Summer 2020

Project Management: A Natural Career Destination for Military Veterans

Tracey Richardson
Embry-Riddle Aeronautical University, tracey.richardson@erau.edu

James W. Marion Jr
Embry-Riddle Aeronautical University, James.Marion1@erau.edu

Matthew Earnhardt
Embry Riddle Aeronautical University, earnharm@erau.edu

Vittal S. Anantatmula
Western Carolina University, vittal@email.wcu.edu

Scholarly Commons Citation

Richardson, T., Marion, J. W., Earnhardt, M., & Anantatmula, V. S. (2020). Project Management: A Natural Career Destination for Military Veterans. *Journal of Modern Project Management, 8*(1). https://doi.org/10.19255/JMPM02304

Project Management: A Natural Career Destination for Military Veterans

Dr. Tracey M. Richardson, PMP, PMI-RMP
Associate Professor
Embry-Riddle Aeronautical University
Tracey.Richardson@erau.edu

Dr. James W. Marion, PMP
Associate Professor
Embry-Riddle Aeronautical University
James.Marion1@erau.edu

Dr. Matthew P. Earnhardt
Associate Professor
Embry-Riddle Aeronautical University
earnharm@erau.edu

Dr. Vittal S. Anantatmula, PMP
Professor
Western Carolina University
vittal@email.wcu.edu

Abstract: This quantitative study surveys 595 United States military veterans from all four branches of the military in order to ascertain the degree to which the branches of the military prepare individuals for possible future careers in civilian project management roles. Further, the study compares the relative knowledge of project management technical skill areas, processes and personal competencies. Although all branches provided responses indicating a high degree of familiarity with and preparation for project management roles, some significant differences were observed in responses between military branches.

Keywords: Project management, Military transition, Veterans employment

1 - Introduction

According to the Project Management Institute (n.d.), the project management profession is expected to grow by over 33 percent and create an additional 22 million project management jobs by 2027. Along the same time horizon, the U.S. military continues to be a talent pipeline as Soldiers, Airmen, Sailors, and Marines transition off of active duty. Given the need for qualified project managers and the increasing availability of former military personnel in transition, the timing is right to examine the potential fit of military personnel within the project management profession. The 2015 – 2017 drawdown of the military has had a significant impact for both the economy and the service member (Kleykamp, 2010). A drawdown is accomplished in several ways including: (a) forced separation, (b) limited new enlistments, and (c) encouragement of voluntary separation (Kleykamp, 2010). The United States military has experienced a drawdown in recent years with a plan to reduce the U.S. Army to a low of 450,000 active-duty soldiers, a 7.66% reduction, between 2014 and 2018 (Tice, 2016). Other services are undertaking similar drawdowns under the direction of the Department of Defense and the U.S. Congress (Tice, 2016).

However, the transition of retired and retiring military personnel to the civilian and corporate world is exacerbated by challenges associated with stark differences in work cultures. However, preparing for a second career may ease the transition from the military to civilian life (Vigoda-Gadot, Baruch, & Grimland, 2010). As it is well known and codified in military practices that members of the military are trained in basic leadership skills and are mission-focused in their management orientation, they are likely to be well suited to project management profession and transition could be smooth.

It is appropriate and timely to explore whether the project management profession could readily employ former military personnel to fill the ranks. It is also of interest to understand further to what degree the preparation and experience of military personnel are in alignment with project management practices and professional needs. A close fit between former highly trained and experienced military personnel and the hiring requirements of project managers would benefit the field of project management and the corporate world.

As such, formal Project management techniques have their origins in the U.S. military. The corporate world has embraced these project management techniques to gain a competitive advantage and developed it into a major profession. The current research effort is to determine if the experience within the armed forces aligns with observed project management within the business world. This is particularly important given the unique norms, regulations, and practices experienced by military personnel throughout their service in the armed forces (Coll, Weiss, & Yarvis, 2011). Further, the intentional focus on job rotation and career progression within the military to prepare military professionals for additional responsibilities would appear to mirror the long-term development of competence observed in business managers and project managers (Jans & Frazer-Jans, 2004). The purpose of this study is to explore the suitability of the U.S. military professional training and experience for project management tasks in the business world. In the following section, literature is reviewed to identify similarities between military experience and project management experience in the corporate world. These similar competencies are used to design the research questionnaire that is aimed to collect data from military personnel.

