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Analysing collegiate academic mentorship program on persistence, leadership development, and academic achievement of underrepresented populations at West Point

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Abstract: Mentorship has been associated with increased retention, improvement of human capital and leader development. Leadership development is another attribute that has been associated with retention and success, but there is a dearth of literature pertaining to academic mentorship programs and leadership growth in college. An excel scholars program (ESP) at West Point is designed to promote personal and professional growth in high-performing cadets from underrepresented minority groups. The ESP uses mentoring to encourage students to strive for higher achievement and successfully compete for post graduate scholarships. This study investigated the ESP mentorship influence on academic achievement, retention, and leadership development of underrepresented minority students. Results indicate that mentorship, through the ESP, is positively correlated with academic achievement. Some evidence is found of a correlation between participation in the ESP and improved graduation rates. The results show no evidence of a relationship between this mentoring program and leadership development.

Keywords: ESP; excel scholars program; graduation rates; leadership; leadership development; mentorship; mentor; post graduate scholarships; underrepresented minorities; united states military academy; west point.

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1 Introduction

1.1 Background

The United States Military Academy at West Point is America's oldest military academy, established to educate, train and graduate commissioned officers to serve in the military since 1802. Although West Point has been in existence since 1802, it was not until nearly 160 years later that an appreciable number of African American applicants were admitted to the Academy (Betros, 2012). In fact, prior to World War II, only eight African Americans had graduated from West Point. Nearly three decades later dedicated funds and manpower focused to increase the applicant base and thus increase the number of accepted minority students to West Point; however, there was no similarly established mentorship program to increase persistence of these same students.

There is ample research suggesting that academic mentoring programs for underrepresented minority (URM) students provide positive academic outcomes and improved persistence (Crisp and Cruz, 2009; Bordes and Arredondo, 2005; Tovar, 2015; Dika and Martin, 2018). There is also a growing line of research which suggests that mentoring can be effective in personal development and leadership improvement (Lin et al., 2016), however, there has been little research which quantifies the association between mentoring and leadership outcomes.

1.2 Problem statement

Current research addresses the role of mentoring URM students and how it associates with students' academic achievement and retention rates; however, it does not quantitatively measure the relationship that academic mentorship programs have on their

development as leaders. This study investigated the role of an academic mentoring program on leadership development of URM cadets at West Point. Although West Point has produced highly skilled military leaders for over two centuries, it has only been in recent years that the diversity of West Point consistently exceeds that of the diversity of the Army Officer Corps.

Previous studies have evaluated academic mentorship programs and their influence on persistence and overall academic achievement but overlooked this influence on leader development. Studying the relationship between mentorship programs and leader development is critical in understanding influences on academic achievement, as well as influences on self-efficacy in URM.

This study tests the hypothesis that participation in the ESP positively impacts persistence, academic achievement, and leader development of those cadets in the program versus high-performing cadets not enrolled in the program. The study addresses the following:

1 To what extent is a collegiate academic mentorship program for URM cadets associated with their overall leadership performance, as measured by Cadet Military Program Score (CMPS)?

2 To what extent is a collegiate academic mentorship program for URM cadets associated with overall academic achievement, as measured by Cadet Academic Program Score (CAPS)?

3 To what extent is a collegiate academic mentorship program for URM cadets associated with overall retention, as measured by graduation rates.

2 Guiding conceptual framework and literature review

2.1 Defining the excel scholars program

In 2011, the Department of Behavioral Science and Leadership at West Point initiated the ESP to promote the personal and professional growth and excellence of high-performing students from URM populations (Rovira, United States Military Academy, 2017). The program focusses its efforts through the identification of promising cadets from URM populations during their first year at West Point. The ESP provides a framework of nurturing cadets' talents to compete for post graduate level scholarship opportunities while also providing encouragement for continued excellence in the academic, military, and physical domains of West Point.

2.2 Impacts of the excel scholars program

Prior to 2011, West Point's post graduate scholarship program (Rhodes, Marshall, Hertz and Truman) lacked diversity. There were less than 3% of URM cadets in the program while URM cadets represented nearly 20% of the cadet population (Rovira, 2018). The scholarship program at the time, only selected cadets with a 3.75 GPA or higher in the second semester of their first year. Historically, high academically performing African Americans had strong GPAs but were often a half point below the 3.75 GPA cut-off.

