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GED Recipients versus Traditional High School Graduates: Exploring the Academic Achievement – Locus of Control Relationship

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Abstract

A study was conducted to investigate academic achievement and the role locus of control played in GED recipients' and traditional high school graduates' post-secondary performance. The covariates of gender, age, race, and number of previous semesters students spent in college, were examined as well. No significant difference in academic achievement of either group in terms of locus of control, age, or time in college was found. However, with regard to locus of control, participants exhibiting higher internality also had higher GPAs – thus supporting the prevailing supposition that an internal locus of control is associated with greater academic outcomes. Further, gender and the interaction of type of diploma and gender was shown to be significant in that females in the sample had a significantly higher GPA than males. The covariate of race was shown to be significant in that Caucasian participants had significantly higher GPAs than African Americans and others.

Keywords: GED recipient, Locus of Control, Academic Achievement, Postsecondary Performance

1 Introduction

In 2015, the United States Department of Education reported that the high school graduation rate had "hit an all-time high" of more than 83% (Obama White House Archives, 2016). Deputy Secretary John King remarked, "It is encouraging to see our graduation rate on the rise and I applaud the hard work we know it takes to see this increase" (U.S. Department of Education, 2015). But as was also indicated, despite the apparent rise in the numbers of students completing high school, the dropout rate continues to be a serious issue. In 2009, more than 500,000 students dropped out (National Center for Education Statistics [NCES], 2013). Further, 1.8 million young adults ages 16-21 are neither enrolled in school nor have completed a high school education (EPE Research Center as cited in Sparks, 2013). Moreover, it is estimated that nearly 39 million Americans between the ages of 18 – 44 lack a high school diploma (Broad, 2014). For students who, for myriad reasons, do not persist to high school graduation, without the opportunity to obtain a high school equivalency credential, the actualization if a lucrative future may never be realized (Pew Research Center, 2014).

Significance

According to Kroll (1993), society's economic success can be predicted by the educational attainment of its members. As such, reconnecting out-of-school youth to educational opportunities and then aiding in transitioning them from high school completion (either traditional graduation or via high school equivalency) to postsecondary education should remain paramount. Merely obtaining a high school credential will not be enough to be competitive in today's technologically rich society (Git, 2014). Persons who have only a high school diploma will fare worse than their counterparts did in earlier generations – by almost every economic measure (Pew Research Center, 2014). Today, a college education is viewed as the key to sustained economic success (Ma, Pender, & Welch, 2016). The trend towards a higher educated labor force is prompting educators and policy makers to thoughtfully consider all facets of college and career readiness including high school equivalency.

For more than 70 years, the General Education Development assessment (GED), accepted in lieu of a traditional high school diploma at postsecondary institutions in both the United States and Canada has served as a gateway to educational opportunity for nearly 20 million people. Many GED recipients view further education as the key to successful participation and productivity in a complex society. In fact, Brown (2000) reported that the greatest benefit of GED attainment is the potential for continuing

education and training. Therefore, post-secondary educators must be able to support all students – regardless of the path (either by traditional high school diploma or via high school equivalency certification) that led to the student's arrival on their campuses. Further, understanding factors that are associated with academic success should be investigated to ensure complimentary post-secondary supports are made available, which underscores why the present study is important.

Purpose

Recognizing the need to ensure the best possible post-secondary educational outcomes for all students, regardless of high school credential, the present study sought to elucidate cognitive and non-cognitive factors related to academic achievement. The purpose of this study was two-fold. First, the researcher wanted to determine if there were significant differences in the post- secondary academic achievement of students who had obtained a high school equivalency credential – specifically GED recipients – and that of traditional high school graduates. Second, the researcher sought to determine the extent to which locus of control of reinforcement, a personality construct grounded in Julian Rotter's social learning theory – played a role in that academic achievement.