2 - Literature Review

With the research focus on comparing military experience and project management experience in the industry, selective past research efforts were analyzed to draw parallels between these two professions to explore the suitability of experienced military personnel for project management positions in the industry.

2.1 - Alignment of Project and Military Mission

The project is a time-bound effort and has several related and/or interdependent tasks to create a unique product or service. Time-bound does not necessarily mean it is of short duration. The Project Management Institute (2017) define a project as "a temporary endeavor undertaken to create a unique product, service or result" (p. 4). Temporary does not denote a lack of importance it.

The underlying principle of project management is to utilize resources effectively and efficiently. Ollus, Jansson, Karvonen, Uoti, and Riikonen (2011) observed that project management is leveraging resources to bring about successful project completion. Project management, according to Whitty and Maylor (2009), is one of the key enablers of both business change and success. As such, project management is a profession that is prevalent in most industries and continues to grow at a significant rate (Richardson, Earnhardt, & Marion, 2015).

The relationship between organizational structure and management practices of the industry and the military have long been recognized (Talbot, 2003). The concept of the mission within military practice is closely aligned with the achievement of tangible short-term goals (Wright, 2015). Project management, as in the case of the "mission" in the military, is entirely focused on achieving unique short terms goals and producing deliverables. The similarity between project management and the fundamentals of military management practices would appear to suggest that military service provides unique preparation for civilian careers in project management.

2.2 - Project Manager Talent

Project management is increasingly recognized as an important profession to gain competitive advantage in the global economy. It is supported by a body of knowledge, research, and is experiencing significant growth as a global career as evidenced by the membership growth of the Project Management Institute (PMI). A typical project manager acquires skills and knowledge to manage projects through a combination of work experiences (Darrell et al., 2010). The literature (Fisher, 2011; Kerzner, 2013; Wells, 2012) proposed that the individual project manager's capability, training, and experience are all factors that contribute to success and are likely to carry more weight than simply following guidelines or a template prescribed in standards and books. The career growth of the project manager mirrors the rise of a functional manager as the individual gains skills and experience over a period of time within the organization. Talented managers who demonstrate capability and deliver results in managing projects have been observed to rise into senior management roles. For this reason, project management has been referred to as the *accidental profession*.

2.3 - Military Talent

Many similarities between the concept of the mission within the military and the project management framework have been observed (Stober, 2013). Consistent with project

management, the nature of the military mission relies on competencies such as a strong positive interaction with colleagues and a focus on creating successful outcomes (Young & Dulewicz, 2005). Parallels can be drawn between combat veterans coordinating activities under extreme circumstances and the focus of a project manager in the midst of a challenging project (Godé-Sanchez, 2010). Research has also shown that service in the military tends to develop positive traits such as extroversion and self-confidence, which could be linked to leadership skills that are also required in project management (Maleki et al., 2012). The personal ability to execute a military mission or manage a project relies on the ability to lead and understand people, being able to establish clear goals, and flexibility to adapt to changing approaches depending on the project phase or the issue of the day (Muller & Turner, 2007; Stevenson & Starkweather, 2010; Sull, 2007).

2.4 - The Project Life Cycle and Technical Components

The PMBOK (2017) is a life-cycle approach to project management that specifies 47 processes for managing projects. The processes are organized within five process groups, identifying a cradle-to-grave system, and ten knowledge areas. The process groups provide a sequential approach to completing work in a project, whereas the 10 knowledge areas (or technical components) organize processes according to specific domains that are applied in the course of managing a project (Project Management Institute, 2017).

2.5 - Soft Skills and Personal Competencies

Competency can be defined as the actual performance of required skill and personal attributes that support such performance (Birkhead, Sutherland, & Maxwell, 2000). They conclude that competencies include skills, knowledge, attitudes, behaviors, and values.
A comprehensive review of the literature (Project Management Institute, 2007; Maleki et al., 2012; Godé-Sanchez, 2010; Young & Dulewicz, 2005) helps to conclude that competencies and behaviors developed within the context of military service are in alignment with competencies desirable within the field of project management. Leadership and teamwork are key factors in project management success. As is true with the military, leadership and teamwork experience is observed to increase over time in the business environment, as individuals are promoted through the management ranks (Richardson et al., 2015).

