
Chapman University	21,303			
Charter Oak State College	2,501			
Chatham University	11,088	1,514		
Chattahoochee Technical College	7,565			
Chattahoochee Valley Community College	1,960			
Chattanooga State Community College	10,729			M
Chesapeake College	701			
Chicago State University	10,905			
Chippewa Valley Technical College	5,626	103		
Christendom College Graduate School	6,844			
Christopher Newport University	15,048			
Cincinnati State Technical and Community College	7,457			
Citrus College	7,570	68	64	
City College of Chicago				C/1, M. S
City College of Chicago – Harold Washington	3,675			S
City College of Chicago – Olive Harvey	2,825			

HED Institution	University "Likes"	Alumni "Likes"	Student Veteran "Likes"	Responses
City College of Chicago-Richard Daley	2,203			M, S
City College of Chicago – Truman	5,150			
City College of Chicago – Wilbur Wright	4,352			
City University of New York – City College	28,066	736		
City University of New York – College of Statton Island	3,512			
City University of Seattle	6,021			L
Clarion University of Pennsylvania	13,271	124		
Clarke University	3,573	1,724		
Clark State Community College	4,200			
College of Staten Island	3,512			
Clackamas Community College	5,099		314	
Claremont Graduate University	6,721			
Clark College	8,240	1,123	255	M
Clarkson University	14,963	204		
Clary Sage College	6,444			
Clayton State University	6,004			
Cleary University – Howell	1,453			
Clemson University	160,198	23,751		M, S
Cleveland Chiropractic College	1,780			
Cleveland State Community College	3,056			
Cleveland State University	28,967	6,370	294	
Clinton Community College (Iowa)	5,293			
Cloud County Community College	3,230		33	
Clover Park Technical Park	4,325			
Coastal Bend College	5,027	60		
Coastal Carolina University			73	M, S
Coastal Pines Technical College	1,149			
Coastline Community College				C/1, M, S
Coker College	6,155			
College for Financial Planning	17,501			
College of Business and Technology	5,562			
College of Central Florida	6,168			
College of Charleston	57,627			
College of DuPage				C/1
College of Marin	3,925		26	
College of Mount Saint Vincent	1,929			
College of New Rochelle	3,771			
College of Saint Rose	9,179	20	95	

HED Institution	University "Likes"	Alumni "Likes"	Student Veteran "Likes"	Responses
College of San Mateo	7,312		13	
College of Southern Idaho	7,767		25	
College of Southern Maryland	4,274		5	M
College of Southern Nevada	14,754			
College of the Desert	9,465		161	
College of the Redwoods	4,424		44	
College of the Sequoias	5,439			
*College of Westchester	3,541	114		
College of William and Mary	50,912		328	
Collin College	4,683		282	
Colorado Mesa University	18,545			
Colorado State University – Fort Collins	110,020	8,192		
Colorado State University – Global Campus	5,239		97	L
Colorado State University - Pueblo	7,583			
*Colorado Technical University – Colorado Springs	120,797	256		C/1
*Colorado Technical University – Denver	120,876			
*Colorado Technical University – Online	116,359			
Columbia Basin College		72		
Columbia College – Chicago	36,111		215	C/2
Columbia College – Missouri	14,228			
Columbia College – Sonora	794			
*Columbia Southern University	9,026		730	L
Columbia University			365	
Columbus State Community College			47	C/1
Columbus Technical College	7,286			
Commercial Diving Academy	368			
Commonwealth Medical College	1,964			
Community Care College	4,675	153		
Community College of Allegheny County	7,112			S
Community College of Aurora	14,850			
Community College of Baltimore	15,911			
Community College of Beaver County	3,219			
Community College of Denver	5,107			
Community College of Philadelphia	10,563		86	
Community College of Rhode Island	9,810			
Community College of the Air Force				C/1

HED Institution	University "Likes"	Alumni "Likes"	Student Veteran "Likes"	Responses
Community College of Vermont	4,358			
Communiveristy of Texas	204		3	S
Concord University	8,411		7	
*Concorde Career Colleges	5,003			
Concordia University - Chicago		3,171		
Concordia University – Irvine	7,763	802		
Concordia University of Wisconsin	8,145	2,640		
Concordia University – Saint Paul	6,716			
Contra Costa Community College	422			
Copiah Lincoln Community College	7,635			
Copper Mountain College	1,242			
Cornerstone University	5,328	1,947		
Cosumnes River College	3,201			M, R, S
County College of Morris	7,336	6		
Coursera				C/1
Crafton Hills College	1,474			
Craven Community College	3,873			
Cuesta College	3,920		12	
Cumberland University	4,558			
CUNY Queens College	28,774			
CUNY Queens Borough Community College	16,612			
Cuyahoga Community College	12,449			
Cuyamaca College	1,860		43	
Cypress College	10,800		369	S
Daemen College	4,297	112		
Dakota College at Bottineau	1,938			
Dakota County Technical College	2,909			
Dakota State University	40,796			
Dallas Baptist University	16,718			
Dalton State University			106	
*Daniel Webster College	2,201			L
Danville Community College	2,663			
Darton State College	4,320			
Davenport University - Grand Rapids	2,833			
Davidson County Community College	4,733			
Davis & Elkins College	3,815			
*Daymar College	6,667			
Daytona State College	10,709		99	
DeAnza College	10,881			
Defense Acquisition University	4,219			

HED Institution	University "Likes"	Alumni "Likes"	Student Veteran "Likes"	Responses
Defiance College	3,901	1,035		
Del Mar College	9,226	774		L
Delaware State University	12,193			
Delaware Technical Community College	4,019			L
Delaware Technical Community College – Owens		74		
Delaware Technical Community College – Terry	226			
Delaware Valley University	17,672			
Delta College	9,075		299	
DePaul University	55,717		116	
*DeVry University	205,011			
*DeVry University - Addison	585			
*DeVry University - Chesapeake	105			
*DeVry University – Elk Grove	17			
*DeVry University - Federal Way	305			
*DeVry University - Houston	732			
*DeVry University – Keller Graduate School of Management – San Diego	38,662			
*DeVry University - Long Beach	349			
*DeVry University - North Brunswick	712			
*DeVry University - Orlando	347			
Diablo Valley College	9,462			
Dickinson State University	5,269	1,192		
Diverse Issues in Higher Education	29,163			
Divers Institute of Technology	1,137			
Dixie State University	13,565			
Doane College – Crete		2,958		
Dominican University of California	5,475			
Dowling College	3,526			
Drake University Law School	918			
Drexel University - Online	6,176			
Drexel University - Pennsylvania	61,634			
Drury University	9,729	2,937	16	
Duke University	286,380			
Duquesne University	13,122		60	
D'Youville College	6,693		36	
East Carolina University	29,883			
East Central University	10,312			
East Los Angeles College	854		95	