Research Questions

The present study addressed the relation of locus of control and other factors to academic achievement. Specific research questions were:

1. Is there a significant difference in student's academic achievement as it relates to type of high school credential (GED vs. traditional) or locus of control (internal vs. external)?
2. Is there a significant difference in academic achievement between GED recipients and traditional high school graduates as it relates to gender?
3. Is there a significant difference in academic achievement between GED recipients and traditional high school graduates as it relates to race?
4. Is there a significant difference in academic achievement of GED recipients and traditional high school graduates as it relates to age and number of semesters previously attended (time spent in college)?

By partitioning out the effects of mediating variables such as race, age and number of previous semesters enrolled in college, the present study provides perspective with regard to these factors and offers suggestions for practice. What follows is a review of related literature and the theoretical framework for the study.

2 Literature Review

GED – A Measure of High School Equivalency

Countering the negative effects of not completing high school, the General Education Development test (GED) has, for more than 75 years, served as the hallmark of high school equivalency and has provided not only a high school credential for non- high school completers, but has opened the door to postsecondary education, better jobs, and greater earning potential for millions of Americans (American Council on Education [ACE], 2017; GED Testing Service, 2014). First administered in 1942 as an alternative educational path for World War II veterans, the GED measures competencies in math, science, social studies and language arts. To ensure the GED remains relevant and in an effort to better align the test to current educational standards that indicate test takers have the skills necessary to succeed in college and the workforce, the test has undergone five major revisions, the most recent of those in 2014 (Adams, 2014).

Today, thousands of individuals take the GED each year and many do so with the hopes of continuing their education. In 1988, 47.5% of all GED test takers planned to go to college. In 2013, 63.7% of test takers indicated that postsecondary education was the motivating factor for taking the exam (GED Testing Service, 2014). Vastly different from the mostly male, returning servicemen who took the test 70 years ago, today, most GED recipients are older, mostly female and are more likely to attend community colleges or technical schools than non- GED recipients (Prins & Kassab 2015; Zhang, 2010).

GED and high school equivalency in Louisiana. Because the present study took place in Louisiana, it is important to note that while it appears that more U.S. high school students are graduating, Louisiana still has one of the lowest graduation rates in the nation. Though touted as vaulting to an all-time high in 2014-2015, the state still ranks below the national average (Louisiana Department of Education, 2016). Nearly 25 % of adults in Louisiana do not have a high school credential (Hanford, Smith & Stern, 2013). For this reason, the GED has played a significant role for thousands of Louisiana students. Currently, Louisiana uses the High School Equivalency Test (HiSet), which most resembles the 2002 GED test series.

GED as a measure of college readiness. The General Education Development test (GED), once catering mainly to servicemen, is considered an important vehicle for persons desiring to complete the high school credential and pursue postsecondary education (Maralani, 2011). In theory, successful completion of the GED should signify that one has skills and knowledge equivalent to that of a high school graduate, but that theory is often debated. While obtaining the GED credential is considered a milestone of achievement, test takers are often stigmatized as lacking the academic skills necessary to compete with traditional high school graduates. The very fact that a person did not complete a traditional high school program of study, regardless of the reasons for not doing so, is associated with negative long-term outcomes. Consequently, since the first offering of the GED in 1942, researchers, policy makers and practitioners have questioned the efficacy of the GED, studying everything from economic benefits of the credential and comparison of GED recipient and traditional high school graduate postsecondary academic performance to age differences of test takers and individual motivation for taking the exam (Lance, 1998; Locke & Smith, 1999; Tyler, 2003). Questions related to whether the GED serves as a reliable indicator of college readiness have been examined with great vigor – oftentimes yielding conflicting results.

Extant research that focuses on GED recipient postsecondary academic performance is plentiful, though findings from studies have been inconsistent. Kroll's (1993) meta-analysis provides an excellent example of the glaring disparities in antecedent research. Kroll found that some studies suggested that GED recipients achieved a similar (or sometimes, higher) level of academic success as traditional high school graduates. Yet other studies in her meta- analysis indicated that GED recipients were less academically prepared than their traditional high school graduate counterparts. In addition, there were divergent findings related to the notion that the GED is a valid predictor of postsecondary performance (Kroll, 1993). Because of the conflicting results, Kroll recommended that intervening variables, such as gender and motivation be investigated to determine if an interaction existed which could explain discrepancies.