Birk et al. (2000) developed a competency model for project managers in South Africa which includes:

- Planning and controlling
- Project team development
- Problem-solving
- Goal focus
- Team leadership
- Personal influence

These competencies are considered essential in military environment as well as most of the military training is focused on mission accomplishment. A related study identified six competencies, in order of relative importance, for the project manager (Chipulu, Neoh, Ojiako, & Williams, 2012); they are:

- industry-specific and generic skills over project management knowledge/expertise;
- project management knowledge/expertise over industry-specific and generic skills;

- (senior) managerial skills;
- (positive) personal traits;
- project management methodology experience and professional qualifications; and
- risk management over a project life cycle

Further, Chipulu et al. (2012) argue that project manager's required competencies vary based on the industry. Skulmoski and Hartman (2010) found that key competencies based on project phases of I.S. projects. These competencies are personal attributes, communication, leadership, negotiations, professionalism, social skills, and project management competencies. The Project Management Institute (2013) defined six personal competencies that could be thought of as the "soft skills" applied by project managers. The competencies are communicating, leading, managing, cognitive ability, effectiveness, and professionalism (Project Management Institute, 2017). The identified competencies would appear to have much in common with the competencies required of functional managers. The range and breadth of the soft skills identified in the framework speak to the demands of leadership and management within the project context.

Practical leadership and management experiences within the military may be related to success in project management roles within the industry because of the level of responsibility allocated to individuals early in their careers along with the culture of duty and self-sacrifice (Kolditz, 2009). Military experience and responsibility also appear to align well with the communicating, leading, managing, effectiveness, and professionalism competencies found within the Project Management Competency Development Framework promoted by the PMI (Godé-Sanchez, 2010; Maleki et al., 2012; Project Management Institute, 2007; Young & Dulewicz, 2005). This is due in part to the explicit leadership competencies and foundational doctrines within the branches of the military as well as the opportunities afforded military personnel to practice the application of such competencies in the field.

In summary, past studies have shown that project manager's attributes and military training focus on similar competencies to successfully deliver project outcomes and military mission respectively. We can hypothesize that competencies of military personnel are aligned with project manager attributes to manage projects successfully. The next section presents the research method to test this hypothesis.

3 - Methodology

With the proposition that military personnel are equipped with competencies to manage projects successfully, this research effort used a sample population of United States military active duty and veteran members to answer the following research questions:

RQ1: Does the military prepare project management talent?

RQ2: Is there a significant difference in reported PMBOK process group experience between the branches of the military?

RQ3: Is there a significant difference in reported PMBOK knowledge area experience between the branches of the military?

RQ4: Is there a significant difference in reported PMBOK personal competence experience between the branches of the military?

RQ5: Is there an overall difference in how project management framework elements are scored regardless of military branch?

These questions were presented in the form of a survey to the targeted population.

3.1 - Research Design and Approach

The survey questionnaire is designed for quantitative study is employed to a sample population of military veterans to investigate experiences that would prepare them for project management careers. The sample was achieved through a university system whose primary student population are military veterans. Emails inviting participation were sent to 10,212 students within the university network and 615 veterans participated by taking the survey. Given that this is a non-random sample, this paper does not seek a statistically representative sample from the overall military population. However, we sought a total sample between 350 and 400 participants. This sample of 615 participants is consistent with that which would be used in a population of over 1 million with a 95% confidence level and 5% margin of error.

3.2 - Instrument

The instrument was made up of 12 questions (see Appendix A), informed by project management in the literature, seeking an assessment of military experience in the areas of the project management life cycle, technical project management, and personal competencies. Demographic information was collected for military service, rank, years of service, and gender. The instrument was validated for content by a thorough review by four Project Management Professionals (PMPs). The PMPs were asked to review the questions for accuracy as it relates to the project management vernacular. The instrument was validated for understandable language by ten veterans representing the U.S. Air Force, Army, Navy, Marine Corps, and Coast Guard.

4 - Analysis

While 615 responses were received, only 595 were usable responses from U.S. active duty and military veterans. In addition to the questions related to project management and the military, the survey asked demographic data such as gender, years of service, and rank. Although 595 overall responses were recorded, each respondent was able to respond multiple times—once for each process group, knowledge area, or competence.