However, as they entered their final year, their GPAs were at the same level as white cadets who entered the scholarship program as a first-year cadet (Rovira, 2018).

After the implementation of the ESP (2011), West Point's URM post graduate scholarships dramatically increased from five post graduate scholarships in 2013 to thirty-nine scholarships in 2018 (Scholarship Winners, 2019). The diversity amongst the scholarship recipients also increased dramatically, with only white males in 2013 to three African Americans, seven Asian Americans, four Hispanic Americans and ten women in 2018. In 2017, West Point saw its first African American Rhodes Scholar recipient. In 2018, the first African American woman Rhodes Scholar was selected. Of note, West Point also saw a dramatic rise in diversity among the senior cadet leaders during that period. Prior to the inception of the ESP, West Point had only named one African American as the senior ranking cadet; from 2013 to 2018, West Point's diversity in senior leaders included three African Americans, and two women (Scholarship Winners, 2019).

2.3 Mentorship, social and cultural capital, and networks

Characteristics of effective mentoring relationships include but are not limited to accessibility, encouragement, timeliness, identifying performance expectations, teaching, sharing and challenging growth (Johnson, 2015). All these elements are critical in developing the relationship to share and impart information and encouragement from the mentor to the mentee.

Mentorship has roots in social and cultural capital theories. Cultural capital refers to a specialised set of skills students receive from their environment. This may include knowledge, skills and competence which may allow students to succeed in higher education not based on their aptitude, but rather on the value of these skills to act as currency in higher education and society more broadly (Swartz, 1997). Social capital involves the relationships which lead to social networks and ultimately to achievement of individual or collective goals (Lin, 2001). Growing social and cultural capital is critical to the success of URM students, first generation students, and low socioeconomic status (SES) students. However, it can be particularly challenging because the university system continues to reproduce social inequalities by promoting speech, behaviour and knowledge often associated with higher SES students and continuing generation students (Jury et al., 2017). URM student support networks often reside outside of the institution of higher education (Delgado Bernal, 2001; Eimers and Pike, 1997; Nora and Cabrera, 1996). Deficits in cultural and social capital are also linked to inhibiting the development and success of minority students in college (Lin, 2001).

College mentorship programs generally focus on strengthening student engagement and relationship development to improve academic performance and persistence (Nora and Crisp, 2007). Previous research on the benefits of mentoring has shown that mentoring increases underrepresented student enrolment, retention, and achievement (Wilson, 2010).

Networking creates an environment that is supportive of success. Research has shown that creating mentorship and networking opportunities for URMs are critical for the success of these students through access to social capital with peer networks and faculty mentorship programs (Huerta, 2014). Historical and structural barriers have hindered opportunities along racial, ethnic, class or gender lines, which further impede their access to social network opportunities that might be available to other groups. Equally challenging is the inequality of social capital increases when a certain group clusters at

relatively disadvantaged socioeconomic positions or within a group with only similar socioeconomic characteristics (Lin, 2000). For URMs in colleges and universities, the lower SES combined with their lack of social network impede their ability to succeed even if their admissions scores would indicate otherwise (Bowen and Bok, 1998).

2.4 Leader development

An effective leader is one who not only achieves the mission, but makes the organisation better, makes the people in the organisation better and leaves the people in the organisation more satisfied (Hackman, 2002). It was not until the late 1990s that researchers began to study impact of mentorship on leader development (Campbell et al., 2012). The idea that modelling leadership behaviours through personal values, developmental coaching, and goals expectation through mentorship had not been widely studied previously (Godshalk and Sosik, 2000). More recently, however, a growing body of research is demonstrating how mentorship can be an effective source for leader development (Lin et al., 2016; Ruitta and Teodorescu, 2014; Priest and Donley, 2014).

2.5 Leader development through mentorship

Research has identified that both peer and faculty relationships add to student leader development. In a 2014 study of a Southeastern Liberal Arts college, researchers examined the relationship between interactions with diverse peers and leadership growth in college. Out of classroom experiences in student organisations or clubs appeared to positively influence student leader development; however, it was the quality of the involvement, not quantity that had a greater influence on them (Ruitta and Teodorescu, 2014). In Taiwan, researchers found that the unique interpersonal relationships students developed with their peer mentors positively associated with their self-awareness, sense of mission and leadership abilities (Lin et al., 2016). Likewise, at Kent State University, researchers evaluated the value of alumni mentoring program with students' leadership development and career selection and assisted in the students' professional development through the mentoring relationship (Priest and Donley, 2014).