In addition to Kroll, many other researchers obtained results that added to the conundrum regarding to post-secondary academic performance of GED recipients, as well. Turner (1993) found that the GED was not a suitable tool for predicting college performance and should therefore not be used to preclude recipients from the same educational opportunities as traditional high school graduates. Similarly, researchers such as Banner (1989) Baldwin (1995), McElroy (1990) and Rose (1999) found that GED recipients perform as well as or even better than traditional high school

graduates in postsecondary settings. Conversely however, other researchers found that traditional high school graduates performed significantly better (Hamilton, 1998), had lower attrition rates (Ebert, 2002) and took fewer developmental courses (Blue, 2015) than GED recipients. Blue (2015) found that in addition to requiring more remedial coursework, particularly in math, GED recipients earned fewer college credits and were less likely to complete a degree or certificate program when compared to traditional high school graduates. Like Kroll, these researchers suggested that mediating factors, including motivational characteristics which have been significantly related to academic achievement, be investigated in greater depth. With this in mind and guided by research that links personality constructs to academic performance, the present study sought to examine the relationship of locus of control of reinforcement (LOC) and postsecondary academic performance of GED recipients and traditional high school graduates.

Locus of Control and Theoretical Framework

Julian Rotter's social learning theory forms the theoretical basis for the present study. Rotter's theory is composed of four components: (a) behavior potential – BP, (b) expectancy – E, (c) reinforcement value – RV, and (d) psychological situation, which can be combined into a predictive formula for behavior wherein behavior potential (BP) is depicted as a function of expectancy (E) and reinforcement value (RV): BP = f(E& RV). It is important to note that the fourth component, psychological situation, though not a direct component of the behavior prediction formula, is influential in that situations may be interpreted differently depending on the individual and therefore influences expectancy. Social learning theory posits that people learn certain behaviors through observing and imitating the behaviors of others and consequently, receive resulting rewards or punishments (Feist & Feist, 2002). Locus of control of reinforcement, founded in social learning theory "is conceptualized as a type of learned expectancy that reflects the degree to which individuals perceive connections between their behavior and reinforcements they receive" (Kalecstein & Nowicki, 1997, p. 30). In this regard, social learning theory facilitates a clear predictive relationship (due to the influence of psychological situation on expectancy) between locus of control and academic achievement.

Locus of control can be either general or specific and progresses along a continuum of very external to very internal. (Findley & Cooper, 1983, Kalecstein & Nowicki, 1997). The prevailing supposition suggests that individuals classified as internal, believing they control their own destiny, have better outcomes including a propensity towards high academic achievement and greater achievement motivation. (McLeod & Adams, 1980). Further, persons exhibiting an internal orientation are "more perceptive to and ready to learn about their surroundings" (Lefcourt, 1982, p. 80) and are more likely to graduate from college in a more judicious fashion (Hall, Smith & Chia, 2008). The converse is true for persons with an external orientation, however. Externals tend to possess lower behavioral goals, have lower academic achievement than internals and believe that luck, chance or fate are more likely to be the determinants for the outcomes of their behavior (Lefcourt, 1982; McLeod & Adams, 1980).

Locus of Control and Academic Achievement

Rotter's paradigm has influenced a great deal of literature. Researchers have conducted a number of studies wherein a significant relationship between locus of control and academic achievement was found. Gifford, Briceno – Perriott & Mianzo (2006) concluded that locus of control was a predictor of first-year academic success in that college freshmen in their study who were internals demonstrated a statistically significant higher GPA than externals. Rakow and Sterbin (1996) using the full research sample of the 1988 National Educational Longitudinal Study found that study participants with a higher internal locus of control achieved higher scores on standardized tests. In addition, Schonwetter, Menac, Struthers, Hecter and Perry (1993) found that college students exhibiting internality performed better in instructional situations than externals. But, just as with studies of GED recipient performance, there were instances where inconsistent results regarding locus of control and academic achievement have been found. In Aspelmeier, Love, McGill, Eliott, and Pierce's study (2012), internal locus of control though found to be largely associated with better college adjustment was not significantly associated with GPA.