4.1 - Research Question 1

The first research question asked if the military prepares project management talent. Responses indicated that each respondent selected experienced or highly experienced for all questions related to military preparation (see Table 1). In fact, related to the five life cycle stages, 69.11% of participants felt that they were either experienced or highly experienced ("H-Experienced) (see Table 1). In the case of the PMBOK ten knowledge areas, 62.37% of respondents indicated that they were experienced or highly experienced ("H-Experienced"). Descriptive statistics also indicated that 69.47% of respondents were experienced or highly experienced.

N=2700	Highly Experienced	Experienced	Unexperienced	Knowledgeable	Familiar	Unfamiliar
PMBOK Process Groups	703 26.40%	1163 43.07%	135 5.00%	366 13.56%	239 8.85%	94 3.48%

Table 1: Combined Level of Experience Summary for the Five Life Cycle Stages

The descriptive statistics strongly suggested that military veterans are familiar with fundamental project management principles. It may therefore be inferred through the responses to this research question that the military does play a role in preparing individuals for roles in project management.

4.2 - Research Question 2

The second research question asked if there is a significant difference in reported PMBOK process group experience between the branches of the military. A total of 595 responses were recorded across all branches of the military. The total number of responses from each branch varied from a low of 67 (Marines) to a high of 258 (Air Force). Additionally, 118 members of the Navy and 152 members of the Army also responded. Because of different levels of participation among branches, the proportion of responses associated with "Highly Experienced" and "Experienced" were recorded in order to examine the data for possible differences between branches in the responses. The proportion of "Highly Experienced" and "Experienced" responses to each PMBOK element is recorded in Table 2. An ANOVA was conducted (Table 2) in order to test for significant differences in responses between military branches. A significant difference was observed in responses between branches of the military [F=7.6, p=.01]. It is further observed that, with respect to process groups, survey respondents associated with a career background in the Army responded with the highest proportion of "Experienced-Highly Experienced" responses (.74). This response proportion is associated with the Executing process group.

	Category	**Air Force**	**Navy**	**Army**	**Marines**
PMBOK Process Group	Initiating	0.53	0.56	0.69	0.66
	Planning	0.57	0.56	0.69	0.67
	Executing	0.62	0.58	**0.74**	0.69
	M&C	0.60	0.57	0.72	0.73
	Closing	0.55	0.53	0.66	0.61
PMBOK Knowledge Area	Integration	0.52	0.46	0.59	0.64
	Scope	0.50	0.47	0.57	0.63
	Time	0.53	0.49	0.59	0.67
	Cost	0.46	0.39	0.46	0.52
	Quality	0.55	0.53	0.61	**0.73**
	Human Resources	0.50	0.41	0.50	0.51

	Communications	0.55	0.53	0.64	0.66
	Risk	0.53	0.49	0.61	0.69
	Procurement	0.44	0.39	0.42	0.57
	Stakeholder	0.46	0.40	0.45	0.55
PMBOK Competencies	Communicating	0.69	0.72	0.75	**0.81**
	Leading	0.68	0.70	0.75	0.79
	Managing	0.68	0.69	0.71	0.81
	Cognitive ability	0.65	0.66	0.69	0.75
	Effectiveness	0.67	0.69	0.72	0.78
	Professionalism	0.70	0.72	0.72	0.79
	Average	0.57	0.55	0.63	**0.68**

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Air Force	21.00	11.97	0.57	0.01
Navy	21.00	11.52	0.55	0.01
Army	21.00	13.28	0.63	0.01
Marines	21.00	14.24	**0.68**	0.01

ANOVA

Source of Variation	*S.S.*	*df*	*M.S.*	*F*	*P-value*	*F crit*
Between Groups	0.22	3.00	0.07	7.60	0.00	2.72
Within Groups	0.77	80.00	0.01			
Total	0.99	83.00				

Table 2: Proportion of "Highly Experienced" and "Experienced" Responses with Static Result: ANOVA Test of Significant Differences in Military Branch Responses

4.3 - Research Question 3

The third research question investigated if there is a significant difference in reported PMBOK knowledge area experience between the branches of the military. The differences between military branches were observed to be significant. It is further observed that the Marines recorded the highest proportion of "Experienced/Highly Experienced" responses in the Quality knowledge area.

4.4 - Research Question 4

The fourth research question investigated if there is a significant difference in reported PMBOK personal competence experience between the branches of the military. Referring again to Table 2, the differences between military branches were observed to be significant. It is further

observed that the Marines recorded the highest proportion of "Experienced/Highly Experienced" responses in the personal competence of "Communicating."

