Research

Engagement, Academic Achievement, and Grit as Components of College Freshman Success

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Introduction/ Need for Research

As enrollment in higher education institutions increases at a rapid rate, graduation rates are not increasing at that same rate; at West Texas A&M University (WTAMU) the 2017/2018 retention data was reported to be 65%, while the national average was 71% (National Center for Education Statistics, 2018). With admissions standards based solely upon academics/intelligence (i.e. ACT/SAT scores, class rank, high school GPA), the need for another means of determining student success (attrition, retention and graduation rates) has become all the more prevalent. Thus, bringing to surface the importance of strong non-cognitive skills (social skills, determination, perseverance, etc.).

Grit encompasses determination and perseverance of character in the face of hardships. According to Duckworth (2007 & 2011), grittiness – as determined by the Grit Scale – is the most accurate way to predict a person's long-term success (academic or otherwise). If grit scores, collected from a student's completion of a grit test, can identify students who will be successful and students who will struggle in college, then such scores can alert faculty and staff to students who may require extra assistance to succeed. The implication that grit scores could be a more distinct indicator of successful performance among students than general admissions standards/intelligence, can create a positive effect upon student attritions rates, which ultimately effect retention and graduation rates at WTAMU Department of Agriculture.

Conceptual Framework

Grit, as used in this study, is defined as "firmness of mind and spirit; unyielding courage in face of danger or hardship" (Grit, n.d.). Duckworths (2007) research suggests that grit is the determining factor, and common denominator, of successful individuals. Through a series of surveys, Duckworth (2007) identified grit (or a synonym for grit) as a common factor among successful people in various fields; in such surveys grit, or a synonym, was used more than talent. Grit is measured on a 12-question Likert *Grit Scale*, which Duckworth (2007) validated in 6 studies. The instrument used to complete and fulfill grit scores fulfills 4 criteria:

1. Evidence of psychometric soundness,
2. Face validity for adolescents and adults pursuing goals in a variety of domains,
3. Low likelihood of ceiling effects in high achieving populations,
4. A precise fit with the construct of grit.

This study pays special interest to study three of Duckworths 2007 research which focused on academic performance. Duckworth's experiment proved that gritty students outperformed less gritty students by receiving higher GPA's; the experiment also showed that gritty students might be less intelligent (as relating to academic standards) as higher grit scores were associated with lower SAT scores.

Methodology

This study gathered information from students within the 2018/2019 freshman cohort at WTAMU, with specific focus placed upon the Department of Agriculture, to measure cognitive and non-cognitive factors that might influence attrition. The research design included three

overarching independent variables: grit, involvement, and intelligence. Duckworth's (2007) Grit Scale was used to determine a numerical grit score. Involvement was determined through a 10-question survey. Intelligence was tested based upon ACT/SAT scores.

The survey was created and sent to the entire population of the 2018/2019 freshman class, after tabulating completed surveys, a sample size of (n=342) resulted. The survey determined both a grit score, as well as an involvement score. To ensure validity and reliability, a panel at WTAMU Department of Agriculture along with the Institutional Review Board (IRB) reviewed the survey. Duckworth's (2007) research ensured reliability of the grit scale.

Results

Grit scores, ranked on a 1-5 scale (1 = not gritty, 5 = very gritty), ranked relatively high (M = 3.61, SD = 0.49). Campus involvement averaged moderately (M = 3.09, SD = 1.12), on a 1.00 (not involved at all) to 5.00 (heavily involved in several activities across campus) scale. 62.3% of respondents indicated employment, with 34.1% indicating they worked more than 20 hours per week. The average ACT score, of the 2018/2019 freshman cohort, was 21.61, and the average GPA was 3.63. The average GPA, after the first semester of college courses, was 3.07. Between the student's freshman and sophomore years, 25 (of the 342 survey participants) departed from [university]; this brought the first semester retention rate to 92.7%. The average high school GPA was 3.49, while the grit score was a 3.507; however, the first semester GPA was a 1.97.

When determining the relationship between retention, grit, intelligence and involvement, Pearson's correlation showed low and negligible results. Grit and hours of involvement (r = .060 and r = .084) were positively but negligibly correlated. A significant correlation appeared between retention and ACT scores (r = .178, p < .01) and a moderate correlation between GPA and retention (r = .329, p < .01). ACT (r = .340, p < .01) and grit scores (r = .217, p < .01) showed significant relation to first semester GPA. Grit had a positive and significant relationship with hours of involvement (r = .219, p < .0). High school GPA had a significant but low relation to retention (r = .113, p < .05), a moderate substantial relationship with first semester GPA (r = .489, p < .01) and a moderate relationship with ACT scores (r = .311, p < .01).

Conclusions/Implications/Recommendations

Utilizing the Pearson's correlation, 29 relationships were identified, 8 of which were statistically significant at the .01 level (p < .01) and 3 that were significant at the .05 level (p < .05). The results of this study conclude that high school GPA is not a strong indicator of retention, though it did have a significant correlation (r = .113, p < .05). Although, ACT scores had a strong correlation to retention. Though a strong relation between grit and retention was anticipated, it proved to be negligible and non-significant r = .06, p = .27). Duckworth (2007) asserted grit can be further grow and developed; since the participants were analyzed during their first year at college, there is reason to believe that grittiness can grow, and prove to have a stronger relationship with retention and attrition. Strikingly, grit showed strong correlation to hours involved and first semester GPA; first semester GPA showed strong association with ACT scores. To better understand grittiness, and how it plays a role in academic success, the researcher recommends exploring students between their first and second years of college and adding grit curriculum to freshman courses.

References

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