Grit on Campus: How Goal Setting and Mindfulness Influence Grit in College Students

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Author Note

The study described in this report was not conducted and the data for this report was fabricated. Some details in the discussion may also have been fabricated.

Abstract

Individuals who have set attainable and specific goals used to measure their performance and progress have been shown to perform better than those who did not set any goals at all. Promoting the practice of the growth mindset may strengthen grit because it can bolster perseverance towards goals. This study aimed to discover methods to train grit in young adults and to explore whether grit can be improved through goal setting and mindfulness, regardless of athletic standing. Participants were 60 athlete and 60 non athlete college students who were randomly assigned to a manipulated or controlled condition. Grit training was administered via phone application to the manipulated conditions. Grit training was positively associated with higher grit scores among athletes and non-athletes. Grit training had the greatest effect on non-athletes. Consistent goal setting and mindfulness improved grit in young adults in both sports and non-sports-oriented environments.

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Grit

Grit is a passion for and perseverance towards long term goals (Duckworth 2016). Gritty individuals are dedicated to goals while simultaneously having direction towards those goals. Grit is compared to achievement in that both are driven by motivation and goals, but grit is a long-term endeavor while achievement is short term and intense (Duckworth et al., 2007). Gritty individuals are said to push through boredom, failure, and challenges (Duckworth 2016). A high level of grit is an adequate predictor of academic success (Duckworth et al., 2007). Additional research shows an existing relationship between subjective well-being and grit, where overall grit had the strongest relationship with subjective-well-being, and grit and perseverance were also strongly correlated (Hou et al., 2021).

The proposed neurological process behind Grit is executive functioning which involves decision-making and inhibition mechanisms. These mechanisms primarily deal with behavioral organization, planning, goal-oriented behavior, effort and performance towards a goal, and deliberate behavior (Jurado & Rosselli 2007; Barkley 2005).

Goal setting

As executive functioning plays a significant role in Grit, it has been proposed that goal setting is a proponent in the enhancement of Grit (Hwang & Nam 2021). Individuals who have set attainable and specific goals used to measure their performance and progress have been shown to perform better than those who did not set any goals at all. A moderating factor in this relationship is commitment, or perseverance, towards the goal (Blanchard 2018).

Grit Education

Current Grit Education curriculum consists of teaching Grit as a general character-building virtue in children (Hwang & Nam 2021). The Grit Enhancement Program aims to increase self-control, promote a growth mindset and resilience, and teach specific learning strategies concerning grit (Shechtman et al., 2013). Further research on Grit Promotion has found success in teaching students about brain plasticity, effort and its importance in achievement, reflection on failures, and goal-setting practices (Alan, Boneva, & Ertac, 2019).

Growth Mindset and Mindfulness

Empirical research identifies the growth mindset as an additional factor which is crucial to the enhancement of Grit (Hwang & Nam 2021). Dealing with failure and adversity with the belief that abilities are malleable and can be improved through effort leads to more success (Dweck 2006). Promoting the practice of the growth mindset may strengthen grit because it can bolster perseverance towards goals. Mindfulness, which focuses on acknowledging feelings and thoughts, has been shown to be related to success in athletes (Jekauc et al., 2017).

Grit in Athletes

Athletes and non-athletes have undergone previous research regarding levels of grit. Thomsen and Oleson (2014) compared elite athletes to non-athletes and found that the athletes had the highest levels of grit. Grit has also been studied as a predictor of athletic performance, finding that in athletes, mental toughness is related to grit (Joseph 2009).

Current Study

The existing research focuses on measuring grit as it exists in the individual. This study aimed to discover methods to train grit in young adults and to explore whether grit can be

improved through goal setting and mindfulness, regardless of athletic standing. The training provided in this study focused on habitual goal setting and promotion of the growth mindset and mindfulness This study analyzed the relationship of grit training in college students, both athletes and non-athletes, and their ability to reflect on failures and overcome challenges while working towards goals. We hypothesized that individuals who were trained in consistent and habitual goal setting and mindfulness would see an overall improvement in grit.

Method

Sample

The study consisted of 120 male and female college students, aged 18-21, currently enrolled in Montana State University. Recruitment methods included mass student emails, recommendations from professors and coaches, and flyers around campus. The participants were recruited from various sports teams which included basketball, tennis, skiing, volleyball, track, and football. Non-athlete students were recruited from lower division courses of varying subjects.

Design

The participants were then divided into four groups. Two of the groups were comprised of 30 student-athletes each. The second two groups were characterized by 30 non-athlete students of various majors. One of the athlete groups and one of the non-athlete groups was in the manipulated condition, AM (athlete manipulated), and NAM (non-athlete manipulated). For the controlled condition, there was an athlete group, AC (athlete controlled), and a non-athlete group, NAC (non-athlete controlled).

All participants were administered a 12-item grit scale which measures perseverance and consistency (Duckworth et. al 2007). In this study, the Grit Training was administered remotely through a custom app.

