

Report to Congress

Enlistment Eligibility Priorities for Home School and National Guard Youth ChalleNGe GED Credentials: Evaluation of a Pilot Program

Office of the Under Secretary of Defense
(Personnel and Readiness)

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Enlistment Eligibility Priorities for Home School and National Guard Youth ChalleNGe GED Credentials: Evaluation of a Pilot Program

Introduction

Section 571 of the Strom Thurmond National Defense Authorization Act for Fiscal Year 1999 directed the Secretary of Defense to establish a 5-year pilot program to assess whether the armed forces could better meet recruiting requirements by treating home school diploma graduates and graduates of the National Guard Youth ChalleNGe program with General Education Development (GED) certificates as high school diploma graduates for enlistment eligibility purposes.

Section 571(f) requires that the government evaluate the pilot program's effectiveness and directs the Secretary of Defense to submit a report including (1) information "regarding the value of, and any necessity for, authority to treat GED recipients and home school diploma recipients as having graduated from high school with a high school diploma for the purpose of determining the eligibility of those persons to enlist in the Armed Forces;" and (2) a comparison of the performance of those who enlisted under the provisions of the pilot program with those who graduated from high school with a high school diploma. This report evaluates first-term attrition and other measures of those entering under the pilot program. As required by section 571(f), we compare home schooled and ChalleNGe GED recruits with traditional high school diploma graduate recruits in terms of attrition, discipline, adaptability to military life, aptitude for mastering the skills necessary for technical specialties, and eligibility for reenlistment.

Background

For over 20 years, the Department has used education credentials to predict adaptability to military life. Current policy, implemented April 1, 1987, defines 3 groupings, or tiers, of educational credentials and the priority for enlistment of individuals within those groups. Placement of each type of credential is based on a study of the attrition rates of over 30,000 military recruits. The policy's Tier 1 includes traditional high school graduates and those who have completed some college; Tier 2 consists of those with alternative credentials, such as a GED certificate, home school diploma, and correspondence school diploma; and Tier 3 is for

non-graduates, those without any secondary credential (Laurence, 1987; Laurence, Naughton and Harris, 1996; Laurence, Ramsberger, and Arabian, 1996). In April 1996, the Department submitted a report to Congress that examined the equity of this system with respect to the Tier placement of the GED credential (Office of the Secretary of Defense, 1996). That analysis supported existing policy.

We recognize that there is now a greater variety of secondary school opportunities than 20 years ago. Consequently, today it is more difficult for the Services to determine the most appropriate classification for a given credential. Therefore, we continue to monitor attrition rates associated with a variety of credentials and have established a panel of education credential specialists from the Services. This panel reviews our definitions of credentials, as well as their placement within the Tiers. The primary purpose of the panel is to ensure consistency among the Services with respect to the way they classify credentials.

Each of the Services establishes its own standards for enlistment. These include levels of education and scores on an enlistment (aptitude) test. The high school diploma has long proved to be the best single predictor of successful adjustment to military life, while the test is useful in determining the likelihood that an applicant will be able to perform satisfactorily in training and on the job. Approximately 80 percent of high school diploma graduates complete their enlistment obligation (20 percent attrition), compared to 60 percent of individuals with alternative credentials; the completion rates for individuals with no secondary education credential are even lower.

The General Accounting Office (GAO) determined that it costs the Department of Defense over \$35,000 to replace (recruit, train, and equip) each individual who leaves the military without successfully completing his or her term of service (GAO, 1997). Because the chances of success for a high school diploma graduate are so much greater than for individuals with alternative credentials, the Services prefer to enlist individuals with high school diplomas. Additionally, when the number of applicants with traditional high school diplomas exceeds Service personnel requirements and vacancies, the opportunity for other individuals to enlist is reduced accordingly. Analyses of recruiting costs and job performance indicate that approximately 90 percent high school diploma graduates is an optimal level for accessions.

The Services do not evaluate the value of various credentials or the curriculum/test upon which they are awarded; rather, the Services only use the credentials as surrogates for predicting military adaptability. We understand that one unfortunate by-product of this policy is that others may not understand the purpose of this important enlistment screening and may think we are judging credentials from an educational content viewpoint.

Because of the substantial cost of replacing recruits who do not fulfill their enlistment obligation, the Services view first-term attrition as an important metric. Traditionally, credentials that are not based on time and attendance (such as correspondence school diplomas, occupational program certificates, GED certificates, and home school diplomas) have been classified as Tier 2. Thus, before the pilot program, both home school diplomas and ChalleNge plus GED completion were considered Tier 2. Because of the higher attrition rates of individuals holding alternative high school graduation credentials, the Services sharply restrict enlistment of applicants with Tier 2 credentials (Figure 1 provides a complete list of credentials and indicates

to which tier each credential belongs). In addition, by Service policy, recruits with Tier 2 and 3 credentials must attain higher minimum aptitude scores on the enlistment test, Armed Forces Qualification Test (AFQT), than Tier 1 credential holders. Therefore, the appropriateness of placing home schooled and ChalleNGe recruits within Tier 1 will depend primarily on how their attrition levels compare with traditional high school diploma graduates.

Figure 1. Tier Placement of Education Credentials for the Pilot Program

Tier 1

High School Diploma
Adult Education Diploma
One or more semesters of college
(for non-diploma graduates)
Home School Graduates
ChalleNGe Program Graduates with a GED

Tier 2

GED (non-ChalleNGe Program Graduates)
Occupational Program Certificate
High School Attendance/Completion Certificate
Correspondence School Certificate

Tier 3

Non graduates (“Dropouts”)

The first focus of our study is on home schooled recruits. The home schooled population has increased rapidly over the last 20 to 30 years; growth was particularly pronounced during the 1990s (Lines, 2001). A survey of the literature suggests that currently about 2 percent of all K–12 students in the United States are home schooled (Wenger and Hodari, 2004). Thus, there were about 1 million home schooled students in the United States in 2001, and perhaps 850,000 to 900,000 during the year of our recruit survey. Between 55,000 and 65,000 students receive home schooled diplomas each year. The available research indicates that most home schoolers score well above the average U.S. public school student on standardized tests (Rudner, 1998; Ray, 1999).

The second focus of our study is on graduates of the National Guard Youth ChalleNGe Program who hold GED certificates. The ChalleNGe program, first authorized in Fiscal Year 1993, is operated jointly by the states and state National Guard units. The program targets “at risk” youth—high school dropouts or expellees between the ages of 16 and 18, who are neither on parole nor on probation. The program consists of a 22-week residential phase conducted in a quasi-military environment, followed by a longer mentoring phase. The program resembles bootcamp on several dimensions; ChalleNGe cadets form platoons, march, and engage in intensive physical training. However, ChalleNGe also includes classroom instruction, some of

which focuses on preparing participants to pass the GED exam. Limited studies of the program indicate that, from a societal viewpoint, it is quite cost-effective (Social Consultants International 2000).

The interim report on the Pilot Program (Garcia et al. 2001) focused on 12-month attrition rates of home schooled and ChalleNGe recruits, and compared the attrition rates of these groups with the rates of traditional high school diploma graduates as well as those of recruits holding other types of credentials. The findings included relatively low 12-month attrition rates for ChalleNGe recruits in the Army and Marine Corps and for all home schooled recruits with above-average AFQT scores (i.e., scoring 50 or above, AFQT Categories I-III A). The other major finding of this interim report was that the Services often do not correctly identify recruits' educational credentials. This problem extends to those who enlisted during the Pilot Program (Wenger and Hodari 2004).

Methodology

The authorization for the Pilot Program specifically directed comparison of home schooled and ChalleNGe GED recruits with traditional high school graduates on the following dimensions:

- Attrition
- Discipline
- Adaptability to military life
- Aptitude for mastering the skills necessary for technical specialties
- Reenlistment rates.