At West Point, leadership has always been one of the key components of the educational foundation (Betros, 2012). The system for developing leadership remained consistent from its inception in 1802 until 1990 and has since been changed 3 times. The Cadet Leader Development System (CLDS) served as the framework for leader development from 1990 to 2012 and was replaced by the West Point Leader Development System (WPLDS 1) in 2012. For the Class of 2018 and beyond, WPLDS 1 was revised to WPLDS 2.

The initial model of leader development targeted the 4th Class, or Freshmen, and focused on intense indoctrination and compliance. Ultimately, the system served to attrit. In the early 1990s, with the advent of mentoring models, the system changed to one of development and attrition combined, including development of the entire cadet body. This transitional developmental system was in place for about two decades and was known as the CLDS. Finally, through additional revisions, the system has integrated developmental leadership for all members of West Point, not just the cadets enrolled. This developmental system is known as WPLDS. The current model, WPLDS 2 (Figure 1), was introduced for the Class of 2018 and beyond.

Figure 1 West point leader development system (see online version for colours)

Integrating mentors to enhance leadership development for cadets was not an unusual step when viewed in the transitional nature of the leader development program. Freshmen (plebes) are assigned a sponsor during their first summer at West Point. This sponsorship is informal and requirements are minimal. The intent is to help the plebe transition into a military life and provide mentorship in the transition. Similarly, cadets are required to choose a mentor for the course PL300: Military Leadership as juniors (cows). This requires three total engagements, but the formal requirement lasts less than 1 semester. Mentorship is pushed at West Point and cadets will seek out other officers that are instructors, sport representatives, and club representatives. Other formal mentorship opportunities may arise and are typically associated with misconduct or low performance.

Using the academic mentors to increase leadership development in minority cadets was a new approach at West Point (Rovira, 2017). URM mentoring approaches are not specifically addressed in the core leader developmental experiences and are provided in programs like the ESP instead. ESP provides a persistent, formal mentorship program for 7 of 8 semesters at West Point. Although there is ample research on academic mentorship programs on student academic outcomes and retention, there is a dearth of literature on how these mentorship programs might influence leadership development. West Point, not only as an institution of higher learning, but also an institution of leadership development and provides a setting to study both.

3 Methodology

West Point was selected for this study because it is recognised for its excellent academic and leader development programs (Betros, 2012; Lipsky, 2003). West Point is not a regional college, rather the cadets come from every state in US to include countries around the world, therefore providing a heterogeneous population from which to study. The study used ESP retrospective data for the graduating classes of 2018 and 2019. These two classes were selected since they were the first two consecutive classes after the inception of the ESP who followed the same leader development grading rubric through all four years. Achievement data in the forms of Cadet Academic Program Score (CAPS), Cadet Military Program Score (CMPS) and retention were analysed using quantitative statistical procedures.

3.1 Research design

The design of this quantitative study is to test the extent to which students in the ESP program

1 have a higher retention and graduation rate

2 attain higher academic achievement as measured by CAPS

3 attain higher leadership scores as measured by CMPS than students not in the ESP program.

The dependent variables for this study include students' persistence (as measured by graduation), academic achievement as measured by CAPS and leadership achievement as measured by CMPS. The independent variable is participation in the ESP mentorship program. Other independent variables which could influence persistence, academic achievement and leadership outcomes include the Grit, race, ethnicity, gender, age, post high school education, College Entrance Examination Rank (CEER) which is a measure of academic preparation derived primarily from high school rank in class and standardised ACT/SAT scores, family income and family education level.

All risk variables will be pre-admission information except a 12 item Grit Scale Assessment (Duckworth, 2016). All entering cadets are administered the 12 item Grit Scale Assessment during the first weeks of Cadet Basic Training (CBT), prior to any academic course instruction, to determine their Grit score upon entry into the Academy. A low Grit score will be evaluated as a potential risk.

In terms of the 2016 population, the 4400 undergraduate student body is composed of approximately 12% African Americans, 8% Hispanics, 7% Asian Americans, and 1% Native Americas (Board of Visitors, 2016).

Sampling procedure

Using data provided by the USMA Office of Institutional Research, 2501 total students were enrolled in the classes of 2018 and 2019. A treatment group and two comparison groups were selected from the data using non-probability quota sampling. Sampled cadets were in the top 25% of their ethnic racial demographic in each class.