3 Methods

By delving into factors related to post-secondary performance of GED recipients, the present study aimed to add to the existing body of knowledge with respect to the achievement – locus of control relationship. To assess the relationship of locus of control to GED recipient and traditional high school graduate (THSG) post-secondary academic performance (as measured by semester GPA), this study employed an ex post facto (after the fact) – factorial model research design. This design was most appropriate in that the independent variables (high school credential, gender and LOC) could not be manipulated and were already present prior to participant selection. The factorial model allowed for the determination of how independent variables (LOC, high school credential, gender) interacted in their effects on the dependent variable ([GPA], Pedhazur & Schmelkin, 1991). Moreover, group comparisons (GED recipients versus THSG) and an estimation of the magnitude of relationships could be determined with this method. To ensure internal validity, the following additional variables (covariates) were included: race, age, and time the subjects spent in college prior to participating in the study.

Sample

The present study was conducted at three, 2-year post – secondary institutions in Northern Louisiana. The study employed a purposive sampling technique – intensity sampling – because the sample size was largely dependent on what could be done within the existing constraints of the selected postsecondary institutions. The GED population at the selected institutions represented a small proportion of the total enrollment and it was anticipated that the GED cohort of participants would be relatively small in comparison. Therefore to obtain desired participants, GED recipients were purposefully sought after. In addition, an important criterion for participation in the study was that all participants must have been enrolled in one of the institutions during the previous semester. This was important because previous semester GPA was used as the measure for the dependent variable – academic achievement.

To ensure that optimum participation was achieved, administrators at each location provided liberal assistance. At two of the institutions, college administrators assisted with the identification of potential participants. At the third institution, no assistance was provided and the researcher had to rely on individual instructors at the institution to administer data collection instruments during their classes with the hopes that GED recipients would participate. For comparison purposes, a random sample of the total enrolled population of traditional high school graduates (THSGs) was selected. The purposive sampling technique employed, resulted in 90 GED recipients. From the total group of THSGs that partici-

pated, a random sample of 90 traditional high school graduates was selected. Each participant was provided with a data collection packet that included a letter of informed consent, a researcher made Demographic and High School Credential Survey, and the Adult Nowicki-Strickland Internal – External Control Scale (ANS-IE) developed by Stephen Nowicki and Marshall P. Duke (found here).

Instruments

The ANS-IE, used to assess locus of control, was adapted from the original locus of control scale developed by Julian Rotter. It is important to note that the locus of control – academic relationship is more consistent with social learning theory when measured by the ANS-IE (Duke & Nowicki, 1974; Johnston, 1999). In addition, the ANS-IE is suitable for use with persons who have as little as a 5th grade reading ability. The ANS-IE is composed of 40 items that require a yes or no response and is scored in the external direction such that the score received represents the degree of externality (i.e., a higher score indicates higher externality [Nowicki, 2015]). The instrument is psychometrically sound and reliable and construct validity has been established via significant positive correlation between the Norwicki – Strickland and the Rotter I/E Locus of Control Scale (Duke & Nowicki, 1974 [r = .68, df = 47, p < .01; r=.48, df = 37, p < .01; r = .44, df = 33, p < .05]; Hoover, 2000; Lefcourt, 1982). To obtain study participants' demographics (age, race, gender), time spent in college and information about the type of high school credential earned, a researcher made Demographic and High School Credential Survey was used.

Data Analysis

To summarize data, descriptive statistics were obtained using the Statistical Package for the Social Sciences (SPSS). To assess the effects of the three independent variables (LOC, gender, and High School Credential) and the effects of the interaction (Cronk, 2002), a 2 x 2 x 2 factorial Analysis of Covariance (ANCOVA) was conducted as well (see figure 1). ANCOVA is used as a procedure for the statistical control of

Fig 1. 2x2x2 Factorial ANCOVA Design Model depicting academic achievement as a function of multiple measures (Locus of control [LOC], Type of diploma and gender). * - Indicates that covariates have been partitioned out of academic achievement.