HED Institution	University "Likes"	Alumni "Likes"	Student Veteran "Likes"	Responses
East Tennessee State University	9,159			
Eastern Florida State College	12,593			
Eastern Florida State College – Melbourne	72			
Eastern Illinois University	27,017			
Eastern Iowa Community College			129	
Eastern Kentucky University	40,288			C/1
Eastern Maine Community College	3,375		267	
Eastern Michigan University	22,461			
Eastern New Mexico University	8,705			
Eastern University	36,770			
Eastern Washington University	29,510			
Eastwick College	1,679			
Eckerd College	11,286			
*ECPI University	11,628			M
*ECPI University – Charleston	69			
*ECPI University - Columbia	12,036			
*ECPI University – Newport News	23			
*ECPI University – Raleigh	7	115		
*ECPI University – Richmond Emerywood	21			
Edgecombe Community College	3,049			
Edgewood College	4,994		208	
Edinboro University of Pennsylvania	17,291			
Edmonds Community College	25,413			
Education Weekly	1,389			
Elgin Community College		8,018	110	
Ellsworth Community College	2,563			
Elmhurst College	7,483			
Elmira College	5,798			
El Paso Community College	47,344			
Embry Riddle Aeronautical University	31,131		81	C/8
Emory University	60,264			
Emporia State University	12,806		13	V
Emporia State University Distance Education	201			
Estrella Mountain Community College	4,484			
Everest College	545			
Everest University – South Orlando	2,104			
Everett Community College	13,459			
Excelsior College	8,442			C/1

HED Institution	University "Likes"	Alumni "Likes"	Student Veteran "Likes"	Responses
Excelsior Community College	5,489			
Fairmont State University	12,357			
Farmingdale State College	7,119			M, S
*Fashion Institute of Design and Merchandising	48,013			
Fayetteville State University	9,526		26	
Fayetteville Technical Community College	5,659			
Ferris State University	40,965			
Fielding Graduate University	1,954			L
Finger Lakes Community College	3,319		40	
First Coast Technical College	2,135			
Fisher College	3,706			
Florida A & M University			795	
Florida Atlantic University	53,697		42	
Florida Gateway College	8,584			
Florida Gulf Coast University	19, 785			
Florida Institute of Technology	24,210			
Florida International University	97, 477		15	
Florida Memorial University	2, 730			
Florida Southwestern State College	8,386			
Florida State College- Jacksonville	20, 814			
Florida State University	147, 540		792	L
Florida State University – Panama City	2, 441			
Foothill College	472		31	
Fordham University	45,857			
Forsyth Technical Community College	2			
Fort Hays State University	18, 018	2, 827	62	
Fountainhead College of Technology	3,193			
Four M Welding School	1,332			
Fox Valley Technical College	9, 934			
Framingham State University	6,136			
Franklin College		4,842		
Franklin University	9,000			
Fresno Pacific University	5,304			
Friends University	6,758			
Front Range Community College – Boulder	149,159			
Front Range Community College – Larimer	6, 60l			
Front Range Community College – Westminster	7,127			

HED Institution	University "Likes"	Alumni "Likes"	Student Veteran "Likes"	Responses
Frostburg State University	13, 404			
Fuller Theological Seminary	10,702			
Fullerton College	12,436			M
*Full Sail University	1,029,088			
Gadsden State Community College	248			
Galveston College	1,752			
Gannon University	13, 021			
Gardner Webb University	2,761			
Garrett College	2, 023		18	
Gateway Community College	10,729		81	
Gateway Technical College	5, 190		78	
George Mason University	103,929			
George Washington University	121,947			
Georgetown College	8,290			
Georgetown University	109,469		267	
Georgia Gwinnett College	11,154			
Georgia Highlands College	4, 760			
Georgia Institute of Technology	2,553			S
Georgia Military College – Valdosta	3,116			
Georgia Perimeter College	13, 730			
Georgia Southern University	65, 211		173	
Georgia State University	76,377			L
Germanna Community College	11,219			
Glendale Community College - Arizona	9,867			
Glendale Community College – California	17,792			
Glenn Oaks Community College	2,579			
Glenville State College	5,091			
*Globe University - Woodbury	1,019			
Gogebic Community College	4,960			
Golden Gate University	5,052		2	
Golf Academy of America - Myrtle Beach	14			
Gordon State College	3,137			
Grace Bible College	2,850			
Grace College and Theological Seminary	8,838			
Grace College of Divinity	451			
Grace University	2,935		252	
*Grand Canyon University	285, 195			C/1
Grand Valley State University	43,250		23	

HED Institution	University "Likes"	Alumni "Likes"	Student Veteran "Likes"	Responses
Granite State College	1,691			
*Grantham University	8,780			C/2
Grays Harbor College	3,103			
Grayson College	2,211			
Great Basin College	1,419		439	
Great Bay Community C.	2,557			
Great Lakes Maritime Academy	2,263			
Green River Community College	156			
Greenville Technical College	10,989			
Grossmont College			132	
Guilford Technical Community College	3, 298			
Gulf Coast State College	10,257			
Gustavus Adolphus College	12,507		39	
Gwinnett Technical College	6,120			
HACC – Central Pennsylvania Community College	6,456			
Hagerstown Community College	6, 585			
Hallmark University	1,193			
Hamline University	9,467			
Hamline University - School of Law	1,592			
Hancock College				M
Han University of Traditional Medicine	227			
Hardin Simmons University	6,885			
Harford Community College	6,821			
Harold Washington College	3,735			S
Harrisburg University of Science and Technology	3,407			
Harry S. Truman College	4,898			
Hartnell College	3,077			
Hawaii Pacific University	23,431		145	C/1
Hawkeye Community College	5,015		69	
Haywood Community College	4,100			
Hazard Community & Technical College		1,208		
*Heald College- Rancho Cordova	201			
Heartland Community College	4,098			
Henley-Putnam University	7,955		22	C/2, B, S
Heritage Christian University	1,747			
Herzing University	2,009			L
Hibbing Community College	925			
Higher Education Works	8,502			

HED Institution	University "Likes"	Alumni "Likes"	Student Veteran "Likes"	Responses
Hillsboro Aviation	27,868			
Hillsborough Community College	13,029			
Hillsdale College	37,268			
HDS Truck Driving Institute	761			
Hocking College	10,905			
Honolulu Community College	3,261			
Hope International University	4,769	999		
Hopkinsville Community College	3,036			
Horry Georgetown Technical College	6,408			
Houghton College	12,346	2,612		
Housatonic Community College	6,079			
Houston Community College			10	
Howard College-San Angelo	1,260			
Howard Community College	7,944			
Howard Payne University	4,823			
Hudson County Community College	4,937			
Hudson Valley Community College	15,584			
Humboldt State University	26,185	4,979		
Huntington College of Health Sciences	956			
Huntington University	6,533			
Husson University	4,988		93	
Hyper Learning Technologies, Inc.	87			
IBMC College	4,582			L
Idaho State University	20,089		507	
Illinois State University	43,727			
Indiana Institute of Technology	652			
Indiana State University	29,693			
Indiana University of Pennsylvania	40,019		71	
Indiana University Purdue University-Columbus	1,863		746	
Indiana Purdue University – Indianapolis	32, 805			
Indiana University – Bloomington	231,406		93	
Indiana University – South Bend	5,575			
Indiana University – South East	364			
Indiana Wesleyan University	25,128	2,511		
Indian Hills Community College	1,754			
Infotech Career College	515			S
Institute of Culinary Education	9,407			
Institute of Design & Construction	412			
International Culinary Center	36,149			