The treatment group was comprised of URM cadets in the cadet population (2018 and 2019), who had a 2.84 or higher GPA at the end of their second semester and participated in ESP at any point during their cadet career. Comparison group 1 consists of URM students who were not invited to participate in ESP or declined to participate in ESP but had a GPA of 2.84 or higher at the end of their second semester. Comparison group 2 consists of non-URM students who had a GPA of 2.84 or higher at the end of their second semester. Comparison group 2 is used to investigate if there are any specific differences in outcomes based on ethnicity, since comparison group 2 will be predominantly white students.

3.2 Instrumentation

3.2.1 Measures

Measures and definitions for this study are listed in Table 1.

Table 1 Definition of measure

Measure	*Definition*
Grit scale score	A categorical variable ranging from 1 to 5 where 1 = not at all gritty to a 5 = extremely gritty
Candidate fitness assessment (CFA)	A standardised, continuous variable measuring an applicant's physical fitness ranging from 200 to 800 points
College Entrance Examination Rank (CEER)	A standardised, continuous variable measuring an applicant's academic aptitude ranging from 200 to 800 points using standardised ACT or SAT scores and student's high school rank in class
Community leadership score (CLS)	A standardised, continuous variable measuring an applicant's leadership aptitude based on an arithmetical mean with a range of 147–780 points, inclusive of teacher's appraisals, athletic activity and extracurricular scores
Whole candidate score (WCS)	A standardised, continuous variable measuring an applicant's pre-admission overall competitiveness ranging from 2000 to 8000 points using 6(CEER) + 3(CLS) + 1 (CFA)

All factors listed in Table 2, with the exception of Grit scores, were collected during the admissions process prior to admission. The Grit scores were collected as part of a larger survey post admission.

Table 2 Admissions information of ESP and comparison groups

	ESP					*Comp Group 1*					*Comp Group 2*				
Variable	*N*	*Min*	*Max*	*Mean*	*StDev*	*N*	*Min*	*Max*	*Mean*	*StDev*	*N*	*Min*	*Max*	*Mean*	*StDev*
ACTE	50	21	35	29.76	4.12	45	20	35	28.56	3.99	48	24	35	31.54	2.98
ACTM	50	24	36	29.84	3.38	45	23	33	28.00	2.74	49	24	36	30.54	2.76
SATV	61	420	800	636.89	86.17	46	440	760	635.00	73.11	57	470	800	674.39	71.11
SATM	61	510	800	657.70	68.15	46	480	740	636.74	61.43	57	550	800	695.26	59.13
CEER	71	461	772	645.11	66.45	61	500	708	616.34	48.59	64	515	777	670.94	63.04
CFA	70	422	734	581.09	67.82	61	430	720	584.82	69.86	64	460	746	605.56	67.46
WCS	71	5054	7238	6302	484.81	61	5294	6909	6137	367.10	64	5261	7266	6553	409.15
CLS	71	441	734	615	57	61	499	705	614	45.56	64	510	726	636	46.0
GRIT	69	2.25	4.08	3.52	.34	59	2.5	4.33	3.53	.35	62	2.5	4.27	3.41	.394

Sample Size ESP:71; Comp Group1: 61; Comp Group2: 64.

3.2.2 Achievement data

The CAPS measures a cadet's academic performance: all academic grades during the four-year program of study on a 4.33 – point scale. The CMPS is a weighted average of grades in each activity and measure of the cadets' cumulative military development grades and is a performance evaluation assigned at the end of each academic semester and after periods of summer training. CMPS includes: military development grades earned during summer military training initially as a squad leader and advancing to positions of increased responsibility up to the senior ranking cadet; military science grades earned during the academic year consisting of three classroom and two laboratory

courses that instill foundational competencies of an Army officer; and the Academy and Military Program Capstone Officership Course (MX400) which provides all senior cadets a rigorous, integrative experience mentored by an interdisciplinary team of instructors (Department of Military Instruction, AY 2014–2016). CMPS is on a 4.33-point scale. Military development grades are 'force-distributed' within respective classes, companies and headquarters to ensure over valuation does not occur.

In terms of persistence, a binary measurement of 1 is used for graduating and 0 for not graduating.