4.5 - Research Question 5

Research question five asked if there are overall differences in how elements of the project management framework are scored by respondents regardless of the branch of military service. The mean was taken of all project management framework element survey scores for comparison as shown in Table 3. It is observed that Executing scores highest within the process group elements, Quality scores highest within the knowledge area elements, and finally, communicating scores highest within the elements of competence within the project management framework. An ANOVA was conducted to assess to what extent the differences between project management scored elements were significant (Table 3). The differences are observed to be significant at [F=8.02, p=.01].

	Category	Count	Sum	Mean	Variance
PMBOK Process Group	Initiating	4.00	2.44	0.61	0.01
	Planning	4.00	2.50	0.62	0.00
	Executing	4.00	2.63	**0.66**	0.01
	M&C	4.00	2.61	0.65	0.01
	Closing	4.00	2.35	0.59	0.00
PMBOK Knowledge Area	Integration	4.00	2.20	0.55	0.01
	Scope	4.00	2.16	0.54	0.01
	Time	4.00	2.29	0.57	0.01
	Cost	4.00	1.83	0.46	0.00
	Quality	4.00	2.41	**0.60**	0.01
	Human Resources	4.00	1.91	0.48	0.00
	Communications	4.00	2.37	0.59	0.00
	Risk	4.00	2.32	0.58	0.01
	Procurement	4.00	1.82	0.45	0.01
	Stakeholder	4.00	1.86	0.47	0.00
PMBOK Competencies	Communicating	4.00	2.97	**0.74**	0.00
	Leading	4.00	2.93	0.73	0.00
	Managing	4.00	2.89	0.72	0.00
	Cognitive ability	4.00	2.75	0.69	0.00
	Effectiveness	4.00	2.85	0.71	0.00
	Professionalism	4.00	2.93	0.73	0.00

Anova: Single Factor

SUMMARY

Groups	*Count*	*Sum*	*Average*	*Variance*
Air Force	21.00	2.17	0.10	0.00
Navy	21.00	2.81	**0.13**	0.00
Army	21.00	1.45	0.07	0.00
Marines	21.00	1.57	0.07	0.00

ANOVA

Source of Variation	*S.S.*	*df*	*M.S.*	*F*	*P-value*	*F crit*
Between Groups	0.06	3.00	0.02	7.49	0.00	2.72
Within Groups	0.20	80.00	0.00			
Total	0.26	83.00				

Table 3: Overall PMI Project Management Framework Scoring Comparison with Static Result: Test of Significant Differences Between Elements of the PMI Project Management Framework

4.6 - Summary of Research Question Analysis

The research questions investigated the difference between branches of service with respect to the scoring of PMBOK elements. Given the high F value and low P-value, the ANOVA data suggested that there is a significant difference between how each military branch scored the PMBOK process groups, knowledge areas, and competencies (see Table 2). From inspection, overall, the Marines selected "Highly Experienced" or "Experienced" more than the other branches (68 %). The difference was related to the high scores in Executing, within the process groups, Quality, within the knowledge areas, and Communicating with the PMI personal competencies. This is in spite of the Army branch of service scoring highest overall for the process group element of Executing. Overall significant differences between project management elements were also observed in Table 3. Executing, Quality, and Communicating were observed to score proportionately higher than other framework elements.

5 - Conclusion

As discussed by Payne et al. (2011), the military uses project management in a variety of fields. The results of the current study concur with the findings of Payne et al. based on the responses of military members, indicating a great deal of experience with project management and the PMI framework. Over 60% of participants indicated that they were highly experienced or experienced with the project management framework and subsequent areas. This would indicate that the military is doing an adequate job of preparing military members for a career in project management upon separation or retirement from the military. Though the results indicate that the military does a good job of preparing members, it is important to note that each branch of service has slightly different emphasis within each area, as indicated in the summary of research question analysis.

The military can use the results of the current study to develop joint training in each of their strength areas. For example, the Army scored the highest in Executing; while the Marines

selected experienced or highly experienced the most often. Therefore, perhaps the Marines and Army could offer joint training on executing or other process groups to improve not only their own processes, but also to prepare military members for a second career. The concept of joint training for the military, is not a new one, but as noted by Svec (2014), one should pay attention to the different requirements of each service and job. Therefore, the DoD should explore the results of this study and how they can be used for future training and process improvement.