HED Institution	University "Likes"	Alumni "Likes"	Student Veteran "Likes"	Responses
International Trucking School	578			
Inver Hills Community College	3,426			
Iowa Lakes Community College	4,355	400		
Iowa State University	65,248		123	
Iowa Wesleyan College		2,884		
Irvine Valley College	4,671			
Island Drafting & Technical Institute	119			
Ivy Technical Community College - Bloomington	98,516		74	
Ivy Technical Community College - East Central	2,383			
Ivy Technical Community College – Kokomo	7			
Ivy Technical Community College – Lafayette	3,365			
Ivy Technical Community College - North Central	497			
Ivy Technical Community College – Richmond	509			
Ivy Technical Community College - Wabash Valley	160			
Jackson State Community College	6,556		43	
Jacksonville State University	22,062	7,044		
Jacksonville University	11,730		74	
James Madison University	63,567			
Jamestown Community College	3,107			
Jefferson College	6,262			
Jefferson Community College	6,289			
John Carroll University	11,315	353	20	
John Hopkins University	550			L
John Jay College of Criminal Justice	31,154			
John Marshall Law School – Chicago	3,748			
John Tyler Community College	4,577			
Johnson & Wales University	46,024			
Johnson County Community College	19,587			
Johnson State College	7,785			
Johnston Community College	3,382			
Joliet Junior College	11,573			
Jones International University	1,439			
Judson College	3,475	1,295		
Kalamazoo Valley Community College	8,304			
Kankakee Community College	5,241			

HED Institution	University "Likes"	Alumni "Likes"	Student Veteran "Likes"	Responses
Kansas State University	134,411			C/1
Kapiolani Community College	2,373			L
*Kaplan Career Institute–Franklin Mills	1,237			
*Kaplan Career Institute – Harrisburg	134			
*Kaplan Career Institute – Pittsburgh	76			
*Kaplan College – Dayton	375			
*Kaplan University	281,480			
*Kaplan University – Arlington	454			
*Kaplan University – Chula Vista	166			
*Kaplan University – Corpus Christi	314			
*Kaplan University – Davenport	300,535			
*Kaplan University – El Passo	385			
*Kaplan University – Hammond	900			
*Kaplan University – Laredo	253			
*Kaplan University – Lincoln	1,242			
*Kaplan University – Modesto	339			
*Kaplan University – Nashville	1,198			
*Kaplan University – Omaha	1,143			
*Kaplan University – Palm Springs	311			
*Kaplan University – Riverside	516			
*Kaplan University – Sacramento	167			
*Kaplan University – San Pedro	474			
*Kaplan University – Southeast Indianapolis	13			
Kaskaskia College	3,322			
Kaua'i Community College			7	
Kean University	26,704			
Keiser University- College of Golf and Sport	23,138		7	
*Keiser University - Melbourne	302			
*Kendall College	15,838			
Kennedy King College	1,642			
Kennesaw State University	33,444		172	
Kent State University	64,348			
Kent State University – Ashtabula	17,868		118	
Kent State University – Stark	4,656			
Kent State University – Tuscarawas	2,615			
Kentucky State University	3,387			
Key College	692			
Keystone College	3,873			D, M
Keystone Technical Institute	1,156			

HED Institution	University "Likes"	Alumni "Likes"	Student Veteran "Likes"	Responses
Kilgore College	7,199			L
Kirkwood Community College	16,328			
Kishwaukee College	4,312			
Klamath Community College	1,902			
Kutztown University of Pennsylvania	23,751			
L'Academie de Cuisine	3,053			
Lake Area Technical Institute	5,502			
Lake Land College	8,618		82	
Lake Region State College	1,661			
Lakewood College	4,830			L
Lamar Community College	1,318			
Lamar University	28,397	4,665	164	
Lanier Technical College	1,783			
Lansing Community College	11,224	2,623	89	
Laramie County Community College	5,961			
La Roche College	3,540			
Lasell College	3,890			
Las Positas College	1,473		32	
Lawrence Technological University	7,417			
Lee College	5,048	6	148	
Leeward Community College	3,247		44	
Lehigh Carbon Community College	7,326			
LeMoyne College			25	
Lewis University	11,443	5,102	128	
Lewis & Clark Community College	7,579			
Lewis & Clark State College	8,269			
Liberty Theological Seminary				C/1
Liberty University	161,604			
Lincoln College of Technology - Indianapolis	2,886			
Lincoln College of Technology – Nashville	3,322			
Lincoln Land Community College	8,016			
Lindenwood University	14,669	1,006	67	
Lindsey Wilson College – Ashland	5,143			S
Linn Benton Community College	3,550			
Lipscomb University	10,012	1,593	390	
Livingstone College		353		
Lock Haven University	7,950	2,450		
Lone Star College - Cyfar	43		27	S
Long Beach City College	17			

HED Institution	University "Likes"	Alumni "Likes"	Student Veteran "Likes"	Responses
Long Island Business Institute	4,710			
Long Island University Post	1,301			
Lorain County Community College	10,580			
Los Angeles City College	24,514			
*Los Angeles Film School	168,188			
Los Medanos College	4,556			
Louisiana State University	766,071		747	
Louisiana Technical University	42,000			
Lower Columbia College	4,064		118	
Loyola Marymount University	25,017			M, S
Loyola University - Chicago	31,006			S
Loyola University - New Orleans	22,836		28	
Lubbock Christian University	7,362		14	M
Luther College	12,499			
Lycoming College	5,962			
Lyndon State College	15,945		204	
Macomb Community College	16,770			
MacMurray College	2,327			
Madison Area Technical College	501			
Madonna University	4,721			
Malcom X College	3,259			
Manchester Community College	3,618			
Manhattan Christian College	2,724			
Manhattan College	11,636			
Manor College	1,801			
Marian University - Wisconsin	4,898			
Marion Technical College	8,810			
Marlboro College	37			
Marquette University of Law School	41,668			
Marshall University	53,807		364	
Mary Baldwin College	7,817			
Maryland Institute College of Art	45,281			
Marylhurst University	4,201			L
Marymount California University	2,219		13	
Marymount University	7,421			
Marywood University	8,710		159	
Massachusetts Bay Community College	10,795			
Massachusetts Maritime Academy	6,872			
Massasoit Community College			117	
Mayland Community College	1,962			
Mayville State University	2,822			

HED Institution	University "Likes"	Alumni "Likes"	Student Veteran "Likes"	Responses
McHenry County College	4,320			
McKendric University – Online	2,787			
McKinley College	745			
McLennan Community College	8,731		36	
McMurry University	5,508			
Medaille College		12	215	
Merced College	4,951			
Mercer County Community College	6,274			
Mercer University	14,689			
Mercy College	24,774			
Mercyhurst College	13,396			M
Mesa Community College	8,214		80	
Methodist University				C/1
Metropolitan Community College	1,203			
Metropolitan Community College - Nebraska	5,129			M
Metropolitan State University - Denver	19,427			
Miami Dade College				C/1
*Miami International University of Arts and Design	5,037			M
Miami University	60,808		80	
Miami University - Middletown			306	
Miami University - Hamilton	3,800		134	
MIAT College of Technology	2,423			S
Michigan State University	387,787			
Michigan Technological University	26,745			
Mid-Atlantic Christian University	3,689			
Middle Tennessee State University	50,773			
Middlesex County College	6,942		141	
Midland College	9,159			
Midlands Technical College	7,898			
Mid-South Community College	4,245			
Midstate College	953			
Mid-State Technical College	5,344			
Midwestern State University	9,385		68	S
Midwest Technical Institute	32,178			
Military Training				C/6
*Miller - Motte College - Fayetteville	126			
Millersville University of Pennsylvania	15,509			
Milwaukee Area Technical College	16,393			
Milwaukee School of Engineering	6,985			