4 Results

The treatment group consisted of all cadets who ever participated in the ESP ($n = 71$). These individuals represent the cadets (classes 2018 and 2019) enrolled in ESP during their four years at West Point. Comparison group 1 consisted of all URM cadets with a 2.84 GPA or higher at the end of the second semester of their first year who were never enrolled in the ESP ($n = 61$). Comparison group 2 consisted of non-minority cadets with a 2.84 GPA or higher at the end of their second semester of their first year ($n = 64$).

4.1 Impact of mentorship on leadership performance

The first research aim was to determine if the ESP had a quantifiable impact on leadership performance as measured by the first-class CMPS. The results do not support a strong relationship between participation in ESP and CMPS. In all three groups, the CMPS decreased over the four-year period. Table 3 shows the statistical summary of CMPS change from the first year to the fourth year for all three groups.

Table 3 Freshman CMPS and senior CMPS group statistics

	Freshman CMPS				*Senior CMPS*			
Groups	*N*	*Mean*	*SD*	*SE*	*N*	*Mean*	*SD*	*SE*
Excel Scholar	71	3.23	0.40	0.05	66	3.10	0.27	0.03
Comp Group 1	61	3.13	0.43	0.06	51	3.02	0.34	0.05
Comp Group 2	64	3.33	0.34	0.05	51	3.22	0.26	0.04

Independent Samples T-Tests confirmed that senior CMPS for ESP students was not statistically different than comparison group 1 ($t(130) = 1.44$, $p = 0.151$) or comparison group 2 ($t(133) = –1.47$, $p = 0.145$). This was also true for the Senior CMPS for ESP cadets and cadets in comparison group 1 ($t(115) = 1.52$, $p = 0.131$). However, there was a statistically significant difference between the mean CMPS for ESP cadets and cadets in comparison group 2 ($t(115) = –2.34$, $p = 0.021$). This result suggests that participation in ESP does not correlate to leadership development, since the mean Senior CMPS for comparison group 2 was higher than that of the ESP group. These differences might be attributable to pre-existing differences or differential attrition between these groups over the four-year enrolment.

A one-way between-subjects ANOVA was conducted to compare the association of ESP participation on leadership development as measured by the Senior CMPS at the end

of four years and if the Senior CMPS was higher as a result of participation in ESP. The data in Table 4 demonstrates there was a significant main effect between groups on the Senior CMPS at the $p < 0.05$ level F (2,165) = 6.18, $p = 0.003$.

Table 4 One-way analysis of variance of ESP and senior CMPS

Source	*SS*	*df*	*MS*	*F*	*Sig*
Between groups	1.04	2	0.52	6.18	0.003
Within groups	13.86	165	0.08		
Total	14.90	167			

Post hoc comparisons using the Tukey HSD test indicated that the mean Senior CMPS for those who participated in ESP ($M = 3.10$, $SD = 0.27$) was not significantly different than high-performing URM cadets in comparison group 1 ($M = 3.02$, $SD = 0.34$) and not significantly different than non-minority cadets in comparison group 2 ($M = 3.22$, $SD = 0.26$). Consequently, although the one-way between-subjects ANOVA demonstrated significant difference, the post hoc comparison demonstrates that participation in the ESP did not have a strong enough relationship to account for the decrease in the Senior CMPS. The results are not statistically significant, thus failing to reject the null hypothesis.

Finally, regression analysis showed numerous variables were significant predictors of Senior CMPS. Holding all else constant, no evidence is found of a difference between ESP participants and comparison group 1. Cadets in comparison group 2 score 0.41 standard deviations higher on their senior year CMPS. Other significant predictors included Freshman CMPS ($p = 0.004$), Grit score ($p = 0.048$), SAT Verbal ($p = 0.016$), gender ($p = 0.001$), WCS (a score used by Admissions to assess a candidate's competitiveness, $p = 0.36$), CLS (a score used by Admissions to assess a candidate's leadership aptitude, $p = 0.005$), and CFA (a score used by Admissions to assess a candidate's physical fitness, $p = 0.014$. Notably, the adjusted R^2 value for the regression model was 0.464, meaning that it could only explain 46.4% of the variability in Senior CMPS.

All three groups saw a decrease in mean CMPS from freshman year to senior year, with the ESP group dropping by 0.13 and the comparison groups likewise dropping by 0.13. The evidence does not support a strong relationship between participation in ESP and Senior CMPS. It also does not suggest that the program had an influence on the decrease to narrow the disparities in CMPS that emerged during their four years at West Point. Other variables such as Freshman CMPS, gender, Grit, and WCS showed a stronger relationship to leader development than participation in ESP.