To assess the progress of these two credential groups, we surveyed over 65,000 recruits between March 1999 and February 2000. The Survey of Recruits' Education and Background allowed us to collect information on exactly which recruits were home schooled or had participated in the ChalleNGe program. Next, using information collected on the survey (primarily social security numbers), the Defense Manpower Data Center (DMDC) matched the survey information to recruits' electronic personnel files. At the end of this process, we had files containing information on both what the recruits said about their educational credentials and what their official records reported. Finally, the electronic personnel files include information about service completion, aptitude, and other potential outcome measures, such as eligibility for reenlistment.

We supplement this survey with an additional file provided by DMDC that includes counts and attrition rates on *all* recruits who were classified as home schooled or as ChalleNGe participants with GEDs between Fiscal Years 1993 and 2002, inclusive. This final file allows us to explore trends in recruiting home schooled and ChalleNGe graduates over time and helps to guard against basing any recommendation on potentially anomalous situations.

We consider the required dimensions as follows:

Attrition: We measure 12-, 24-, 36-, and, where possible, 48-month attrition rates for all the people in our sample. We also include attrition rates for *all* home schooled and ChalleNGe enlistees who joined during the 5-year pilot program.

Discipline: We measure discipline by examining the prevalence of enlistment waivers as well as the reason for and type of discharge (the last two measures exist only for those who leave the military during our sample period). Waivers may be assigned for many reasons, some of which are not germane to discipline. Therefore, we focus on legal and alcohol/drug waivers as most relevant to individual discipline. In addition, we examine separation codes (which detail the primary reason for separation from the military) and the type of discharge received.

Adaptability: We measure adaptability by examining waivers, separation codes, and type of discharge, as well as eligibility for reenlistment.

Aptitude: We measure aptitude by AFQT scores.

Reenlistment Rates: Because most of those who entered the Services during our sample period had not completed their terms of service when we compiled our dataset in June of 2003 and because of other data issues, it is not possible to calculate reenlistment rates for this group (see Appendix B for more details on the data issues). However, we do measure eligibility for reenlistment; this admittedly imperfect proxy for reenlistment is the best measure available.

Findings

Earlier reports (Garcia et al. 2001, Wenger and Hodari 2004) found differences between which individuals are officially listed as home schooled and ChalleNGe recruits and which individuals indicated on our survey that they had completed either home schooling or the ChalleNGe program. For example, during the course of the Pilot Program the Services tended to erroneously label ChalleNGe and home schooled graduates as high school diploma graduates. Further, a substantial proportion of those who are officially identified as ChalleNGe graduates reported on the survey that they are actually dropouts or hold GEDs but did not complete ChalleNGe. In the Air Force, recruits who are listed as home schoolers often indicated on the survey that they actually hold Associate's degrees. This most likely occurs because of the manner in which the Air Force codes recruits with Associate's degrees (see Laurence, Ramsberger and Arabian, 1996). Finally, official records identify fewer people holding these education credentials than the survey results show. Without the ability to correctly classify recruits, it is difficult for the Services to track the progress of these recruits by education credential without an independent survey, as used in our study.

Throughout this section, except where explicitly noted, we identify recruits' education credentials based on their responses to our survey rather than relying on the official records. In Appendix A, we include parallel attrition results where we identify credentials based on recruits'

official records rather than survey results. Despite these identification problems, our conclusions are not dependent on the data source we use to identify these credentials.

Attrition

We provide 12-, 24-, and 36-month attrition rates by key education credentials (see Figure 2). We provide standard errors, along with results for each educational category, in Appendix A (Tables A1–A3).¹

Figure 2. Attrition Rates by Education Credential, DoD

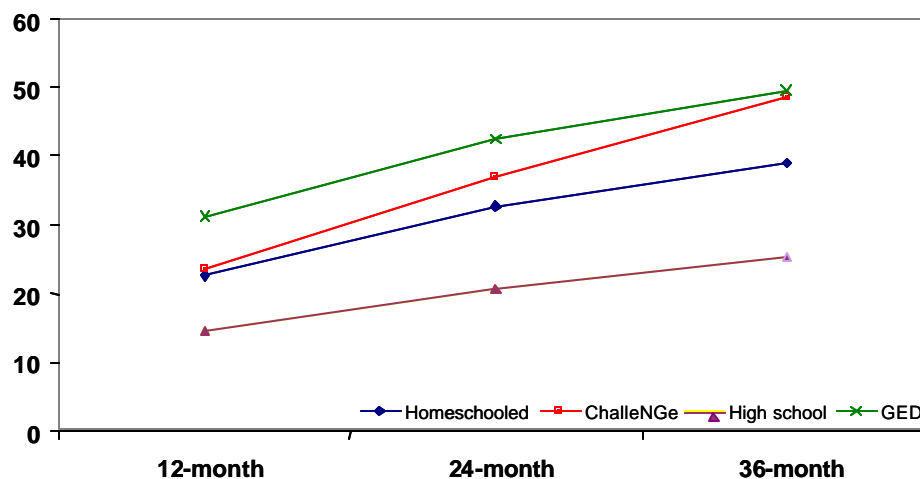


Figure 2 shows that, overall, home schooled and ChalleNGe recruits have considerably higher attrition rates than graduates of high schools.² When possible, we also calculate 48-month attrition rates. Because of our sample sizes and the order in which we surveyed recruits, the Army was the only Service in which we had enough recruits with at least 48 months of potential

¹ In Appendix A, we also include attrition rates for three subgroups: ChalleNGe and home schooled graduates with AFQT scores of 50 or higher, and a sample of home schoolers who were homeschooled for at least 2 years. The first two groups exhibited relatively low 12-month attrition rates (see Garcia et al. (2001)); the third group meets a more stringent definition of home schooling suggested by the results of our survey of home school associations. By 24 to 36 months, these groups all exhibit higher attrition than traditional high school diploma graduates, suggesting that such restrictions will not be valuable to DoD.

² In the Army and the Marine Corps, the 12-month attrition rates of ChalleNGe graduates are at least comparable to those of traditional high school graduates. Across the Services, the 12-month attrition rates of home schooled graduates with above-average AFQT scores are comparable to traditional high school graduates (see Appendix A). These attrition rates are consistent with previous findings (Garcia et al. 2001). By 24 months, however, attrition rates of these sub-groups increase dramatically compared with rates of traditional high school diploma graduates.

experience to report attrition rates. Forty-eight month attrition rates of home schooled and ChalleNGe recruits in the Army remain well above those of traditional graduates.³

We conducted our survey on only one cohort of recruits. While the information we obtained was valuable and it would have been desirable to administer the survey to additional cohorts, it would have been extremely time-intensive and expensive. Reliance on a single cohort raises concerns about sample bias – is the sample somehow unusual because of the sampling period? In fact, the period in which we conducted our survey may not have been typical of the entire 5-year pilot program: we conducted the survey in 1999, in the midst of a fairly difficult recruiting environment. At that time, civilian unemployment was at a record low and wages were climbing, even among those with relatively little education (for example, the average unemployment rate among those with high school degrees but no college was 3.5 percent in 1999; the unemployment rate remained low in 2000 but began to rise in 2001 [Bureau of Labor Statistics 2003]). Due to the strong civilian economy, the Services struggled to meet recruiting goals.

Therefore, to supplement our analysis, we obtained attrition rate data from the Defense Manpower Data Center (DMDC) on *all* home schooled and ChalleNGe recruits who entered the Services immediately before and during the pilot program. We also requested attrition rates on traditional high school diploma graduates and those holding GEDs from the same period. These figures allow us to determine whether our sample of recruits surveyed between March 1999 and February 2000 is typical of recruits who entered the Services during other periods of the pilot program.