HED Institution	University "Likes"	Alumni "Likes"	Student Veteran "Likes"	Responses
Minneapolis Community College	7,108			
Minnesota School of Business	1,910			
Minnesota State College – Southeast Technical	2,170			
Minnesota State Community and Technical College	1,682			
Minnesota State University – Mankato	22,761	3,365		
Minot State University	8,584		76	
Mississippi Gulf Coast Community College	8,395			
Mississippi State University	131,920	382		
Mississippi University for Women	4,888			
Missouri Southern State University	17,855		186	M
Missouri Baptist University	5,073	771		C/2
Missouri State University - Springfield	60,905		799	S
Missouri Tech	246			
Missouri University of Science and Technology	16,068			
MIT		37,814		
Mitchell Technical Institute	2,995			
Moberly Area Community College	4,461			
Modesto Junior College				C/1
Mohawk Valley Community College	7,906			D, M
*Monroe College	12,126			S
Montana State University – Billings and City College	84			
Montana State University – Northern	2,843			
Montclair State University	24,040		358	
Monterey Institute of International Studies	21,849			
Moraine Park Technical College	3,272			
Moraine Valley Community College	10,572			
Morehead State University	31,999			
Morgan State University	48,004			
Morton College	4,722			
Motorcycle Mechanics Institute	216,959			
Mount Marty College	1,652			
Mount Mary University	6,787			
Mount St. Joseph University	5,911			
Mount St. Mary's University	10,562			
Mount Wachusett Community College	6,761			
Mountwest Community & Tech College	4,039			

HED Institution	University "Likes"	Alumni "Likes"	Student Veteran "Likes"	Responses
Mountain Empire Community College	3,263			
Mountain View College	5,578			
Mt. Mercy University	12			
Mt. Hood Community College	5,452		22	
Muhlenberg College	7,697			
Murray State College	3,604			
Murray State University	29,617		464	
Muskegon Community College	4,865			
NASCAR Technical Institute	16,095			
Nash Community College	5,724			
Nassau Community College	26,960		19	
National Aviation Academy - New England	9,362			
National Graduate School of Quality Management	420			S
National Louis University	8,165			
National Tractor Trailer School	1,429			
National University	71,124			
*National University College	650			
*National University College – Online	15			
Navarro College	14,933			
Nazareth College	10,494		363	
Nazareth College of Rochester	280			
Nebraska Methodist College	2,266			
Nebraska Wesleyan University	10,887			
Neumann University	3,486			S
Newbury College	2,514			
New Jersey City University	13,883	12,910		
Newman University	5,601			
New Mexico State University – Alamogordo	1,553			
*New School of Architecture and Design	28,373			
New York Chiropractic College	3,914			
New York Film Academy	851,098		884	
NHTI Concord's Community College	5,208			
Niagara County Community College	4,430			
Niagara University	12,825		92	M, S
Nicholls State University	14,527			
Norfolk State University	23,623	1,715	762	
North American Trade Schools	123			

HED Institution	University "Likes"	Alumni "Likes"	Student Veteran "Likes"	Responses
Northampton Community College	11,706			
North Carolina Central University	22,295			
North Carolina State University	118,809			
North Carolina Wesleyan College	2,098			
North Central Michigan College	2,917			
Northcentral Missouri College	1,281			
North Central State College	2,939			L
North Central Texas College	13,363			
*North Central University				C/1, L
North Colorado University			17	
North Country Community College	1,386			
North Dakota State	41,274			
North Idaho College	9,673			S
Northeast Community College – Nebraska	4,227			
Northeastern Seminary	822			
Northeastern State University	17,116			
North East Iowa Community College	2,181			
North Lake College	7,402			
Northland College	6,004			
Northland Community & Technical College	118			
North Park University	8,068		117	
North Seattle College	5,012			
North Shore Community College	4,473		266	
North Central Technical College	5,056			
Northcentral University	58,704			
Northern Illinois University				L
Northern University				S
North East Iowa Community College	2,167			
Northeast State College	5,049			
Northeast State Community College	554			
North Eastern Illinois University	18,254		382	
Northern Arizona University	36,368	33,583		
Northern Illinois University	59,286	14,227		
Northern Kentucky University	19,156		158	
Northern Michigan University	23,868	3,458	82	
Northern New Mexico College	2,348		28	
Northern State University	4,162			
Northland College	6,004			
Northwest Arkansas Comm. College	7,139			

HED Institution	University "Likes"	Alumni "Likes"	Student Veteran "Likes"	Responses
Northwest Florida State College	5,925			
Northwest Kansas Technical College	320			M, S
Northwest Missouri State University	150,289			
Northwest Renewable Energy Institute	15,757			
Northwest Shoals Community College Alexandria	4,713			
Northwest Technical College	820			
Northwestern University	14,630		146	
Northwestern Michigan College	7,968			
Northwestern Oklahoma State University	7,792			
Northwestern State University	21,305			
Northwestern Technological Institute	1,980			
Northwood University	4,574			
Norwalk Community College	9,616		8	
Norwich University	16,033	809	297	C/2, M
Notre Dame de Namur University	4,718			
Notre Dame of Maryland University	5,254			
Nova Southeastern University	38,530			
Nyack College	16,531			
Oakland City University	2,571			
Oakland Community College	12,317		65	
Oakland University	33,465			
Oakton Community College	4,389			
Ocean County College	13,303			
Odessa College	11,350		26	
Ogeechee Technical College	2,984			
Ohio Christian University	6,515			
Ohio Dominican University		713		
Ohio Northern University		1,600		
Ohio State University			286	M, S
Ohio Technical College	827			
Ohio University – Zanesville	2,002			
Oklahoma Baptist University	11,622			
Oklahoma City Community College	12,209			
Oklahoma State University	166,954			
Oklahoma Technical	3,109			
Oklahoma Wesleyan	4,441	672		
Old Dominion University	52,254			
Olive Harvey College	2,673			
Olivet College	4,045			

HED Institution	University "Likes"	Alumni "Likes"	Student Veteran "Likes"	Responses
Olivet Nazarene University	15,851			
Olympic College	499			
Onondaga Community College	10,665			
Oral Roberts University		12,933		
Orange Coast College	8,504		72	
Orange County Community College	3,195			
Oregon Institute of Technology	2,798			S
Oregon State University	143,022			
Orleans Technical Institute	5,471			
Ottawa University – Kansas	6,146	963		
Ottawa University – Wisconsin	608			
Owensboro Community Technical College	3,522			
Oxnard College	4,372		114	
Pace University - New York	33,213	6,569	327	
Pacific Lutheran	17,895			
Palm Beach Atlantic University	12,715			M, S
Palm Beach State College - Central	18,047		37	S
Palo Alto College	6,708		315	
Palo Alto University	3,355		42	
Palomar College	7,842		8	
Park University	14,597	1,658	257	C/2
Parker University	3,122			
Parkland College	9,197		169	
Patrick Henry Community College	4,116			
Paul Smith's College or Arts and Science	5,388	1,812		
Peak Technical Institute	544			
Penn Foster Career School	1,488			C/1
Penn State – DuBois	365,809	184	4	
Penn State – Harrisburg	5,821			
Penn State – Schuykill	2,650			
Penn State – The Behrend College	6,123	918		
Pennsylvania College of Technology	14,744			
Pennsylvania Highlands Community College	3,933			
Pennsylvania Institute of Technology	4,874			
Pennsylvania State University	366,425	25,270	260	C/2, R, S
Pensacola State College	4,074		57	
Pepperdine University	37,528			
Perry Technical Institute	2,486			