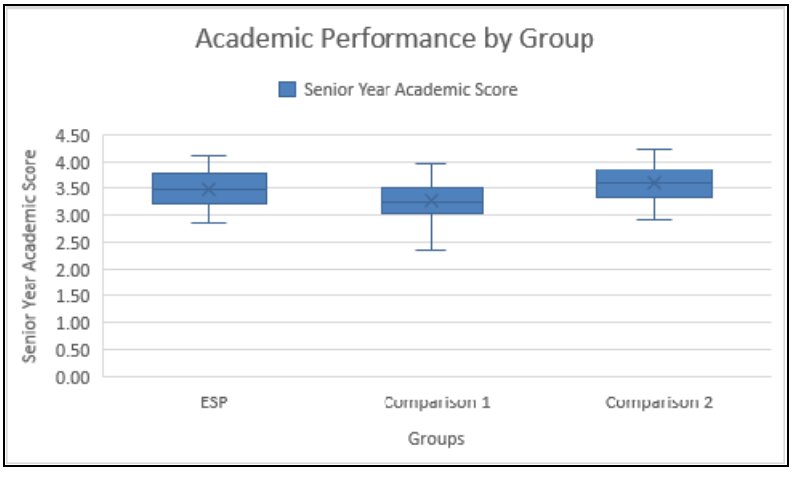
4.2 Impact of mentorship on academic performance

Studies have shown correlations between mentorship programs and academic achievement for at risk students (Thompson and Kelly-Vance, 2001). Students entering higher education also benefit from intervention programs which are designed to increase academic outcomes and a sense of inclusion in the college (Haeger and Fresquez, 2017). The second research aim was to determine to what extent a collegiate academic

mentorship program for URM students associated with overall academic achievement, as measured by CAPS.

A simple box chart in Figure 2 shows the distribution of CAPS at the end of the four-year program of study with respect to the treatment and comparison groups. There is a difference in the distribution of the data, with the comparison group 1 (URM who did not enter ESP) achieving lower CAPS at the end of four years than either the ESP students or the non-minority students in comparison group 2, illustrating the statistically significant difference in the academic achievement scores of the ESP students from those in comparison group 1.

Figure 2 Simple boxplot of CAPS and mentorship program participation (see online version for colours)



Independent Samples T-Tests revealed a statistically significant difference in the Senior CAPS means for those participating in the ESP and for high-performing URM cadets in comparison group 1 ($t(115) = 3.83$, $p = 0.000$). The ESP participants achieving a statistically significantly higher Senior CAPS than those who had not participated, thus rejecting the null hypothesis. There was not a statistically significant difference in the Senior CAPS between ESP participants and comparison group 2 ($t(115) = -1.54$, $p = 0.13$). Both results were confirmed by post hoc comparisons using Tukey HSD tests. This suggests that the ESP program had a beneficial academic development for the ESP participants that was not seen in high-performing URM students who did not participate in the ESP.

However, using regression analysis to predict Senior CAPS showed that only WCS, ACT Math score, and ACT Science score were significant predictors of Senior CAPS. Holding all else constant, no evidence is found of a difference between ESP participants and comparison group 2 (Table 5). The pre-admission academic predictors of ACT math score and ACT science score and overall predictor of WCS were the most significant predictors of Senior CAPS.

Table 5 Post hoc Tukey comparisons senior Year CAPS Group Statistics

	Group	*N*	*Mean*	*Std. dev.*	*SE*
Senior Year CAPS	Excel Scholars	66	3.49	0.33	0.04
	Comparison 1	51	3.26	0.30	0.04
	Comparison 2	51	3.59	0.35	0.05

4.3 Impact of mentorship on graduation rate

The final aim of this study was to determine to what extent is a collegiate academic mentorship program for URMs associated with overall retention, as measured by graduation rates. Ample scholarly literature suggests there is a correlation between mentorship programs and persistence in college for the URM population. If a student has transition issues and does not resolve them in the first year of college, the chance of persisting at that institution is reduced. Increased access to mentoring, tutoring, and early intervention programs will increase the likelihood of retention at the school (Pascarella and Terenzini, 2005; Sutter and Paulson, 2017).