Figure 3 shows attrition rates over the entire time period for all four Services.⁴ Attrition rates by Service and fiscal year are consistent over time. Rates for each Service and fiscal year appear in Appendix A.⁵

³ Forty-eight month attrition rates in the Army: traditional high school graduates, 34.7%; home schooled graduates, 43.4%; ChalleNGe graduates, 47.9%.

⁴ Overall attrition rates are weighted by the number of enlistees in each category in each year. Therefore, the small number of recruits brought in during the early years do not unduly influence the averages.

⁵ We do not have enough information to calculate 36-month attrition rates on enlistees from FY01 or 24- or 36-month attrition rates on enlistees from FY02. Navy home schooled recruits from FY99 are not included in these numbers because a substantial number of them did not have legitimate home schooled credentials; including them increases overall attrition rates for home schooled enlistees by 3 to 5 percentage points. This dataset does not allow us to check education credentials as we were able to do on the survey; in this case, we use official education credentials to classify recruits.

Figure 3. Weighted Attrition Rates by Education Credential, Fiscal Year 1996-2002 (excluding Navy home schoolers in Fiscal Year 1999)

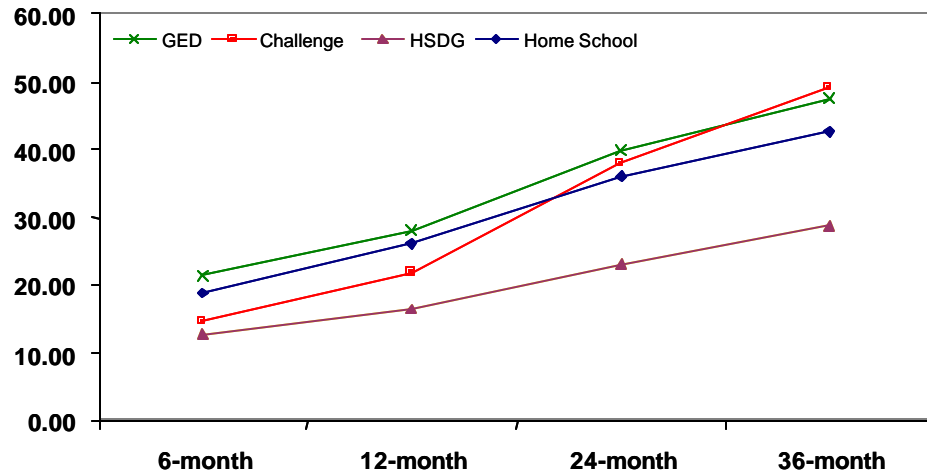


Figure 3 reveals that ChalleNGe recruits actually begin to fall behind before the end of the first year. Therefore, using DMDC’s data makes it clear that, although ChalleNGe recruits have relatively low attrition rates for the first 6 months, their attrition rises rapidly after that. As is the case with our survey data, the low initial attrition rates of ChalleNGe recruits in the first 6 months are driven by ChalleNGe recruits in the Army and the Marines; ChalleNGe recruits in the Navy resemble Tier 2/3 recruits even within the first 6 months. (The same is true for the very small sample of Air Force ChalleNGe recruits.)

Attrition rates for all home schooled and ChalleNGe recruits during the entire period of the pilot project are consistent with the attrition rates exhibited by the recruits in our surveyed sample. Finally, Appendix A reports attrition rates based on official, DMDC-reported credentials (see Tables A5-A8). In these tables, home schooled and ChalleNGe recruits again have substantially higher attrition rates than traditional high school diploma graduates. Therefore, we are confident that the attrition rates in Figure 2 are *not* specific to recruits who entered the Services between March 1999 and February 2000. Overall, home schooled and ChalleNGe recruits had much higher attrition rates than traditional high school diploma graduates throughout the 5-year pilot program.

Other measures

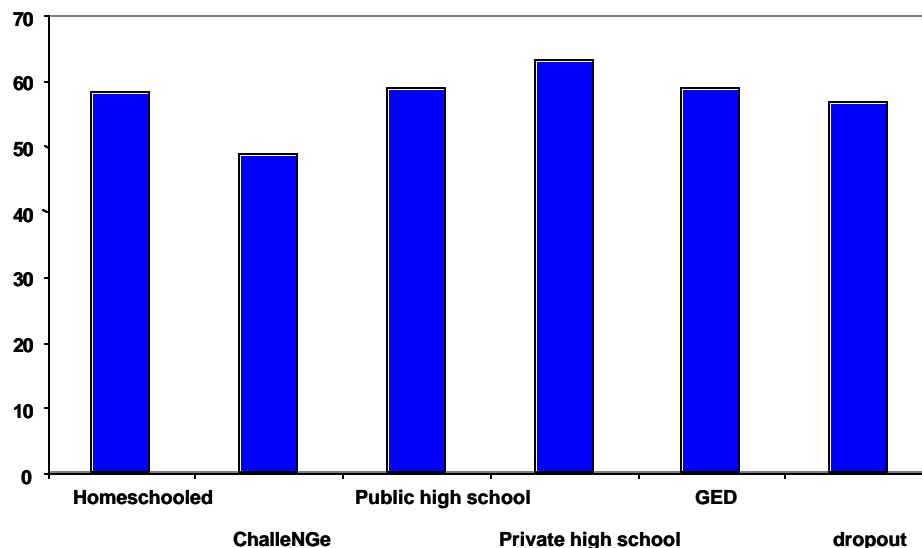
In this section, we present results on all other measures examined in addition to attrition. Our strategy is to compare home schooled and ChalleNGe recruits with traditional high school diploma graduates on each measure. We present all measures, but highlight only those in which

the difference is statistically significant at the 5 percent level or better (in other words, we emphasize only those results for which we can be at least 95 percent certain that the results are *not* due to chance). Appendix B includes detailed data definitions.

Initial aptitude—AFQT scores. Home schoolers’ average AFQT score is not statistically different from that of public school graduates or GED holders; however, we can say with greater than 99.9 percent confidence that home schooled recruits in the military have lower average AFQT scores than private school graduates (see Figure 4). While roughly 30 percent of home schooled recruits score in the top 30 percent on the AFQT, 36 percent score below 50.

These scores of home schooled recruits are surprising in light of other research indicating that home schoolers tend to score well on standardized tests. This suggests that the home schooled recruits who enlist in the military have lower levels of achievement than the group of all students who are home schooled. This may be due to the relatively high rate at which home schooled students attend college and generally low propensity to enlist in the military (Garcia, et al., 2001). In terms of “trainability,” this group is similar to public school students and GED recipients.

Figure 4. Average AFQT Score



ChalleNGe graduates have the lowest average AFQT scores of any group listed in Figure 4; nearly 60 percent of this group scored between 31 and 49 and therefore would not have been eligible, by Service policy, to enlist without the Pilot Program. The average AFQT score of ChalleNGe graduates is about 10 points lower than that of (non-ChalleNGe) GED recipients and about 13 points lower than that of dropouts. (Note that recruits in Tiers 2 and 3 have fairly high average test scores because it is a common Service policy to require Tier 2 and 3 credentialed

recruits to score at or above the 50th percentile on the AFQT.⁶) Because considerable evidence shows that AFQT scores offer an accurate measure of trainability, we might expect that ChalleNGe graduates will be at a disadvantage in terms of trainability compared with other groups.

Waivers. The Services require enlistment waivers for applicants who fail to meet DoD and/or Service enlistment standards. Here, we focus on “legal” waivers (all offenses from traffic tickets to felonies), “serious legal” waivers (serious misdemeanors as well as all felonies), and alcohol/drug use waivers. These three types of waivers make up only a fraction of the total waivers; 28 percent of our sample entered the Services with at least one waiver. About 8 percent of enlistees have a legal waiver, while 6 percent have a serious legal waiver and 4 percent have an alcohol/drug waiver. Because of differences across the Services, we focus on how the prevalence of waivers differs between home schooled recruits and traditional high school diploma recruits, as well as between ChalleNGe recruits and traditional high school diploma recruits, *within* each Service.