		Locus of Control	
Diploma Type	**Gender**	**Internal**	**External**
GED	MALE	*Academic Achievement	*Academic Achievement
	FEMALE	*Academic Achievement	*Academic Achievement
TRADITIONAL	MALE	*Academic Achievement	*Academic Achievement
	FEMALE	*Academic Achievement	*Academic Achievement

extraneous variables – covariates (Hinkle, Jurs, & Wiersma, 2003). ANCOVA combines regression analysis and ANOVA to control for the effects of a covariate by partitioning out the variation attributed to this variable, thus allowing an increase in the precision of the research by reducing the error variance (Cronk, 2002). Further, the factorial model depicts the two levels of each of the three independent variables – hence the 2 x 2 x 2 designation.

4 Results

Descriptive Statistics

Results of analyses revealed that both groups, GED recipients and THSGs, were comprised of mostly female participants (72% and 57%, respectively). In addition, the majority of participants in the sample were Caucasian (66%). Further with respect to age, the sample could be categorized as non-traditional (*m*=28.36). Specifically, the GED cohort was significantly older than the THSG cohort. GED recipients had an average age of approximately 31 years old compared to 23 years old for THSG. Both GED recipients and THSG spent approximately 3 semesters in college prior to data collection for this study.

Table 1. Distribution of Cohorts by Gender, Race and Credential Type

		Sample	GED	THSG
Gender				
	Male	64	25	39
	Female	116	65	51
	Total	180	90	90
Race				
	Caucasian	118	62	56
	African American	56	24	32
	Other	6	4	4
	Total	180	90	90

GED: General Education Development (Equivalency Certificate) Recipient
THSG: Traditional High School Graduate

With regard to LOC, on average, the sample had a relatively low score (*m* = 10.81). This score is indicative of an internal orientation and falls within the range of mean scores for other college students (*m* = 9.06) and community subjects (*m* = 10.96). African Americans in the sample exhibited a slightly more external orientation than did Caucasians. Sub – group means indicated that males in the THSG cohort tended towards greater externality (*m* = 11.18, SD = 4.64) than females in the THSG cohort (*m* = 10.69, SD = 4.73). Further, female GED recipients were slightly less external (m = 10.68) than male THSG (m = 10.72).

Table 2. Summary of Sample Means by Diploma Type, Gender and Race for Age, Semesters in College and Locus of Control

		Age	Semesters	Locus of Control
Diploma				
	GED	31.31	3.62	10.71
	Traditional	25.40	3.33	10.91
Gender				
	Male	26.88	3.14	10.98
	Female	29.17	3.67	10.70
Race				
	Caucasian	27.71	3.37	10.98
	African American	29.36	3.64	11.23
	Other	31.67	4.00	11.17
Total		28.36	3.48	10.81
	SD	9.60	2.46	4.24

N=180

Table 3. Comparison of Subgroup Means

Diploma Type	Gender	Locus of Control	SD
GED			
	Male	10.68	3.40

	Female	19.72	3.93
	Total	10.71	3.77
THSG			
	Male	11.18	4.64
	Female	10.69	4.73
	Total	10.89	4.67
Total Sample			
	Male	10.98	4.18
	Female	10.71	4.28
	Total	10.81	4.23

N=180

With regard to GPA, the sample mean was above average. Females in the sample had an average GPA of 3.12 and males in the sample had an average GPA of 2.87; Caucasians had a higher GPA (3.14) than African Americans; GED recipients had an average GPA of 3.09 and THSG had a mean GPA of 2.97.

Table 4. Mean GPA for Sample by Diploma Type, Gender and Race

		GPA	SD
Diploma			
	GED	3.09	.735
	THSG	2.97	.787
Gender			
	Male	2.87	.823
	Female	3.12	.715
Race			
	Caucasian	3.14	.733
	African American	2.79	.718
	Other	2.98	.463
Total		3.03	.762

N = 180

Inferential Statistics

Before the factorial ANCOVA was conducted, data were screened to ensure fulfillment of the assumptions of factorial ANOVA. Outliers were identified and GED holders with a GPA of less than or equal to 1.4 were recoded and THSG with a GPA less than or equal to 1.0 were recoded also. The preliminary ANCOVA, which included Levene's test to assess the homogeneity of variance, indicated no significant factor interaction, $F(62.117) = 1.130$, $p = .283$, $\eta^2 = .375$ and because $p > 0.05$, equal variances could be assumed. Therefore, main effects for each factor and covariate were more accurately interpreted.