HED Institution	University "Likes"	Alumni "Likes"	Student Veteran "Likes"	Responses
Peru State College	5,475			
Pfeiffer University	2,957	4		
Phoenix College	9,094		84	
Piedmont Virginia Community College	3,647			
Pierce College - Fort Steilacoom	5,144		50	C/2, L
Pierce College – Puyallup	70			
Pierce College - Los Angeles	16,788			
Pike's Peak Community College				M, V
Pine Technical & Community College	1,250			
Pinnacle College	1,281			
Pitt Community College	3,977			
Pittsburgh Institute of Aeronautics	5,688			
*Pittsburgh Technical Institute	5,879			
Pittsburg State University	38,280			
Platt College – San Diego	2,901			
Point Park University	11,675			
*Porter and Chester Institute	5,601			L
Porterville College	1,997		44	
Portland Community College	8,565			
Portland State University	35,307		209	
Potomac State College of West Virginia	5,128			
Prairie State College	4,468			
Prairie View A&M University	19,066		33	
Professional Golfers Career College	2,103			
Providence College of Continuing Education	11,048			
Pueblo Community College	8,146			
Purdue University	186,113	972	48	L, M
Queens College – City University of New York	29,122			
Quincy College	3,072		73	
Quincy University	4,322			
Quinebaug alley Community College	1,560			
Quinnipiac University	22,736		165	
Reading Area Community College	2,793			
Redstone College	2,143			
Refrigeration School	5,721			
Regent University		39		
Regis University	32,375	3,614		
Rend Lake College	4,252			S
Rensseelar Polytechnic Institute	17,513			

HED Institution	University "Likes"	Alumni "Likes"	Student Veteran "Likes"	Responses
Renton Technical College	1, 323		33	
Rhima Bible Training College	47,598			
Rhode Island College	17, 752		125	
Richard Bland College of the College of William & Mary		5,827		
Richard Stockton College of New Jersey	15,292			
Richland College	13, 417			
Richmond Community College	2, 870			
Rider University	10,476		823	
Ridgewater College	6,150			
Rio Grande Community College	4,908			
Rio Salado College	7,243			
Riverside City College	8,844			
River University	4,686			
Robert B. Miller College	1,372			
Robert Morris University	13,697			
Roberts Wesleyan College	6, 854			
Rob Roy Academy	1,887			
Rochester Institute of Technology	57,828			
Rockford University	4,699			
Rock Valley College	8, 569		43	
Rocky Mountain College	3,614			
Rocky Mountain College of Art & Design	18,184			
*Rocky Vista University		151		
Roger Williams University	83,288	1,473		
Rogers State University	7,095		40	
Rogue Community College	4,420			
Rosedale Technical College	2,253			
Rose State College	7,357			L
Rowan College at Gloucester County	8,814			
Rowan University	23,884			
Rutgers University – Camden	7,761	1,310		
Rutgers University – Newark	7,862			
Rutgers University - New Brunswick	60, 739		1,033	
Sacramento State University	31,303			
Saddleback College	8,795			
Saint Cloud State University	28,102		66	L, M, S
Saint Francis University	8, 427		69	D, M
Saint John Fisher College	8, 308		50	

HED Institution	University "Likes"	Alumni "Likes"	Student Veteran "Likes"	Responses
Saint Joseph's College – Online	5,928			
Saint Leo University	25, 043			L
Saint Martin's University	5,646			
Saint Mary of the Woods College	4,654			
Saint Michael's College	11,736		149	
Saint Vincent's College	8,901			
Saint Xavier University	6,502		151	
Salem State University	11,069		138	
Salisbury University	8,481	5,572	142	
Salt Lake Community College	11,194			
Salve Regina University		125		
Sam Houston State University	66,889			
San Antonio College	19,256	43		
San Bernardino Valley College	8,940		54	
Sandhills Community College		743		
San Diego City College	6,893			
San Diego Mesa College	2,646		110	
San Diego Miramar College	3,247		68	
San Diego State University	85,957			L
San Francisco State University	39,329			
San Jacinto College	15,640		1,392	
San Jacinto College - North Campus	1,336			
San Jacinto College - South Campus	659		88	
San Jose City College	1,927		27	
San Jose State University	43,701		310	
San Juan Community College	4,074			
Santa Ana College	11,052		123	
Santa Barbara City College	23,771	1,475		
Santa Fe College	14, 886		94	
Santa Fe Community College	4,286		53	
Santa Monica College	23,190			
Santiago Canyon College	4,734			
Sauk Valley Community College	2,996			
Savannah Technical College	12,853			
Schenectady County Community College	979			
Schiller International University	2,494			
School of Hairstyling	1,037			
*School of the Visual Arts	75,651			
Scottsdale Community College	3,489		25	
Seattle University	28,964		172	

HED Institution	University "Likes"	Alumni "Likes"	Student Veteran "Likes"	Responses
Seminole State College - Florida	18,185		130	
Seton Hall University	19,652	54		
Seton Hill University	5,336		99	
Sheffield Institute for the Recording Arts	10,949			
Shepherd University	5,382	71	103	
Sheridan College	29,558		80	
Sherman College of Chiropractic	1,006			
Shippensburg University	19,717			
Shoreline Community College	3,986		128	M, V
Siena College	26,705			
Siena Heights University	5,252			
Sierra College	24,938	366	42	L
Sierra Nevada College	348		65	
Simpson College	8,207			
Skagit Valley College	4, 260		60	
South Arkansas Community College	5,624			
South Dakota of Mines & Technology	37,947			
South Dakota State University	36,760		141	
South Georgia Technical College	3,833			
South Mountain Community College	2,845			
South Piedmont Community College	2,837			
South Plains College	3,522		22	
South Texas College	12,904			
*South University	42,523			
*South University - Online	18			
*South University - Columbia	162			
*South University - Tampa	120		36	
*South University - Virginia Beach	890			
Southcentral Kentucky Community Technical College	4,230			
Southeast Community College	3,000		28	
Southeast Missouri State University	23,692			
Southeastern Illinois College	3,498			
Southern Arkansas University	12,075			
Southern California Seminary	809			
Southern California University of Health Sciences	2,957			
*Southern Careers Institute	620			
Southern Connecticut State University	16,721		31	
Southern Crescent Technical College	5,682			