Table 1: Percent of Waivers by Waiver Type, Service, Education Credential

		Legal	Serious legal	Alcohol/drug
Army	Traditional high school	3.2	2.5	0.3
	Home schooled	4.0	4.0	0.0
	ChalleNGe	3.8	2.5	1.3
Navy	Traditional high school	11.5	10.4	3.3
	Home schooled	16.8	15.3	2.6
	ChalleNGe	16.0	13.6	4.9
Air Force	Traditional high school	5.8	4.0	0.1
	Home schooled	7.2	4.0	0.8
	ChalleNGe	3.4	3.4	0.0
Marines	Traditional high school	11.1	7.0	17.8
	Home schooled	10.5	3.9	15.8
	ChalleNGe	18.0	10.0	44.0

Note: A **bold** figure is significantly different than the figure for traditional high school diploma graduates in the same Service (minimum 95-percent confidence).

⁶ Also, some of the difference in scores is probably due to the relatively young age of ChalleNGe recruits; AFQT scores increase slightly with age.

In the Navy, home schooled recruits are more likely to have legal waivers, and are more likely to have serious legal waivers, than traditional high school diploma graduates are (see Table 1). In the Marines, ChalleNGe recruits are more likely than traditional high school diploma graduates to have alcohol/drug waivers.⁷

Reasons for separation. Our data include a separation code for each recruit who left the military between the date of entry and June 2003. The Services report a separation code for each person who leaves active duty, whether before or at the end of his or her obligation. The information contained in the separation codes should be used with caution because there is evidence that the codes are limited in their ability to reflect the complex reasons that people have for leaving the Services.⁸ Keeping these caveats in mind, we aggregate the separation codes into positive and negative categories (see Appendix B for details).

The sample sizes are very small at this point (we have only 37 ChalleNGe recruits who are coded as leaving the Army with a negative loss code), so in most cases the differences are not statistically significant. However, we can say that both ChalleNGe and home schooled recruits are more likely than other recruits to leave the (combined) Services for negative reasons. In addition, we can say that ChalleNGe and home schooled recruits are more likely than other recruits to leave the Army for negative reasons (see Table 2). This suggests that those ChalleNGe and home schooled recruits who leave the Services are not viewed as particularly desirable Service members at the time of their departure.

Table 2: Percentage of Losses Classified as Negative

	Army	Navy	Air Force	Marines	DoD
Home schooled	53	95	93	100	77
ChalleNGe	58	98	100	91	79
Public school	39	94	87	95	59
GEDs	60	98	87	100	77
Non Graduates	59	99	89	98	79

Note: A **bold** figure is significantly different than the figure for traditional high school diploma graduates in the same Service (minimum 95-percent confidence).

⁷ In many cases, the differences between home schooled/ChalleNGe recruits and traditional high school recruits are consistent with those reported in Table 1, but the other differences are not statistically significant. Most of the alcohol/drug waivers assigned by the Marines are for experimentation with marijuana.

⁸ Potential problems stem from the fact that each record includes only one separation code and that codes are often entered by relatively junior personnel. For more details of problems with separation codes, see Laurence, Naughton, and Harris (1996) and Cooke and Quester (1988).

Category of discharge. Type of discharge may provide a more accurate measure than the separation code of the circumstances under which a person leaves the Services. Discharges can be categorized in several different ways. We group discharge categories as follows: “Honorable” (including “Honorable” and “Under honorable conditions”), “Less than honorable” (including “Bad conduct,” “Under other than honorable conditions,” and “Dishonorable”), “Uncharacterized” (used mainly for those with a series of minor disciplinary infractions), and “Unknown.” Across the Services, there are large differences in the percentage of discharges coded in each category. Therefore, we focus on within-Services differences across education credential. Specifically, we compare home schooled and ChalleNGe recruits with traditional high school diploma graduates. In each Service, more home schooled recruits than traditional high school recruits receive “Less than honorable” discharges. In each Service except the Air Force, ChalleNGe recruits receive more “Less than honorable” discharges than traditional high school recruits; in the Air Force, ChalleNGe recruits receive fewer “Honorable” discharges but more “Uncharacterized” discharges. In many cases, however, these differences are not statistically significant. Table 3 reports all figures; those that are statistically different from traditional high school graduates appear in bold. The overall pattern, and the statistically significant cases, do not reflect positively on either home schooled or ChalleNGe recruits. Discharge codes indicate that, when these recruits leave the Services, they often are viewed as less desirable than traditional high school graduates.

Table 3. Percentage of Leavers in Each Discharge Category

	Discharge category	Army	Navy	Air Force	Marines
Traditional high school graduates	Honorable	61	45	70	21
	Less than honorable	1.8	17	3.1	18
	Uncharacterized	37	11	21	31
	Unknown	0.3	27	5.9	30
Home schooled recruits	Honorable	58	35	71	3.0
	Less than honorable	3.1	22	4.4	21
	Uncharacterized	37	14	18	52
	Unknown	1.6	29	6.7	24
ChalleNGe recruits	Honorable	65	24	56	15
	Less than honorable	5.6	24	0.0	39
	Uncharacterized	29	20	39	19
	Unknown	0.0	32	5.6	27

Note: A **bold** figure is significantly different than the figure for traditional high school diploma graduates in the same Service (minimum 95-percent confidence).

Eligibility for reenlistment. We also have information on the reenlistment eligibility of those who left the Services. Each Service codes each loss record based on whether that person would have been eligible to reenlist. The codes vary across Services; therefore, we again focus on differences across education credentials within a Service rather than differences across Services. Also, like separation and discharge codes, this measure only exists for those who have completed their obligation or left before completion.

First, we aggregated the eligibility codes into four categories: “eligible to reenlist,” “ineligible to reenlist,” “needs a waiver to reenlist,” or “unknown.”⁹ Next, we examined all the people who filled out our survey but subsequently left the Services (between the date of the survey and June 2003). Sixteen percent of those who left the Services were coded as “eligible to reenlist” (see Table 4).

Table 4: Percentage of departing recruits who are eligible to reenlist

	Army	Navy	Air Force	Marines	DoD
All recruits	20.1	2.5	24.6	3.0	16.0
Home schooled	15.2	3.2	13.3	3.5	9.9
ChalleNGe	11.6	2.2	11.1	4.4	7.7
Public school	19.8	3.3	24.3	3.3	16.3

Note: A **bold** figure is significantly different than the figure for traditional high school diploma graduates (minimum 95-percent confidence).

In the cases of the Army, the Navy, and the Air Force, the Services are less likely to code either home schooled recruits or ChalleNGe recruits as eligible to reenlist, compared with traditional graduates (the differences are very small in the Navy). In the case of the Marine Corps, both home schooled and ChalleNGe graduates are slightly *more* likely than traditional graduates to be considered eligible. None of these within-Service differences are statistically significant, but we can say that, across the four Services combined, both home schooled and ChalleNGe recruits are less likely to be eligible to reenlist than traditional high school diploma graduates.

Conclusions and Recommendations

Both home school diploma graduates and ChalleNGe GED holders who enlisted in the military exhibit high rates of attrition across the four Services. We recognize that 12-month attrition rates are relatively low for some home schooled and ChalleNGe recruits; namely, ChalleNGe recruits

9 Because eligibility codes are highly detailed and differ across the Services, we aggregated the codes into these four consistent categories. Only the Army uses the “needs a waiver” category.

have low 12-month attrition rates in the Army and Marine Corps, and home schooled recruits with above-average AFQT scores have 12-month attrition rates on a par with those of traditional high school graduates. Over time, however, the attrition rates of these groups increase. By the 36-month point, all ChalleNGe and home schooled recruits exhibit substantially higher attrition than traditional high school diploma graduates. The DMDC dataset, including all recruits with these credentials during the course of the Pilot Program, shows similar results.¹⁰ Given that tier placement is based on attrition rates, the data do not support considering ChalleNGe or home schooled recruits on a par with high school diploma graduates or permanently placing these credentials in Tier 1.