Table 5. Test of Assumption of Homogeneity of Variance

Source	SS	*df*	MS	F	P	η^2
Diploma x Gender x LOC x Race x Age X Semesters	38.92	62	.628	1.13	.283	.375
Error	64.98	117	.555			
Total	1755.43	180				

N = 180

After partitioning out the effects of race, age and time in college, F ratios and p values indicated that there was no significant difference in students' academic achievement with respect to type of high school credential they had received, $F(1,115) = 2.178$, $p > .05$. The GPA for the GED cohort was not significantly different from the GPA of the THSG cohort. In addition, just as the main effect for type of diploma was not significant, the main effect for locus of control was not significant, $F(21, 115) = 1.12$, $p > .05$. Both GED recipients and THSG exhibited an internal locus of control, which coincidently, was not a significant factor in the academic achievement of either group.

Results of analyses did however, indicate a significant main effect for gender, $F(1,115) = 3.981$, $p < .05$. Females in the sample had a significantly higher GPA than males though the effect size for gender ($\eta^2 = .033$), was relatively small. The interaction of high school credential and gender was also significant, $F(1,115) = 5.02$, $p > .05$). This interaction was present for males and females in the THSG group only. The GPAs of males and females in the GED group were not significantly different but it is important to note that male GED recipients (m=3.16) had significantly higher GPAs than male THSGs ($m = 2.66$).

The covariate of race was significantly related to academic achievement in that the mean GPA for Caucasians (3.14) was significantly different from that of African Americans (m=2.79, SD = .718). The effect size for race was large ($\eta^2 = .082$) indicating that about 8% of the variance in GPA was attributed to this variable. The covariates of age ($m = 28.34$, SD = 9.58) and time in college prior to participation in the study ($m = 3.47$, SD = 2.46) did not significantly affect GPA for either group.

Table 6. Summary Table for Factorial ANCOVA/Tests of Between Subject Effects

Source	SS	*df*	MS	F	P	η^2
Race	5.28	1	5.28	9.77	.002**	.078
Age	1.91	1	1.91	3.53	.063	.030
Semesters	.53	1	.53	.98	.324	.007
Diploma	1.50	1	1.50	2.78	.098	.024
Gender	2.15	1	2.15	3.98	.048*	.033
LOC	12.65	21	.60	1.12	.342	.169
Diploma x Gender	2.71	1	2.71	5.02	.027	.042
Diploma x LOC	7.61	13	.59	1.09	.379	.109
Gender x LOC	12.22	13	.94	1.74	.061	.164
Diploma x Gender x LOC	3.42	10	.34	.63	.782	.052
Total	1755.43	180				

Note. * = $p < .05$. ** = $p < .01$

5 Discussion, Implications and Conclusion

This study sought to determine if there were significant differences in the academic performance of GED recipients and THSGs and the role if any, that locus of control played. With regard to academic performance, there was no significant difference in the academic achievement or locus of control for the two groups of students. The present study's findings were consistent with those of researchers such as Baldwin (1995), Rose (1999) and Akins (2009), in that GPA was not a function of the type of diploma the study participants possessed. Though, the findings were contrary to results by previous researchers such as Ebert (2002) and Blue (2015). In those studies, traditional high school graduates had significantly higher GPAs than GED recipients.

With regard to locus of control, Kalecstein and Nowicki (1997) and Linder and Janus (1997), found that students who had higher internality also had higher academic achievement. In the present study, although locus of control did not contribute significantly to academic achievement of either group, the trend that higher internality is associated with higher academic achievement was supported. It is important to note that despite the fact that locus of control was not shown to have an independent effect, the Pearson Product – Moment coefficient (r =.-118) indicated a weak, negative relationship with GPA which means that as the value of locus of control increased (more external), the GPA would decrease and vice versa. In the present study, both groups of students had an above average GPA and both groups displayed an internal locus of control orientation.