The results of this study suggested that the U.S. military does provide preparation for project management experience and could be a valuable career transition tool. Project management, according to Whitty and Maylor (2009), is one of the key enablers of both business change and success. As such, project management is a profession that is prevalent in most industries and continues to grow at a significant rate (Richardson et al., 2015). Therefore, this initial study indicated that military veterans could have the skills to prepare them for project management jobs in a myriad of different industries that match their unique skills.

5.1 - Recommendations for Future Research

There are several recommendations for future research. This study could be beneficial to replicate by seeking out members or veterans of just one branch of the military to obtain more detailed results. Seeking out those in the USMC could give a better idea of what traits Marines have that provide them with experiences to prepare them for project management careers. There are still areas that need to be addressed through additional studies to explore the phenomenon. Specifically, future studies can better inform the veteran population to help them integrate into the civilian sector. Additionally, further research could better inform civilian employers as to the experience a veteran brings into the civilian sector. Future research possibilities are wide-ranged and include the relation of project management skills to the differences between branches, correlation to rank and/or time in service, function of specialty, and where project management experience was gained within the military. It is these types of questions that offer opportunities for the future.

5.2 - Limitations of the Study

The present study used a self-administered questionnaire to gather opinions about the perception of military experience, training, and education as it relates to the project management skillset. The primary assumption with the present study is that the respondents would answer the self-administered questionnaire honestly and base the answers to the questions on their own experiences. The literature suggests that respondents have a tendency to answer surveys as they would like to see themselves, not as the respondents actually are, skewing the data (Bourque & Fiedler, 2003). Future research should consider this tendency when crafting research instruments. The present study used a convenience sample. As defined by Fink (2013), "a convenience sample consists of a group of individuals that is ready and available" (p. 34). The sample for this study included the veteran population who attend Embry-Riddle Aeronautical University.

The instrument could be a possible limitation for survey research. Although this instrument includes questions using generally accepted project management terms and processes, there are no documented tests for its validity and/or reliability. The present survey was examined for meaning, format, and understanding before being administered. Survey research suggests that data collection and analysis errors can be a consequence of a lack of proven accuracy and consistency (Fink, 2013; Stringer, 2007).

About Author

Dr. Tracey Richardson, PMP
Assistant Dean and Associate Professor
Embry-Riddle Aeronautical University, United States
College of Business, Worldwide Campus
1 Aerospace Boulevard
Daytona Beach, FL 32114
richart2@erau.edu
Embry-Riddle Aeronautical University
Florida | Arizona | Worldwide

References

Birkhead, M., Sutherland, M., & Maxwell, T. (2000). Core competencies required of project managers. *South African Journal of Business Management*, *31*(3), 99-105.

Bourque, L. B. & Fielder, E. P. (2003). The Survey kit: How to conduct telephone surveys: SAGE Publications Ltd. doi: 10.4135/9781412984423

Chipulu, M., Neoh, J. G., Ojiako, U. U., & Williams, T. (2012). A multidimensional analysis of project manager competences. *IEEE Transactions on Engineering Management*, *60*(3), 506-517.

Coll, J. E., Weiss, E. L., & Yarvis, J. S. (2011). No one leaves unchanged: Insights for civilian mental health care professionals into the military experience and culture. *Social Work in Health Care, 50*(7), 487-500. doi: 10.1080/00981389.2010.528727

Darrell, V., Baccarini, D., & Love, P. E. D. (2010). Demystifying the folklore of the accidental project manager in the public sector. Project Management Journal, 41, 56-63. doi: 10.1002/pmj.20164

Fink, A. (2013). How to conduct surveys: a step-by-step guide. Los Angeles: SAGE.

Fisher, E. (2011). What practitioners consider to be the skills and behaviours of an effective people project manager. *International Journal of Project Management*, 29 (2011) 994–1002. doi.org/10.1016/j.ijproman.2010.09.002

Godé-Sanchez, C. (2010). Leveraging coordination in project-based activities: What can we learn from military teamwork? Project Management Journal, 41(3), 69-78. doi: 10.1002/pmj.20178

Jans, N., & Frazer-Jans, J. (2004). Career development, job rotation, and professional performance. *Armed Forces & Society, 30*(2), 255-277. doi: 10.1177/0095327X0403000206

Kerzner, H. (2013). *Project management: A systems approach to planning, scheduling, and controlling*. John Wiley & Sons, Inc. Hoboken, NJ.