In addition to attrition rates, we evaluated several other military performance measures, such as enlistment waivers, AFQT scores, separation codes, type of discharge, and eligibility for reenlistment. These outcome measures serve as indices of other characteristics we were directed to study: discipline, adaptability, aptitude, and reenlistment. Home schooled and ChalleNGe recruits occasionally compare favorably with traditional graduates within some Services. However, in the majority of cases when these recruits differ from traditional high school diploma graduates, home schooled and ChalleNGe recruits have measurably less positive outcomes. This is true both when they enter the Services (based on AFQT scores and waivers) and when they depart (based on reason for separation, type of discharge, and eligibility for reenlistment). Therefore, our other measures are generally in agreement with our attrition figures; home schooled and ChalleNGe recruits are not on a par with traditional high school graduates in terms of discipline, adaptability, aptitude, and reenlistment. Thus, the other sources of data also do not support placing ChalleNGe GED or home schooled credentials in Tier 1.

In both cases, restricting these credentials to a lower tier will effectively deny entry to many individuals because a substantial minority of home schooled recruits and the majority of ChalleNGe recruits have AFQT scores below 50. This finding is not a reflection on the overall value of home schooling or the ChalleNGe program; in fact, ChalleNGe recruits compare favorably with other Tier 2 recruits in terms of initial attrition. Since those with AFQT scores of 50 or better have somewhat lower attrition rates than all ChalleNGe recruits, high-scoring ChalleNGe recruits may perform better than other groups of Tier 2 recruits. However, as a group, ChalleNGe GED recruits' high attrition rates make them inappropriate for Tier 1 credential treatment. Based on the results of this Pilot Test, as well as our historical experience, there is no empirical support for treating either home schooled or ChalleNGe GED recruits on a par with high school diploma graduates for determining enlistment eligibility. Further, these two education credentials represent a small proportion of high school graduates (Tier 1 and 2). In fact, the Services were able to recruit only small numbers of youth with these credentials throughout the Pilot Program and there is no reason to expect the numbers to grow dramatically in the future. Even with the growth in popularity of home schooling, research has shown that home schooled youth generally do not show a high propensity to join the military.

Therefore, we recommend maintaining the Tier 2 placement of home school diploma graduates and ChalleNGe GED certificate holders. Additionally, given that many of these credential

¹⁰ In fact, attrition rates of homeschooled and ChalleNGe recruits are somewhat higher by DMDC's calculations. This difference occurs because of differences in which recruits are identified as homeschooled or ChalleNGe graduates depending upon the data source used.

holders have desirable characteristics that other Tier 2 credential holders may lack (e.g., non-ChalleNGe GED holders), we would encourage the Services to use their waiver authority for in-Service policies that preclude the enlistment of particularly promising youth who have a Tier 2 credential. While the Tier placement of these credentials should revert to the pre-Pilot Program status, the Services do not need to turn away strong candidates for enlistment.

Appendix A: Additional Attrition Results

In Tables A1 through A3, we present attrition rates by education credential for all four Services, as well as DoD averages. These tables also include confidence intervals for each attrition rate. In each case, we can say with 90-percent certainty that the actual attrition rate falls within the confidence interval. Note that in cases of small samples, confidence intervals are quite large.

The DoD-wide results in Tables A1 through A3 are not weighted. Weighting these figures to reflect the fact that we surveyed different proportions of enlistees across the four Services changes the DoD averages by only a very small amount (see Wenger and Hodari (2004)).

Finally, we performed regression analysis to make sure that the relationships between education credential and attrition are not caused by other factors. We find that, even after including numerous personal characteristics, both home schooled and ChalleNGe recruits are less likely than traditional high school diploma graduates to complete 12, 24, or 36 months of service. (See Wenger and Hodari (2004) for regression results.)

Table A1. 12-month attrition rates by education credential and Service with confidence intervals in parentheses.

Education Credential	Army	Navy	Air Force	Marines	DoD
Tier 1:					
Home schooled	22.8 (17.3-29.2)	28.4 (23.1-34.3)	10.4 (6.3-16.0)	27.6 (19.3-37.3)	22.6 (19.7-25.8)
ChalleNGe	12.7 (7.0-20.5)	33.3 (24.7-42.9)	37.9 (22.9-54.9)	16.0 (8.2-27.0)	23.4 (19.0-28.4)
Public school	17.0 (16.5-17.4)	17.6 (17.0-18.2)	8.2 (7.8-8.7)	15.0 (14.4-15.7)	14.6 (14.3-14.8)
Private school	17.1 (14.9-19.6)	21.0 (18.6-23.5)	8.9 (7.1-11.0)	15.2 (12.6-18.2)	15.9 (14.8-17.2)
Adult education	20.5 (17.5-23.9)	24.3 (21.2-27.6)	12.3 (8.8-16.7)	21.2 (17.3-25.5)	20.8 (19.0-22.6)
College semester: academic	28.1 (24.6-31.8)	24.1 (21.1-27.3)	12.0 (8.7-16.0)	21.0 (16.8-25.7)	22.8 (21.0-24.7)
College semester: vocational	30.3 (24.7-36.5)	31.9 (25.8-38.5)	11.4 (4.6-22.4)	21.2 (12.3-32.6)	27.9 (24.3-31.6)
College: 2 years	19.9 (16.7-23.4)	17.7 (14.1-21.7)	5.9 (3.7-8.8)	15.9 (9.6-224.0)	15.4 (13.6-17.3)
College: 4 years or more	9.9 (7.9-12.2)	17.2 (13.3-21.7)	5.4 (3.0-9.0)	5.4 (1.5-13.3)	10.6 (9.0-12.3)
Tier 2:					
GED	31.3 (29.2-33.5)	32.2 (30.2-34.3)	18.9 (12.4-27.0)	28.6 (23.9-33.6)	31.1 (29.8-32.6)
Occupational program	18.5 (14.8-22.7)	32.9 (6.9-39.5)	5.7 (2.9-10.1)	16.9 (11.8-23.1)	19.0 (16.6-21.6)
HS attendance/completion	23.0 (18.2-28.4)	19.5 (15.9-23.5)	8.0 (5.1-12.0)	17.7 (14.0-22.0)	17.4 (15.5-19.5)
Correspondence school	10.5 (4.7-19.7)	19. (10.4-31.0)	6.7 (.34-27.9)	14.4 (8.3-22.8)	13.8 (10.0-18.6)
Tier 3:					
No credential	28.7 (26.2-31.2)	30.7 (28.6-32.9)	11.6 (6.6-18.4)	23.2 (19.4-27.4)	28.4 (26.9-29.9)
Credential unknown	18.1 (13.6-23.3)	21.8 (16.8-27.6)	14.3 (7.7-23.6)	21.8 (14.8-30.4)	19.5 (16.7-22.6)

Table A2. 24-month attrition rates by education credential and Service with confidence intervals