Gender was also shown to have a significant effect on achievement in that females in the sample had a higher average GPA than males. Interestingly, with respect to locus of control, males had the highest (most external) scores and male THSG had a GPA that was significantly lower than female THSG and significantly lower than both male and female GED recipients. This adds further credence to the supposition that academic achievement can be related (although weakly) to one's locus of control.

Further, results revealed that when treated as a mediating variable, race significantly impacted the GPA of the participants such that Caucasians had a higher average GPA than both African Americans and those who identified as – other. When comparing participants' locus of control on the basis of race, it was found that both African Americans and others exhibited greater externality than did Caucasians in the sample. Interestingly, Duke and Nowicki (1974) posited that "years of living under conditions where reinforcements were in the hands of powerful others would lead blacks to respond in more external manner than whites" (p. 6). If the locus of control – academic relationship were to be acknowledged, the findings of the present study would be consistent with theoretical assumption that higher academic achievement is related to higher internality. No significant difference existed as it relates to age or semesters spent in college prior to beginning the study and neither factor influenced GPA across sub-groups. With respect to age however, the GED cohort was somewhat older though, this did not appear to affect the group's performance.

Implications for Practice

Historically, there has been a negative stigma attached to the concept of GED recipients going on to college (Gewertz, 2010)– despite data that indicates a majority of GED takers do so with the intention of furthering their education (GED Testing Service, 2014). Based on the findings of the present study, it can be concluded that the type of high school credential is less of a predictor of academic performance than other factors such as race and gender. In addition, the aforementioned results also support the prevailing supposition that higher internality is associated with higher academic achievement and therefore provide important implications for adult basic education programs and professionals in higher education.

First, in that locus of control has been associated with achievement, it would be beneficial to include an assessment of this personality construct with new student orientation or freshman success courses at postsecondary institutions. Doing so would provide useful information to guide the placement of these students and the development and implementation of programs and services to assist them (Jackson, 2004). Further because locus of control is an attribute that is changeable (McKay, B. & McKay, K., 2010), reattribution interventions that attempt to change students' explanations about the dysfunctional behavior (i.e. encouraging freshmen students to attribute any academic problems to temporary factors) may improve academic achievement (Wilson, Damiani & Shelton, 2002). Research, guided by Wiener's Attribution Theory of Achievement Motivation, has determined that individualized attributional retraining techniques are effective for students and can lead to substantial improvements in academic performance (Hall, Hladkyj, Perry & Ruthig, 2004). In addition, research has suggested that courses stressing study and adjustment skills can raise grade point averages and influence locus of control toward greater internality (Feldman & Poirier, 2013).

Second, according to the College Success Factors Index, responsibility and control are two of 10 factors that are considered essential to academic performance and retention. A process requiring a gradual increase in student responsibility and an acceptance by the student that he or she has increasing control over academic success can influence academic achievement. As such, post-secondary educators should assign activities that offer an opportunity for students to take responsibility. Taking responsibility is integral to taking control. It is posited that when students take responsibility and this process is intrinsic, scholastic aptitude increases (Hallberg, E., & Hallberg, K., n.d.). Further, Lefcourt (1982) explained that "without an expectation of internal control and without persistence despite imminent failure", an individual might not take the steps necessary to ensure success (p.81).

Conclusion

Despite scrutiny about its efficacy, the General Education Development Test (GED) continues to be an viable albeit non-traditional path for adults to earn a high school credential, enter post-secondary institutions and, with complimentary and targeted support services, obtain a college degree and ultimately, a successful, financially stable future. Results of the present study indicated that there was no significant difference in academic achievement of GED recipients and THSG in that both groups of students have above average GPAs. Therefore, it can be concluded that for these students, possession of the GED credential did not predict performance and it can be posited that merely having a GED did not indicate that the individuals were less prepared for postsecondary work than their THSG counterparts. Further, results revealed that within this sample, gender could be a more accurate predictor of academic achievement than type of diploma.

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