Kleykamp, M. (2010). Where did the soldiers go? the effects of military downsizing on college enrollment and employment. *Social Science Research, 39*(3), 477-490. doi: 10.1016/j.ssresearch.2009.09.001

Kolditz, T. (2009, February 6). *Why the Military Produces Great Leaders*. Retrieved from Harvard Business Review: http://blogs.hbr.org/frontline-leadership/2009/02/why-the-military-produces-grea.html

Maleki, B., Sanei, S., Borhani, H., & Ghavami, A. (2012). Effect of military training on personality traits of military students. *Iranian Journal of Military Medicine*, *13*(4), 195-200. http://militarymedj.ir/article-1-857-en.html

Müller, R., & Turner, R. (2007). The influence of project managers on project success criteria and project success by type of project. European Management Journal, 25(4), 298-309. doi:http://dx.doi.org.ezproxy.libproxy.db.erau.edu/10.1016/j.emj.2007.06.003

Ollus, M., Jansson, K., Karvonen, I., Uoti, M., & Riikonen, H. (2011). Supporting collaborative project management. *Production Planning & Control, 22*(5), 538-553. doi:10.1080/09537287.2010.536624

Payne, J. M., France, K. E., Henley, N., D'Antoine, H. A., Bartu, A. E., Elliott, E. J., & Bower, C. (2011). Researchers' experience with project management in health and medical research: Results from a post-project review. *BMC Public Health, 11*(1), 424-424. doi:10.1186/1471-2458-11-424

Project Management Institute (2007). Project manager competency development framework. (2nd ed.). Newtown Square, PA: Project Management Institute. Retrieved from https://drm.pmi.org/Default.aspx?doc=PMCDF_SecondEd.pdf&r=http://www.pmi.org/PMBOK-Guide-and-Standards/Standards-Library-of-PMI-Global-Standards.aspx

Project Management Institute. (2017). A guide to the project management body of knowledge (PMBOK guide) (6th ed.). Philadelphia, PA: Project Management Institute.

PMI (2017). Project Management Job Growth and Talent Gap 2017–2027. Richardson, T. M., Earnhardt, M. P., & Marion, J. W. (2015). Is project management still an accidental profession? A qualitative study of career progression. *Sage Open, 5*(1), 1-10. doi: 10.1177/2158244015572098

Skulmoski, G. J., & Hartman, F. T. (2010). Information Systems Project Manager Soft Competencies: A Project-Phase Investigation. *Project Management Journal*, *41*(1), 61–80.

Stevenson, D. H. & Starkweather, J. A. (2010). PM critical competency index: IT execs prefer soft skills. *International Journal of Project Management*, 28 (2010) 663–671. doi.org/10.1016/j.ijproman.2009.11.008

Sull, D. (2007). Closing the gap between strategy and execution. *MIT Sloan Management Review*, *48*(4).

Stober, D. (2013, August 1). Global Knowledge Training Blog » Military Orders Process vs. Project Management Methodology, Part 1. Retrieved July 06, 2016, from http://blog.globalknowledge.com/government/7952/

Stringer, E. T. (2007). Action research (3e éd.).

Svec, L. (2014). Cultural heritage training in the U.S. military. *Springerplus*, *3*(1), 1-10. doi:10.1186/2193-1801-3-126

Talbot, P. A. (2003). Management organisational history–a military lesson? *Journal of European Industrial Training, 27*(7), 330-340. doi: org/10.1108/03090590310490007

Tice, J. (2016). Army dropped by 1,000 soldiers in February: Drawdown is back on track. Retrieved from http://www.armytimes.com/story/military/careers/army/2016/04/06/army-dropped-1100-soldiers-last-month-drawdown-back-track/82707888/

U.S. Department of Defense Fiscal Year 2017 Budget Request, 2016. Chapter 1, 1-5. Washington DC: U.S. Government.