Education Credential	Army	Navy	Air Force	Marines	DoD
Tier 1:					
Homeschooled	32.9 (26.5-39.8)	40.0 (34.0-46.2)	21.6 (15.7-28.5)	32.9 (24.0-42.8)	32.8 (29.4-36.3)
ChalleNGe	26.6 (18.6-36.0)	44.4 (35.0-54.2)	58.6 (41.7-74.1)	28.0 (17.8-40.3)	36.8 (31.6-42.3)
Public school	23.7 (23.2-24.2)	23.8 (23.2-24.5)	13.8 (13.3-14.3)	19.7 (18.9-20.4)	20.6 (20.3-20.9)
Private school	26.0 (23.4-28.8)	26.0 (23.5-28.7)	15.3 (13.0-17.9)	20.8 (17.8-24.1)	22.5 (21.2-23.9)
Adult education	31.0 (27.5-34.7)	33.7 (30.2-37.3)	20.4 (15.9-25.5)	27.3 (23.0-31.9)	30.0 (27.7-31.7)
College semester: academic	38.1 (34.3-42.0)	32.2 (29.0-35.7)	15.8 (12.0-20.1)	25.0 (20.5-29.9)	30.1 (28.2-31.2)
College semester: vocational	37.6 (31.6-44.0)	41.9 (35.3-48.7)	22.7 (12.9-35.5)	28.8 (18.7-40.9)	36.6 (32.8-40.6)
College: 2 years	25.3 (21.8-29.1)	22.0 (18.1-26.3)	9.6 (6.8-13.1)	18.3 (11.6-26.8)	19.8 (17.8-21.9)
College: 4 years or more	14.7 (12.3-17.4)	21.7 (17.4-26.5)	9.2 (5.9-13.5)	12.5 (6.0-22.2)	15.3 (13.5-17.2)
Tier 2:					
GED	43.7 (41.3-46.0)	43.8 (41.6-46.0)	27.8 (20.1-36.6)	34.9 (29.9-40.2)	42.5 (41.1-44.0)
Occupational program	27.3 (22.3-31.9)	40.2 (33.8-46.9)	17.9 (12.7-24.0)	19.1 (13.8-25.5)	26.9 (24.2-29.7)
HS attendance/ completion	28.5 (23.3-34.2)	25.7 (21.7-30.0)	14.1 (10.2-18.8)	20.7 (16.7-25.1)	22.6 (20.4-24.8)
Correspon-dence school	15.8 (8.5-25.9)	23.4 (13.7-35.7-8)	33.3 (14.2-57.7)	18.4 (11.5-27.3)	20.0 (15.4-25.3)
Tier 3:					
No credential	39.1 (36.4-41.9)	41.5 (39.2-43.8)	18.9 (12.6-26.8)	30.3 (26.1-34.8)	38.5 (36.9-40.1)
Credential unknown	28.7 (23.3-34.6)	28.7 (23.1-34.9)	22.2 (14.0-32.5)	31.0 (22.9-40.2)	28.3 (25.0-31.8)

Table A3. 36-month attrition rates by education credential and Service with confidence intervals

Education Credential	Army	Navy	Air Force	Marines	DoD
Tier 1:					
Home schooled	39.6 (32.9-46.6)	45.3 (37.1-51.5)	28.8 (22.2-36.2)	38.2 (28.9-48.2)	38.9 (35.4-42.5)
ChalleNGe	45.6 (36.0-55.4)	51.9 (42.2-61.4)	62.1 (45.1-77.1)	40.0 (28.3-52.6)	48.5 (43.0-54.1)
Public school	29.0 (28.5-29.6)	28.5 (27.8-29.3)	18.3 (17.7-18.9)	23.8 (23.0-24.6)	25.4 (25.0-26.7)
Private school	31.9 (29.1-34.9)	30.0 (27.4-32.8)	19.5 (17.0-22.3)	25.0 (21.8-28.5)	27.1 (25.7-28.6)
Adult education	38.0 (34.3-41.9)	40.5 (36.9-44.2)	26.1 (21.1-31.5)	34.8 (30.2-40.0)	36.5 (34.5-38.7)
College semester: academic	44.5 (40.6-48.5)	37.3 (33.9-40.8)	20.3 (16.2-26.1)	28.6 (23.9-33.7)	35.3 (33.3-37.4)
College semester: vocational	47.2 (40.8-53.6)	47.5 (40.8-54.3)	27.3 (16.6-40.4)	40.4 (28.9-52.7)	44.5 (40.5-48.5)
College: 2 years	30.5 (26.7-34.4)	26.7 (22.5-31.2)	11.4 (8.4-15.1)	24.4 (16.8-33.4)	24.1 (21.9-26.3)
College: 4 years or more	19.0 (16.3-22.0)	22.5 (18.2-27.4)	11.9 (8.2-16.5)	17.9 (10.0-28.4)	18.5 (16.6-20.6)
Tier 2:					
GED	50.8 (48.4-53.1)	51.2 (48.9-53.4)	34.4 (26.1-43.5)	39.7 (34.5-45.0)	49.6 (48.0-51.1)
Occupational program	32.2 (27.6-37.0)	42.7 (36.2-49.4)	20.7 (15.2-27.2)	24.2 (18.3-31.1)	30.9 (28.0-33.8)
HS attendance/ completion	31.5 (26.1-37.3)	31.0 (26.7-35.5)	18.1 (13.7-23.2)	25.5 (21.1-30.2)	27.0 (24.7-29.4)
Correspon-dence school	22.8 (14.1-33.8)	34.0 (22.7-47.0)	33.3 (14.2-57.7)	22.4 (14.8-31.6)	26.2 (21.0-31.8)
Tier 3:					
No credential	47.6 (44.9-50.4)	48.7 (46.3-51.0)	24.2 (17.1-32.5)	37.2 (32.7-41.8)	46.0 (44.4-47.6)
Credential unknown	35.1 (29.3-41.2)	31.6 (26.8-37.9)	31.7 (22.1-42.7)	35.6 (27.1-44.9)	33.6 (30.1-37.2)

Table A4 includes 6-, 12-, 24-, and 36-month attrition rates of *all* homeschooled and ChalleNGe recruits who entered the Services from FY96 to FY02, by fiscal year. We also include attrition rates of traditional high school diploma graduates and enlistees with GEDs for comparison purposes. These attrition rates were calculated by DMDC; recruits' education credentials were identified from the recruits' official records. We present the results separately by fiscal year. Note that some cell sizes are quite small; we report no attrition rates for cells with fewer than 20 recruits. Figures A1 through A4 break down this information by Service; again, we report no attrition rates for cells with fewer than 20 recruits.

Table A4. Attrition rates for all four Services combined, by fiscal year

		GED	ChalleNGe	Traditional HS diploma	Homeschooled
FY96	# of accessions	5,799	0	160,479	59
	6-month	22.60	~	13.49	15.26
	12-month	30.67	~	17.84	16.95
	24-month	41.81	~	24.47	20.34
	36-month	49.25	~	30.11	30.51
FY97	# of accessions	9,921	0	163,616	99
	6-month	21.38	~	13.28	13.14
	12-month	28.25	~	17.42	19.20
	24-month	40.72	~	24.39	29.30
	36-month	48.06	~	29.68	34.35
FY98	# of accessions	9,451	12	155,070	120
	6-month	24.20	*	15.02	19.17
	12-month	31.77	*	18.78	22.50
	24-month	43.42	*	24.86	30.84
	36-month	50.05	*	29.45	32.50
FY99	# of accessions	11,920	461	155,486	292
	6-month	24.85	18.66	13.75	19.87
	12-month	32.02	27.34	17.66	26.38
	24-month	41.06	40.57	23.50	33.22
	36-month	48.14	50.11	28.19	38.70
FY00	# of accessions	12,357	762	149,820	764
	6-month	20.33	16.41	11.65	22.26
	12-month	25.39	23.76	15.33	31.55
	24-month	36.19	37.93	21.15	41.24
	36-month	43.91	48.82	25.96	47.78
FY01	# of accessions	14,274	881	149,537	841
	6-month	18.84	13.29	10.42	17.72
	12-month	24.46	21.23	13.80	25.45
	24-month	37.37	36.78	19.81	34.61
	36-month	~	~	~	~
FY02	# of accessions	11,983	943	148,270	670
	6-month	19.27	12.52	10.24	16.57
	12-month	25.86	18.35	13.65	22.99
	24-month	~	~	~	~
	36-month	~	~	~	~

Notes: Attrition rates calculated by DMDC for all accessions in each educational category; educational category determined by official records. ChalleNGe education code used consistently beginning in FY99. Insufficient time has passed to calculate 36-month attrition rates for FY01-02 or 24-month attrition rates for FY02. Finally, note that Navy homeschooled accessions from FY99 are excluded.