HED Institution	University "Likes"	Alumni "Likes"	Student Veteran "Likes"	Responses
Southern Illinois U. - Edwardsville	14,840			C/1, M, R
Southern Illinois U. - Carbondale	64,862			
Southern Maine Community College	6,645			
Southern Methodist University	49,330			
Southern New Hampshire University	40,682	13		S
Southern Oregon University	13,145			
Southern Union State Community College	7			
Southern Utah University	12,495			
Southern Vermont College	2,053		45	
Southern Wesleyan University	3,470			
South Piedmont Community College				L
South Puget Sound Community College	5,139			
Southside Virginia College	1,842			
Southwest Baptist University	5,411			
Southwest Georgia Technical College	378			M
Southwest Minnesota University	5,533			
Southwest Mississippi Community College	6,873			
Southwest Texas Junior College	4,823			
Southwest University		2,529		
Southwest University - El Paso	8,417			
Southwest University – Kenner				L
Southwestern Assemblies of God University	14,788			
*Southwestern College - Kansas	491	1,214		C/1
Southwestern Illinois College - Belleville	558			
Southwestern Michigan College	4,261			
Southwestern Oklahoma State University	11,682			L
Southwestern Oregon Community College	3,377			
Southwestern University	8,450			
Spalding University	3,504		21	
*Spencerian College – Louisville		178		
Spokane Community College	1,002	265	71	M
Spokane Falls Community College	928			M
Spoon River College	2,743			
Spring Arbor University	9,303	3,042	27	S
St. Ambrose University	8,994		125	
St. Andrews University	22,273			

HED Institution	University "Likes"	Alumni "Likes"	Student Veteran "Likes"	Responses
St. Bonaventure University	11,913	3,604	64	
St Charles Community College	9,296			
St. Clair County Community College	7,076			
St. Ambrose University	9,677			
St. Johns University - Queens	24,893		132	M, V
St. Louis Community College - Forest Park	10,499		5	
St. Mary's University			65	
St. Paul College	6,373			L x 2
St. Petersburg College	20,093			
St. Petersburg College - Clearwater	2,393			
St. Thomas Aquinas	4,512			
Stanford University		937		
Stanly Community College	3,623			
State College of Florida – Bradenton	450			
Stautzenberger College	2,321			
Sterling College	3,725			
Stevens Institute of Business & Arts	2,888			
Stevenson University	7,931		64	S
Stockton College	15,186			
*Stratford University - Virginia Beach	16,510			
*Stratford University - Alexandria	68			
*Stratford University - Baltimore	275			
*Stratford University - Newport News	160			L, S
*Stratford University - Woodbridge	147			L
*Strayer University	203,138			
Suffolk County Community College	11,207		60	
Suffolk University	20,662		201	S
SUNY Adirondack	4,705		150	
SUNY – Binghamton	41,003	7,521	90	
SUNY – Broome Community College	13,108			
SUNY – Buffalo	37,769			
SUNY - Buffalo State	17,930			
SUNY - College of Oswego	18,922		178	
SUNY - Empire State College	9,511		142	
SUNY - Farmingdale State College	7,109			S
SUNT – Maritime College	9,587			
SUNY - Morrisville State College	7,678			
SUNY – Old Westbury	5,000			
SUNY - Orange County Community College	5,938			

HED Institution	University "Likes"	Alumni "Likes"	Student Veteran "Likes"	Responses
SUNY – Oswego	18,987	1,548		
SUNY – Plattsburgh	27,680			
SUNY – Potsdam	9,739			
SUNY - Stony Brook	34,982			
SUNY – Ulster County Community College	3,409			
SUNY – University of Albany		8,749		
SUNY - Westchester Community College	18,548			
Sussex County Community College	4,282		115	V
Syracuse University	151,271	17,283	1,895	
Tacoma Community College	4,110			
Tallahassee Community College	14,078			
Tarleton State University	31,843			
Tarrant County College	24,800			
Tauro Law Center	1,518			
Technical College of the Lowcountry	4,351			
Temple College			27	
Temple University	60,977		53	D, M
Tennessee State University	18,633			
Tennessee Technological University	42,937			
Tepper School of Business	6,588	982		
Terra State Community College	2,628			L
Texas A&M University	526,073	3,484	293	
Texas A&M University - Kingsville	26,563			L
Texas A&M University - College Station	531,036			
Texas A&M University - Commerce	15,562			
Texas A&M University - Corpus Christi	28,711			
Texas A&M University – International	24,285			
Texas A&M University – School of Business	713			
Texas A&M University - Texarkana	7,494			
Texarkana College	7,347			
Texas Christian University	66,493		118	
Texas Southern University	23,051			
Texas State Technical College - Harlingen	3,499			
Texas State Technical College – Marshall	1,180			
Texas State Technical College - Waco	5,936			S
Texas State University	102,301			

HED Institution	University "Likes"	Alumni "Likes"	Student Veteran "Likes"	Responses
Texas Tech University	208,817			
Texas Wesleyan University			71	
Texas Woman's University	12,295			
The American University of Rome	6,254			
The Catholic University of America	16,819			
The Citadel Military College South Carolina	18,267			
The Evergreen State College	16,882			
The National Academy of Sports Medicine	275,150			
Thomas Edison State College	9,089		414	C/2
Thomas More College	3,038			
Thomas University	964		50	
Three Rivers College - Poplar Bluff	9,294		66	L
Tidewater Community College	15,360			C/1, S, V
Tiffin University	5,612		90	
Towson University		6,001		
Tri County Technical College	3,234			S
Trident Technical College			67	
*Trident University International	6,650			C/3
Trinity Christian College	4,412	1,398		
Trinity College of Florida	1,573			
Trocaire College	8,259			
Troy University	40,970			B, C/2, M, S
Truckee Meadows Community College	7,048			
TTY Career College	205			
Tufts University Fletcher School of Law and Diplomacy	5,538			S
Tulsa Welding School	32,067			
Tusculum College	5,655			S
Ultimate Medical Academy – Online	23,666			
Umpqua Community College	3,565		225	
Union College	13,984	7		
Union Graduate College	77			
Union Institute & University	17,965			L, M
United States Sports Academy	4,654			
United Theological	3,343			
*Universal Technical Institute - Sacramento	4,950			
Universities at Shady Grove	27			
*University of Advancing Technology	43,324			

HED Institution	University "Likes"	Alumni "Likes"	Student Veteran "Likes"	Responses
University of Akron	24,173	12,037	179	
University of Akron – Wayne County	261			
University of Alabama	513,989	19,209	879	
University of Alabama - Birmingham	58,023			
University of Alaska – Anchorage	21,496		334	S
University of Alaska - Fairbanks	22,175			
University of Alaska – Southeast	3,849			
University of Arizona	244,245	40,150	249	
University of Arkansas - Fayetteville	60,062			
University of Arkansas - Fort Smith	9,623			
University of Arkansas - Little Rock	33,573			
University of Arkansas - Monticello	4,612			
University of Arkansas - Pine Bluff	10,691			
University of Baltimore	4,739		89	
University of Bridgeport		4,591		
University of California - Merced	2,549			
University of California - Riverside	143,371			
University of California - Hastings College of Law	3,926			
University of California Los Angeles	23,265		122	
University of California – Santa Barbara	65,479			
University of California – Santa Cruz				L
University of Central Arkansas	21,607			
University of Central Florida	234,240			
University of Central Oklahoma	36,933			S
University of Charleston		1,161		
University of Cincinnati - Clermont College	3,047		59	
University of Cincinnati	47,905	8,907	14	
University of Colorado - Boulder	154,911	22,107		
University of Colorado - Colorado Springs	12,495	2,109		
University of Colorado - Denver	27,717			
University of Connecticut	76,615		42	C/1
University of Dayton	43,503			
University of Delaware	64,335			L
University of Denver	91,803	4,256	190	
University of Detroit Mercy	4,082			
University of Dubuque	732			
University of Evansville	12,514			