There is a distinct difference in the graduation rate of the three groups. ESP students graduated at a much higher rate (93%) than comparison group 1 (83.6%) and comparison group 2 (79.7%). For reference, West Point graduation rates for the past 25 years have stabilised at about 80% to 81% for the entire student body (Sabel, 2011).

Results of the Pearson's chi-squared test suggest evidence of a relationship between participation in ESP and student persistence exists with $X^2(2, N = 196) = 5.162$, $p = 0.075$. Although the p value was greater than 0.05 (which would normally lead to not rejecting the null hypothesis that no relationship exists between the two variables), the p value of 0.075 is suggestive that participation in the ESP might have some relationship to the persistence of students (Lehmann, 1993). Additionally, both the ESP treatment group and comparison group 1 graduated at higher rates than comparison group 2, which suggests a relationship between high-performing URM students and persistence that is not seen between high-performing non-URM students and persistence. Comparison group 2 is a sample of high-performing non-URM students which comprises about 70% of the student enrolment, demonstrating strong evidence of the consistent graduation rates with previous classes. The graduation rates of high-performing URM students, whether in ESP or not, suggests high-performing students of colour are graduating at higher rates than other students at West Point.

5 Discussion and recommendations

5.1 Discussion of results

The statistical analysis suggests there is not a relationship between participation in the ESP and leadership development in cadets at West Point as measured by CMPS. The differences between the means of the Freshman CMPS were not statistically significant, indicating that their baseline leadership development scores were similar. Independent Samples T-Test on the same groups for Senior CMPS illustrated a different result. Although there was not a statistically significant difference in the means between the ESP participants and URM cadets in comparison group 1, there was a statistically significant

difference in the Senior CMPS means between the ESP participants and non-minority students in comparison group 2. The analysis indicated that the comparison group 2 had a higher Senior CMPS than the ESP participants. However, the data do not support that the ESP program had a relationship on the decrease of the CMPS which occurred over time and across not only the ESP, but both comparison groups as well.

The ESP was implemented to provide a framework for URM students to apply for and compete to earn post graduate scholarships through mentoring, interview preparation, role modelling and exposure to networking opportunities. There was no formal leadership development program associated with ESP in and of itself. Formalised physical and military development programs exist outside of the ESP and are available to all cadets, which is suggestive of why the ESP might not have a relationship with leader development.

Regression analysis illustrated that participation in ESP was not a significant predictor of Senior CMPS. Other variables such as Freshman CMPS scores, gender, Grit, SATV, CLS, WCS and CFA showed a stronger relationship to Senior CMPS than did participation in ESP. The data suggest that gender had a strong relationship with Senior CMPS with a p value of 0.001. However, this relationship could be skewed by the disproportionate percentages of male vs. female participants in the study. The ESP had a higher number of female participants than did either of the comparison groups with nearly 30% as compared to 23% and 25% for comparison groups 1 and 2, respectively. That results also indicate that Freshman CMPS has a strong relationship with Senior CMPS, which is suggestive that the initial measurement of leadership was a stronger predictor of leadership achievement than other variables in the regression except gender.

There was an expectation of some degree of significance in the results considering several studies have affirmed an association between mentorship and cultural and social capital and how it associates with leader development (McCallum and O'Connell, 2009; Zacharakis and Flora, 2005). However, these studies did not involve URM students in institutions of higher learning. More recent studies also suggested the association with mentorship and leadership development (Lin et al., 2016; Ruitta and Teodorescu, 2014; Priest and Donley, 2014; Campbell et al., 2012), but these mentorship programs were also not in academic environments.

It is important to acknowledge that leadership is often the most subjective measurement taken at West Point. Because the goal is leader development, cadets are judged by different standards and expectations as freshman than they are as seniors. It is reasonable to say that the CMPS may be measuring different attributes and competencies over time. MD grades comprise 60% of the CMPS grade and are force distributed, creating challenges in assessing an accurate measurement of military development. Cadets are judged against their immediate peers – typically cohorts of 8 to 12 during the summer, and anywhere from 4 to 6 up to 30 to 40 during the academic year. Military positions also carry different levels of responsibility, so one cadet may be performing significantly greater leadership duties than another cadet who is awarded the same grade.

Finally, military grades are awarded by a composite of tactical officers who evaluate the cadets not only during the academic year, but also during summer training. The academic year and summer training evaluators are often not the same, adding to further challenges with standardising this measurement. The demographic of the tactical officers varies year-to-year, but the preponderance of tactical officers during the course of this study were white. Similarity-attraction theory (Byrne, 1961) and social identity theory (Turner et al., 1984) suggest that individuals favour members of 'their own' group.