* Fewer than 20 individuals in cell.

Figure A1. Attrition Rates by Education Credential, FY96-02, Army

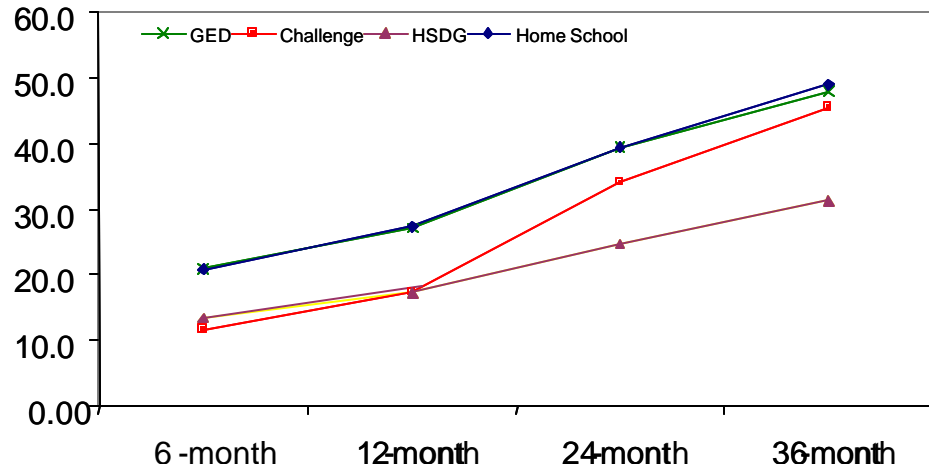


Figure A2. Attrition Rates by Education Credential, FY 96-02, Navy

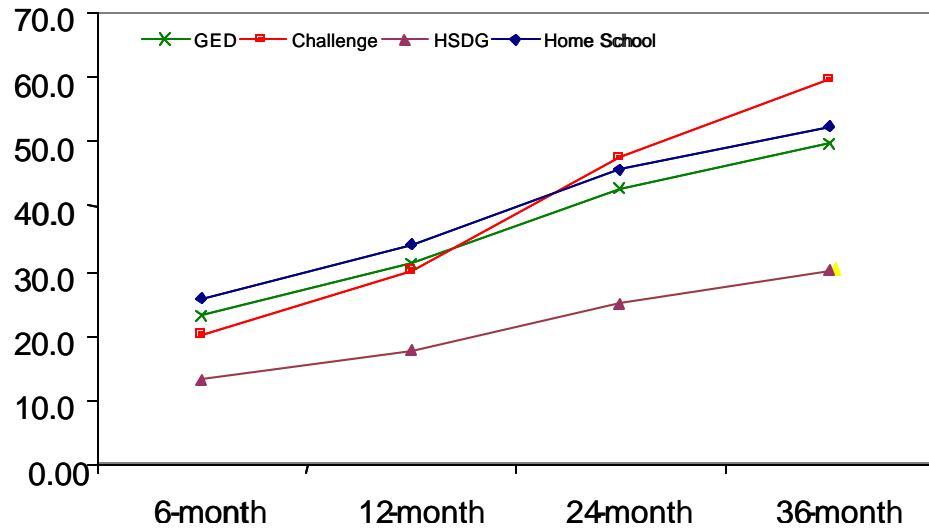
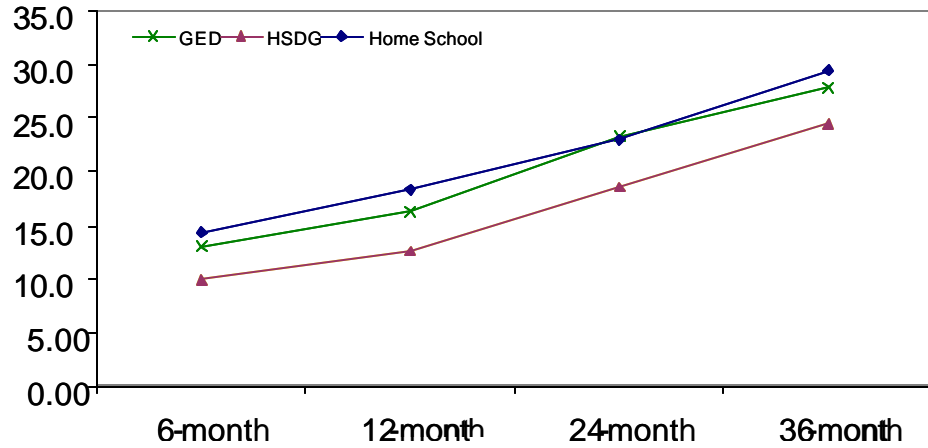
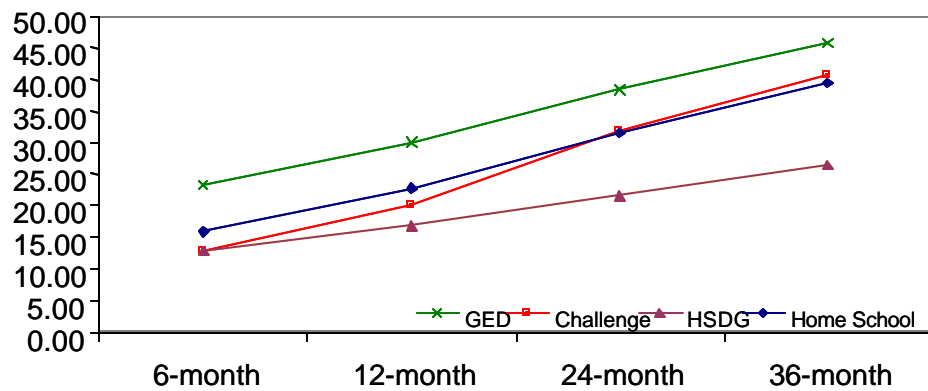


Figure A3. Attrition Rates by Education Credential, FY 96-02, Air Force



(Note: Sample size of ChalleNGe recruits in the Air Force is too small to report accurate attrition rates).

Figure A4. Attrition Rates by Education Credential, FY 96-02, Marine Corps



Next, we look at attrition rates based on the education credential listed on each recruit's official record. Table A5 shows 12-month attrition rates for recruits with each of five different education credentials. As in table A1, ChalleNGe recruits have lower 12-month attrition rates than traditional graduates in the Army. ChalleNGe recruits in the Marine Corps, however, exhibit

higher attrition rates than traditional graduates. Another large difference between table A1 and table A5 is that, according to DMDC’s official records, home schooled recruits in the Air Force exhibit *very* low levels of attrition. These differences occur because the recruit survey and official records identify different people as home schooled, especially in the Air Force (see Wenger and Hodari (2004)).

Table A5. Twelve-month attrition rates by DMDC education credential

	Army	Navy	Air Force	Marines	DoD
Home schooled	25.0	29.2	6.9	32.3	25.5
ChalleNGe	12.7	38.6	**	20.7	26.1
High school	17.1	18.4	8.5	15.3	15.0
GED	32.0	32.2	13.5	27.8	31.1
Non Graduate	**	32.0	**	28.9	31.3
Overall *	18.6	21.0	8.5	16.2	16.6

Notes: Overall figures reflect total attrition, by branch and for all Services combined, rather than the average of the figures shown for each branch because some education credentials are not included in the table.