HED Institution	University "Likes"	Alumni "Likes"	Student Veteran "Likes"	Responses
University of Florida	612,451			
University of Georgia	207,733		78	
University of Georgia - Gainesville	2,346			
University of Great Falls	1,780			
University of Hawaii - Hilo	4,496			
University of Hawaii West Oahu	3,883			
University of Houston	273,673		300	
University of Houston - Clear Lake	11,239			
University of Houston - Downtown	25,918		181	
University of Idaho	24,049			
University of Illinois - Chicago	38,101		97	C/1
University of Indianapolis	18,233			
University of Iowa	89,798			D, M
University of Kansas	244,744			
University of Kentucky	399,681			
University of La Verne	10,887		18	
University of Louisiana - Lafayette	109,210			
University of Louisville	61,292		169	
University of Maine	20,703		134	
University of Maine – Augusta	3,949			
University of Main – Fort Kent	1,387			
University of Management & Technology		5,476		
University of Mary Hardin Baylor	16,937			
University of Maryland	111,744		210	C/13, S
University of Massachusetts - Amherst	23,677		10	
University of Massachusetts - Lowell	20,887			
University of Maryland School of Social Work	1,814			M
University of Memphis	48,674		326	
University of Miami	231,421		306	
University of Michigan - Ann Arbor	701,565		426	
University of Minnesota – Duluth	8,656			
University of Minnesota – Morris	8,866			
University of Minnesota – Twin Cities	4,424			
University of Mississippi	59,447			
University of Missouri - Columbia	265,188		438	
University of Missouri - St. Louis	44,769			C/1, S
University of Mobile	6,247	1,682		
University of Montana	119,520		159	
University of Mount Olive	6,481			
University of Nebraska – Kearney	6,806			

HED Institution	University "Likes"	Alumni "Likes"	Student Veteran "Likes"	Responses
University of Nebraska - Lincoln	111,709			
University of Nevada - Las Vegas	33,630		44	
University of New Hampshire - Manchester	49,071			
University of New Haven	20,895		186	
University of New Mexico – Gallup	1,353		455	
University of North Alabama	31,412			
University of North Carolina - Chapel Hill	235,728		40	
University of North Carolina - Charlotte	48,767			
University of North Carolina - Greensboro	37,402			
University of North Carolina - Pembroke	10,961			
University of North Dakota - Grand Folks	27,490			
University of North Florida	27,415			S
University of North Georgia - Oconee	9,693		61	
University of North Texas	158,581			S
University of Northern Colorado	10,715		17	C/1, L, S
University of Northern Iowa	61,456		24	
University of Northwestern Ohio	12,351			
University of Notre Dame		42,101		
University of Oklahoma	343,268			C/1
University of Oregon	363,643			
University of Pennsylvania – East Stroudsburg	14,241			
*University of Phoenix	1,812,048			C/3
University of Pittsburgh	50,990		229	
University of Redlands	6,766		18	
University of Saint Joseph	13,701			
University of Saint Thomas - Texas	14, 869		35	
University of San Diego	34,629		100	
University of San Francisco	38,384			
University of Sioux Falls	4,929			
University of South Alabama	9,868		23	
University of South Carolina - Aiken	3,480		160	
University of South Carolina – Columbia	119,180			

HED Institution	University "Likes"	Alumni "Likes"	Student Veteran "Likes"	Responses
University of South Carolina - Sumter	2,488			D, M
University of South Carolina - Upstate	8,527			
University of South Dakota	10,453			S
University of South Florida – Sarasota – Manatee	4,639			
University of Southern California	198,338			
University of Southern Indiana	16,551			
University of Southern Maine	10,814			L
University of Southern Maine - Lewiston - Auburn College	696			
University of Southern Mississippi	54,406		50	
University of Southern Mississippi - Gulf Coast	2,196			
University of St. Francis – Fort Wayne	9,201			
University of St. Louis				S
University of St. Mary	3,004			
University of St. Thomas	21,478			
University of Tampa	29,070			
University of Tennessee - Chattanooga	22,138		340	C/1
University of Tennessee - Knoxville	235,641			
University of Tennessee – Martin	15,853			
University of Texas - Arlington	40,501			
University of Texas – Dallas	35,554			
University of Texas of the Permian Basin	6,168			
University of Texas - Pan American	97,472			
University of Texas - San Antonio	32,885			C/1
University of the Cumberlands	14,859			C/1
University of the Incarnate Word	14,619			B, S, V
University of the Pacific	21,690			
*University of the Rockies	3,339			
University of Texas – San Antonio	29,813			
University of Toledo	41,330			M, S
University of Utah	119,209		22	
University of Washington - Bothell	8,549		333	
University of Washington - Seattle	299,493			
University of Washington - Tacoma	27,944			
University of Western States	3,354			
University of West Florida	22,676			
University of West Georgia	20,319			
University of Wisconsin - Eau Claire	21,521			

HED Institution	University "Likes"	Alumni "Likes"	Student Veteran "Likes"	Responses
University of Wisconsin – Green Bay				C/1
University of Wisconsin - La Crosse	17,001			
University of Wisconsin - Milwaukee	29,803			
University of Wisconsin - Oshkosh	10			
University of Wisconsin - Parkside	5,207			
University of Wisconsin - Stout	18,243			C/1
University of Wisconsin - Washington County	1,575			
University of Wisconsin - Whitewater				C/1
University of Wyoming	40,431		50	
University of Upper Iowa	8,272			
*U.S. Career Institute	2,281			
Utah State University	48,996			
Utah Valley University	23, 392		58	L
Valdosta State University	29,790			
Valencia College - East Campus	6,146		69	
Valley City State University	2,932			
Valparaiso University	14,755		115	
Vanderbilt University		48		
Vanguard University of Southern California	9,387		331	L
Van Loan School of Graduate and Professional Studies – Endicott	803			
Vaughn College of Aeronautics and Technology	5,711			
Vermont Law School	12,676			
Vermont Tech	4,954			
Vincennes University	12,076			
*Virginia College	8,283		520	
Virginia Commonwealth University	106,845			
Virginia Ashlands Community College	1,587			
Virginia Military Institute	17, 236			
Virginia State University		33		
Virginia Western Community College	6,977			
Virginia Killeen	1,437			
Virginia Amarillo	1,249			
Virginia Beaumont	1,001			
Virginia Computer Career Center	1,206			
Virginia Wesleyan College		25		
Vista College – Amarillo	1,249			
Vista College – Beaumont	1,001			

HED Institution	University "Likes"	Alumni "Likes"	Student Veteran "Likes"	Responses
Vista College-Computer Career Center	1,206			
Vista College – Killeen	1,437			
Wake Technical Community College	12,050			R, S
*Walden University	442,446			
Wallace State Community College	10,151			
Walla Walla Community College	4,305			
Walsh College	4,408			
Walsh University	5,450			
Warner Pacific College	2,405			
Warren County Community College	1,364			
Wartburg College	8,707	145		
Washington Adventist University	5,498			
Washington College	9,441			
Washington & Jefferson College	4,616			
Washington State Community College	3,502			
Washington State University	68,720			
Washington State University - Tri Cities	811			
Washtenaw Community College	10,026			
Waubonsee Community College	12,160			
Waukesha County Technical College	5,477			
Wayland Baptist University	6,813			C/1
Wayne State College	36,753			
Wayne State University	36,396			
Weber State University	38,691			
Webster University – St. Louis	22,755		138	
West Chester University of Pennsylvania	21,080			M, S
West Georgia Technical College	7,891			
West Liberty University		492		
West Shore Community College	931			
West Texas A&M University	20,049		293	
West Valley College	4,105			
West Virginia State University	5,885		917	
West Virginia University	238,856			
West Virginia University - Parkersburg	3,511			
Western Carolina University	37,477	79	125	
Western Connecticut State University	13,293			C/1
Western Governors University	84,732			
Western Illinois University	46,048	6,317	230	
Western Illinois University - Quad Cities	1,673			