A recent study that explored the relational demography of promotion candidates and assessors showed that white assessors rated white candidates, on average, 0.09 points higher (on a scale of 1 to 7) than black assessors rated the same candidate. Similarly, black assessors rated the black candidates, on average, 0.12 points higher than white assessors rated the same black candidate (Buckley et al., 2007). It is reasonable to deduce that a majority white population of tactical officers would award slightly more favourable MD grades to white/non-minority cadets, which may explain why the ESP group had a statistically significantly lower mean Senior CMPS than comparison group 2.

The mean Senior CMPS for those participating in the ESP was statistically significantly higher than the mean CAPS of high-performing URM students in comparison group 1 who did not receive the same mentoring. This same relationship, however, was not observed between the ESP participants and those non-minority students in comparison group 2, where there was not a statistically significant difference in their Senior CAPS scores. This suggests that the ESP program had a beneficial academic outcome for the ESP students that was not seen in high-performing URM students who did not participate in ESP. The Senior CAPS means for ESP participants and high-performing non-URM cadets in comparison group 2 were not statistically different, suggesting future studies on mentorship programs and academic achievement for high-performing URM students would be beneficial.

Numerous studies have affirmed the association between mentoring and the academic success of undergraduate students (Crisp et al., 2017; McKinsey, 2016; Gullan et al., 2016; Crisp and Cruz, 2009; Aagaard and Hauer, 2003; Cohen, 1995), however, these studies, apart from Cohen (1995) and Gullan et al. (2016), were not quantitative and did not allow the findings to be used for broader student populations.

Further studies, affirmed the relationship between mentoring URM students and academic outcomes in a predominantly white institution, illustrating the strong relationship between mentoring URM students and positive academic outcomes (Alcocer and Martinez, 2017; Saenz et al., 2015; Phinney and Baldelomar, 2011). These studies highlighted the importance of mentoring relationships through faculty and peer mentors in URM students' ability to achieve higher academic outcomes through increased cultural capital and increased networking skills (Yosso, 2005). Further studies affirmed the positive relationship between self-efficacy and academic outcomes, specifically related to URM students (Vuong et al., 2010).

The results of this study also confirm there is an association between the ESP at West Point for URM students and graduation rates. ESP participants had a 93% graduation rate as compared to comparison group 1 at 83.6% and comparison group 2 at 79.7%. Results of the Pearson's chi-squared test show $X^2(2,\ N = 196) = 5.162,\ p = 0.075$, with the p value exceeding 0.05, which would normally result in failure to reject the null hypothesis. In this case, as it is close to the 0.05 level, it is suggestive that there is a relationship between ESP and persistence. This is in line with recent studies that suggest there is a positive relationship between mentorship programs and persistence in college for URM students (Estrada et al., 2017; Dika and Martin, 2018; Stewart et al., 2015). One study found that college self-efficacy and positive perceptions of mentorship were the most important factors for a students' intention to persist past their initial academic semester in college (Baier et al., 2016).

5.2 Significance and implications of the study

There is ample research which addresses the relationship between mentorship and student outcomes; however, this study presents an analysis of the relationship between an academic mentorship program and academic achievement, persistence and leadership development in URM cadets in a predominantly white institution.

The results of this study confirm there is a strong positive association between academic mentorship and academic outcomes, as well as suggesting a relationship between academic mentorship and persistence in URM cadets. Furthermore, this study illustrates that the academic mentorship program studied did not have a relationship with the leadership development of West Point cadets. The implications of this study are most relevant to higher level policy makers in that it provides analysis that supports mentorship programs for URM populations. Mentorship programs are positively related to student outcomes of academic achievement and persistence.

The results of this study, however, did not identify a relationship between the academic mentorship program and leadership development at West Point as measured by CMPS. The unique nature of West Point and the foundational competencies of leader development as a requirement for all cadets, suggests that the leadership development extends beyond academic achievement. The CMPS encompasses military training, military science and officership classroom instruction as well as evaluations by military members and peer ratings by the cadets. The CMPS is a reliable and valid predictor of future leadership success in the Army, but not necessarily associated with academic grades while at West Point (Bartone et al., 2007; Spain, 2014).

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