**Extremely small sample (n < 20).

Table A6 shows 24-month attrition rates. At this point, ChalleNGe graduates in each Service and homeschooled recruits in the Army, the Navy, and the Marines have substantially higher rates of attrition than traditional graduates.

Table A6. Twenty-four-month attrition rates by DMDC education credential

	Army	Navy	Air Force	Marines	DoD
Home schooled	37.5	40.6	13.8	32.3	34.9
ChalleNGe	32.7	48.2	**	34.5	40.2
High school	24.1	24.6	14.3	20.0	21.1
GED	43.5	43.1	18.0	33.9	41.7
Dropout	**	42.9	**	42.1	42.3
Overall *	26.0	28.2	14.2	21.0	23.1

Notes: Overall figures reflect total attrition, by branch and for all Services combined, rather than the average of the figures shown for each branch because some education credentials are not included in the table.

**Extremely small sample (n < 20).

Table A7 shows 36-month attrition rates. At this point, home schooled and ChalleNGe recruits have higher attrition rates than traditional recruits, with the exception of home schooled recruits in the Air Force.

Table A7. Thirty-six-month attrition rates by DMDC education credential

	Army	Navy	Air Force	Marines	DoD
Home schooled	44.6	45.8	17.2	45.2	41.5
ChalleNGe	45.5	57.8	**	48.3	51.8
High school	29.6	29.2	18.9	24.4	26.0
GED	50.6	50.2	20.7	39.1	48.5
Dropout	**	50.1	**	42.1	49.1
Overall *	31.6	33.3	18.7	25.5	28.2

Notes: Overall figures reflect total attrition, by branch and for all Services combined, rather than the average of the figures shown for each branch because some education credentials are not included in the table.

**Extremely small sample (n < 20).

Finally, table A8 shows 48-month attrition rates for the Army. Again, attrition rates of homeschooled and ChalleNGe recruits are substantially higher than those of traditional graduates.

Table A8. Forty-eight-month attrition rates by DMDC education credential

	Army	Navy	Air Force	Marines	DoD
Home schooled	50.0	~	~	~	~
ChalleNGe	51.7	~	~	~	~
High school	35.4	~	~	~	~
GED	53.4	~	~	~	~
Dropout	**	~	~	~	~
Overall *	38.4	~	~	~	~

Notes: Overall figure reflects total Army attrition. This figure is not the average of the figures in the table because not all education credentials are included.

** Extremely small sample size (n < 20).

Appendix B: Description of the Survey Sample and Definitions

Sample description

Throughout the results section, we define educational credential based on the recruit survey, *not* the recruit's official record. We do this because, as detailed in Garcia et al. (2001) and Wenger and Hodari (2004), there are substantial discrepancies between recruits' official credentials and the credentials that recruits themselves report on the survey. We believe the survey credentials to be more accurate than the official records because, in the majority of discrepancies, recruits indicate to us that they have fewer educational qualifications than their records indicate (for example, some recruits' records indicated that they held GEDs, but they indicated on the survey that they held no credential). (For comparison purposes, we report attrition rates based on recruits' official credentials in Appendix A.)

Our sample is made up of 67,091 surveys from enlisted recruits from each of the four Services, matched to DMDC tracking files. For additional details on data cleaning, see Wenger and Hodari (2004).

Definitions

When calculating **attrition**, we identified each recruit's length of obligation. If the recruit was within 6 months of the end of his/her obligation and left the Service, we did not count this loss as attrition. In addition, we recoded the records of all recruits who left the Service and reenlisted immediately. These recruits usually entered officer programs; we identified these cases as continuation of service rather than as attrition.

Reasons for **waivers** include height/weight, age, having dependents (including a spouse in the military), and aptitude (i.e., lower score on the AFQT than is required for a given education credential). The Services also assign waivers to enlistees who have a history of legal problems, such as minor traffic violations, misdemeanors, and felonies. The Services also assign waivers for those who have a history of using or abusing drugs or alcohol. Each Service assigns these waivers based on its own policies; mainly for this reason, the proportion of enlistees with waivers differs dramatically across the Services.

In general, we categorize **loss codes** as positive or negative. Positive codes include reaching the end of one's obligation and becoming an officer; negative codes include various types of unsatisfactory performance. A given code may be considered either positive or negative depending on when it occurs in relation to a person's obligation.

We chose *not* to calculate **reenlistment rates** even for those for whom we had at least 48 months of data. We made this decision based on a number of problems we experienced determining the end-of-active-obligated-service (EAOS) dates and the separation program designator (SPD) codes. For

example, we found evidence that EAOS dates were changed to coincide with loss dates. (Based partly on this, we liberalized our definition of a positive versus a negative loss as described above .) Across the Services, we found inconsistencies between the SPD and the date of last enlistment. For example, the SPD of numerous recruits indicated attrition due to personality disorder, misconduct, etc., yet the date of last enlistment indicated that the person was allowed to reenlist. In addition, there are a substantial number of obviously incorrect last enlistment dates, such as 000000 or 192412. In many cases, the eligibility of people who left the Services was coded “UNKNOWN.” For these reasons, we were not confident in our ability to accurately calculate either straight reenlistment rates or the commonly accepted metric of reenlistment conditional on eligibility.

We identified recruits as **home schooled** on the basis of several alternate definitions. The most restrictive definition follows:

- Hold a diploma from parents, tutors, an association, or an umbrella school for home schooling, *and*
- Completed the twelfth grade at home, or graduated early after being schooled at home, *and*
- Were not expelled from high school, *and*
- Completed 2 or more years of home schooling.

This definition is based on information and recommendations of what constitutes a home schooled high school graduate from our Survey of Home school Associations (see Garcia et al. (2001)). Specifically, we sought to avoid classifying as home schooled those who were expelled or urged to leave public schools. A total of 359 recruits met all four conditions. However, this definition is rather restrictive and does not match the conditions required by DoD (specifically, there is no requirement that a recruit be home schooled for more than 1 year to be considered a home schooled graduate). Therefore, we explored several different potential definitions of home schooling:

- *Definition 1:* Completed twelfth grade at home, earned diploma from parents/tutor or home schooling association, was not expelled from high school or junior high. (Alternately, the recruit may have indicated that he or she completed at least 2 years of high school at home, graduated early, and met the other requirements.)
- *Definition 2:* Was home schooled for 2 or more years in high school, completed twelfth grade in a private school, was not expelled.
- *Definition 3:* Completed twelfth grade and at least one other grade of high school at home, was not expelled and received a GED.
- *Definition 4:* Completed twelfth grade and at least one other grade of high school at home, was not expelled, earned a correspondence school diploma.

Definition 1, met by the largest number of recruits, is closest to the most common definition of being home schooled. We were concerned, however, that we might miss some recruits who are truly home schooled but who attended umbrella schools or supplemented their home schooling with outside course work. For this reason, we considered Definition 2. We considered Definition 3 because we were concerned that some home schooled students might earn a GED in lieu of a home schooling association diploma; we considered Definition 4 for a similar reason. Therefore, we formed a less restrictive definition from a combination of individuals in the four categories above; this is the primary definition that we use throughout the report. A total of 540 recruits met one of these definitions (this group includes the 359 home schooled recruits identified by the more restrictive definition). We defined these 540 recruits as home schooled, but we also tested the more restrictive definition discussed above.

Identifying **ChalleNGe** graduates was more straightforward. We identified ChalleNGe graduates based on two pieces of information: first, the recruit indicated that he or she graduated from a ChalleNGe program; second, the recruit indicated that he or she earned a GED *or* an adult education diploma. We recognized adult education diplomas because some states do not grant GEDs to ChalleNGe Program participants. In most cases, this is because the states have an age limit on who may take the GED. By this definition, we identified 239 recruits who were ChalleNGe graduates.

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