Vigoda-Gadot, E., Baruch, Y., & Grimland, S. (2010). Career transitions: An empirical examination of second career of military retirees. *Public Personnel Management, 39*(4), 379. http://poli.haifa.ac.il/~eranv/material_vigoda/PPM2010.pdf

Wells, H. (2012). How effective are project management methodologies? An explorative evaluation of their benefits in practice. Project Management Journal, 43(6), 43-58. doi: 10.1002/pmj.21302

Whitty, S. J., & Maylor, H. (2009). And then came complex project management (revised). *International Journal of Project Management, 27*(3), 304-310. doi: 10.1016/j.ijproman.2008.03.004

Wright, E. A. (2015, September 25). The Deep Connection between Military Veterans and the PMI, the PMBOK, and the PMP. Retrieved March 1, 2017, from https://www.linkedin.com/pulse/deep-connection-between-military-veterans-pmi-pmbok-eric

Young, M., & Dulewicz, V. (2005). A model of command, leadership and management competency in the British Royal Navy. *Leadership & Organization Development Journal*, 3-4. doi: 10.1108/01437730510591770

Appendix A
Armed Forces Project Management Talent Survey

Questions 1, 3, 4, & 6: Project Management Process Groups

Question 1 asks you to identify when are where you learned about the project management process groups as given in the PMI Project Management Framework. The following general definitions are provided:

Initiating: This process group identifies processes that are important for beginning a major piece of work or project. It includes processes associated with the formal authorization of the project and the identification of project stakeholders.

Planning: This process group identifies processes associated with planning every aspect of a project. If you have ever planned work that had a definitive beginning and ending, then you have likely planned a project.

Executing: This process group provides processes used for carrying out the project plan.

Monitoring & Controlling: This process group provides guidance for assessing the progress of the project and taking corrective action.

Closing: The processes and procedures for terminating a project.

1. I learned the following project management processes…

	In a military course: technical environment	In a military course: professional military education environment	In a civilian course: college or university	In a civilian course: training or certification	I have not learned about Project scope planning	Other: Write in
Initiating projects						
Planning projects						
Executing projects						
Monitoring and controlling projects						
Closing projects						

If you selected other please write in your response:	

Questions 2 & 5: Project Management Knowledge Areas

In Question 2 you are asked where and when you learned about Project Management Knowledge Areas. The Knowledge Areas in the PMI Project Management Framework are associated with ten skill areas/ knowledge domains that are employed in the course of carrying out project work. The ten knowledge areas are defined as follows:

Integration: Processes associated with putting together and carrying out the overall project plan.

Scope: The scope knowledge area provides guidance for determining what the project will deliver and how this is determined and managed.

Time: Processes associated with creating, managing, and controlling the project schedule.

Cost: The cost knowledge area is all about developing the project budget and carrying out cost management and control throughout the project.

Quality: This knowledge area outlines how Quality should be planned for and managed within a project.

Human Resources: Process guidance associated with the acquiring, developing, and managing the members of your project team.

Communication: This knowledge area outlines processes for planning, generating, and distributing information throughout the course of the project.

Procurement: This knowledge area outlines processes for acquiring goods and services for the project, as well as managing suppliers and contracts.

Stakeholder: Provides guidance for dealing with, managing, and engaging any who have an interest in the outcome of a project including team members, clients, sponsors, and members of the organization.

2. I learned the following project management knowledge areas in…

	In a military course: technical environment	In a military course: professional military education environment	In a civilian course: college or university	In a civilian course: training or certification	I have not learned about Project scope planning	Other: Write in
Integration						
Scope						
Time						
Cost						
Quality						
Human resources						
Communications						
Risk						
Procurement						
Stakeholder						
If you selected other please write in your response:						

3. I learned and gained experience with the following project management personal competencies…

	In a military course: technical environment	In a military course: professional military education environment	In a civilian course: college or university	In a civilian course: training or certification	I have not learned about Project scope planning	Other: Write in
Communicating						
Leading						
Managing						
Cognitive Ability						
Effectiveness						
Professionalism						
If you selected other please write in your response:						

4. My capability level in project management process groups is…

	Highly Experienced	Experienced	Unexperienced	Knowledgeable	Familiar	Unfamiliar
Initiating projects						
Planning projects						
Executing projects						
Monitoring & Controlling projects						
Closing projects						

5. My capability in project management knowledge areas is…

	Highly Experienced	Experienced	Unexperienced	Knowledgeable	Familiar	Unfamiliar
Integration						
Scope						
Time						
Cost						
Quality						
Human resources						
Communications						
Risk						
Procurement						
Stakeholder						

6. My capability level in the following project management personal competency areas is…

	Highly Experienced	Experienced	Unexperienced	Knowledgeable	Familiar	Unfamiliar
Communicating						
Leading						
Managing						
Cognitive Ability						
Effectiveness						
Professionalism						