HED Institution	University "Likes"	Alumni "Likes"	Student Veteran "Likes"	Responses
Western Kentucky University	61, 237		565	
Western Michigan University	75,496		353	
Western Nebraska Community College	3,314			
Western Nevada College	2,323		51	
Western Oklahoma State College		1,799		
Western Oregon University	6, 283	33	52	L
Western State Colorado University	11,747			
Western Technical College	4,887			
Western Washington University	37,949			L
Westfield State University	11,740	2,210		
Westminster College - Missouri	6,535	411		
Westminster College - Utah	8,927			
West Valley College	4,105			
West Virginia State University	239,575			
West Virginia Wesleyan	8,344			
Westwood College - Northlake	1,511			
Wharton College			192	
Wichita State University	28,623	5,239		S
Widener University	9,993			
Wilbur Wright College	4,578			L
Wilkes University	9,586	2,861		
William Carey University		1,027		
William Mitchell College of Law	999			
William Penn University	2,770			
Wilmington University	7,827		435	
Winona State University	24,917		2,818	
Wiregrass Georgia Technical College	13, 987			
Worcester State University	6,571			
Wright State University	24,991			
Wyotech – Blairsville	4,544			
Wyotech – Daytona	2,421			
Wyotech – Fremont	56			
Wyotech – Laramie	3,766			
Xavier University	62,515			
Yale University	1,105,976	21	57	
York College City University of NY	8,312			
York College of Pennsylvania	9,439			
Youngstown State University	41,939	657		
YTI Career Institute - Altona	1,484			
YTI Career Institute - York	1,716			
Zane State College	2,688		17	

Appendix H

Systems Framework Matrix of Independent Variables

	Military	Higher Education	Personal/Family
Macro	Combat Zone # of times deployed to combat area Length of deployment Level of hazardous duty BMT CSF Use of MEC Adequacy of MEC ***Adequate technical help*** Consistent Internet access Combat environment	Pace of DL course Higher education institution	
Mezzo	Unit members' support of DLDCD Unit leaders' support of DLDCD ***Military role conflict with DLDCD*** Unit relationships Unit support	***Frequency of Instructor contact*** Timeliness of Instructor response ***Instructor flexibility*** DL classmate support ***Ability to engage in DL teamwork*** ***DLDCD role conflict with military responsibilities*** DL course	Family support First generation college student Parent status Family size
Micro	# of soldier's deployment while engaged in DLDCD Military affiliation Military rank Military occupation	DL online hours per week DL offline hours per week ***Comfort with DL course options*** ***Ability to manage academic workload*** ***Ability to meet academic deadlines*** Higher education goal related to DLDCD ***Program completion related to DLDCD*** ***Expectations of DLDCD*** ***Satisfaction with DLDCD*** Willingness to engage in DLDCD again Degree aspiration Level of education completed	Comfort with basic computer applications Level of resilience Age Gender Race Relationship status

Appendix I

Qualitative Data

Responses to Question #24:

What, if anything, would have improved your DLDCD experience?

MACRO – Higher Education:

More flexibility due to a last minute mission change due to deployment.
More support/flexibility from the program.
Deployment Operational Tempo tends to be slower in the winter. It would have been nice if the semester wasn't in the typical stateside semester schedule and followed this instead.
The availability of support during duty hours in my time zone.
It's hard to have ready access to technical support while deployed. It would be nice if they had hours that we could get in contact with the technical support team that conforms to the time difference.
Everything – the whole learning experience – needs to be revamped. When I started at [. . .] in 2015, I had to retake the math classes because I did not learn the proper way of doing math.
The school being more selective in who they allowed to continue. A lot of slackers were allowed to progress.
Continue to improve the Blackboard interface.
More variety of classes.
That the administrative staff (not Instructors) understand that learning while deployed is very difficult and sometimes events happen that are outside of a military member's control.
The university being understanding of deployed members' situations and how easily they can change at a moment's notice.

MACRO – Military:

Better Internet service
Better Internet access (2)
Better, consistent Internet
It is hard due to Internet availability
Better/faster Internet (2)
More Internet access (4)
More consistent Internet connection. My experience was in 2004-05, when those services had not fully matured in the combat theater.
More access
The biggest complication was the spotty internet access and reliability, but I learned how to get around it.

Better, more consistent Internet connections (2)
Reliable Internet (2)
Having consistent Internet connection. Lack of access is why I had to drop the course half way through.
Improved Internet quality in the deployment zone
DoD must understand that those that serve must pursue personal growth that is advantageous to themselves and the overall growth of the military.
After I signed up, I was sent to another base in Iraq, so I was not able to complete the class.
Access to personal PC
More down time
The flexibility to still work full-time and be able to attend school
Predictable schedule while downrange (in my job – impossible)
More flexibility with the MWR (Morale, Welfare, Recreation) on their thumb drive policy

MEZZO – Higher Education:

The required "chat" boards are absolutely horrendous. They add nothing at all to my learning. I do not care at all about Internet strangers. No information I posted was true about myself, and I ignored everything other students had to say. If it was not required and a part of my grade, I would never use the chat rooms, message boards, discussion forums, etc. The actual course material is all I care about.
Those chats do nothing but take away from time I could use to eat, sleep, study, etc.
Interaction with others
Better, more meaningful discussion in forums
The discussion boards as participation points were nonsense and didn't help with the course completion
Verbal interaction with other students and the Instructor
Test-taking rather than writing a research paper
Having the proctored exam waivered and being able to complete tests offline and submit them due to unreliable Internet
The proctored testing was the worst part of it. They were not very flexible.
Have access to assignments 24 hours a day instead of a set time frame because of the time zone difference.
More flexible instructors, especially when it comes to the time difference. You always have to log in on a certain day at a certain time to "participate" in a classroom discussion. That is not always possible due to the time difference and mission requirements.
Less group projects – getting together with the time zone difference was very difficult.
Extended deadlines
More flexibility
Just needed more time
Face-to-face instructions
Instructor teaching directly online
Teacher understanding that Internet was sporadic

Communication with the Instructor
Flexible teachers are a must.

MEZZO – Military:

If I had time to take the classes when I was deployed. I had no time.
Overall – not being deployed. It was hard to keep up.
A unit understanding of time for school work.
Leadership support (2)

MICRO – Personal/Individual:

I wouldn't try going to school in a combat zone again.
I wouldn't have taken classes downrange.
Prefer not to do DLDCD
More maturity
Knowing what I was doing – I was six years out of school, and did not do great in high school.

Other:

More encouragement to start earlier
Consistent access to FL service
Not going to war
Direct majors