Following the self-report questionnaire, the participants in the manipulated groups were each given a login for the app. The app notified participants each morning to login. Upon login, there was a template in which participants were instructed to enter five long term goals. There was also a section where participants were asked to write down three short-term goals daily and three challenges they wanted to face that day. The app also notified participants at the end of the day. At this time, there was a section designated for participants to write down their thoughts and feelings as a form of self-reflection. In this section, they were instructed to describe how well they thought they did that day on working towards their goals, and how they experienced failure. This section's purpose was to promote the growth mindset and to practice mindfulness. The app tracked if participants entered their responses each day and at the correct times. The AC and NAC participants were not given a login for the app.

After 60 days, both groups were instructed to return to the lab to complete the grit scale for a second time. All participants were debriefed and rewarded monetary compensation of $200 each. Any participant who did not consistently and correctly use the app was removed from the data set.

Results

A two-way ANOVA was performed to analyze the effects of Athletic Standing and Training Condition on Grit. All effects were statistically significant at the .001 level. There was a statistically significant interaction between the effects of Athletic Standing and Training

Condition, $F(1, 116) = 96.269$, $p < .001$. The ANOVA identified a main effect of Athletic Standing on a change in Grit, $F(1, 116) = 88.002$, $p < .001$. There was also a main effect of Athletic Standing on Training Condition, $F(1, 116) = 93.784$, $p < .001$. The effect of grit training on grit was greater for non-athletes than for athletes.

Descriptive statistics are presented in Table 1. A 2 (training condition) by 2 (athletic standing) ANOVA analyzed the change in grit scores following training. The non-athlete manipulated group saw a noticeable change in grit ($M = .913$, $SD = .419$). The athlete manipulated group also saw an increase in grit, ($M = .139$, $SD = .143$).

Discussion

Grit training was positively associated with higher grit scores among athletes and non-athletes, providing that the 60 days of grit training increased levels of grit regardless of athletic standing. Moreover, non-athletes had lower average grit scores before and after grit training took place than did the athletes, which supports the theory that athletes tend to be higher in grit than non-athletes (Thomsen & Olesen 2020). Athletes had the highest grit scores compared to non-athletes, regardless of whether they were trained in grit. The controlled groups exhibited lower levels of grit as compared to the trained groups, and they did not improve in grit over the course of the 60-day study. Though grit improved with grit training in both manipulated groups, the grit training had the greatest effect on non-athletes, as the group saw a notable improvement in overall grit.

Grit training, which consisted of habitual goal setting and mindfulness practice, positively affected levels of grit among college athletes and non-athletes. These results indicate

that consistent goal setting and mindfulness improved grit in young adults in both sports and non-sports-oriented environments.

The sample of athlete participants included a variety of sports. While this variability allowed for generalizability of the results, there could also be sports-specific differences regarding grit for which we were not able to account. Different sports provide athletes with different opportunities which may alter their individual goals and those goals may impact grit differently. An athlete's own level of expertise in their sport may also influence their level of grit and their knowledge of goal setting.

For future research, there should be inquiries into specific sports and the effect of grit training between different sports. Continued application of goal setting as a daily habit and mindfulness practice as it pertains to all activities, not just athletics, is important to this field of study. Goal setting is a key in finding success and seeing progress towards long-term goal achievement. This area of study is important to non-athlete individuals in obtaining athlete-levels of grit, which could be beneficial in helping them achieve successes and overcome adversity in life.

References

Blanchard, V. (2018). Doctoral Program Completion: Grit, Goal-Setting, Social Support. ProQuest. https://doi:10829014

Caldwell, K., Harrison, M., Adams, M., Quin., R. H., Greeson, J. (2010). Developing Mindfulness in College Students Through Movement-Based Courses: Effects on Self-Regulatory Self-Efficacy, Mood, Stress, and Sleep Quality. *Journal of American College Health. https://*doi.org/10.1080/07448480903540481

Chih-Han, W., Jui-Ti Nien, Chi-Yen, L., Yu-Hsiang Nien, Kuan, G., Tsung-Yi, W., Yu-Kai, C. (2021). Relationship Between Mindfulness, Psychological Skills, and Mental Toughness in College Athletes. *International Journal of Environmental Research and Public Health. h*ttps://doi.org/10.3390/ijerph18136802

Duckworth, A., Matthews, M.D., Peterson, C., Kelly, D. (2007). Grit: Perseverance and Passion for Long-Term Goals. *Journal of Personality and Social Psychology. https://* doi:10.1037/0022-3514.92.6.1087.

Dweck C. S. (2006). *Mindset: The New Psychology of Success. https://*doi: 10.1007/978-3-030-57389-8_5

Hou X-L., Becker N., Hu T-Q., Koch M., Xi J-Z., Mõttus R. (2021). Do Grittier People Have Greater Subjective Well-Being? A Meta-Analysis. *Personality and Social Psychology Bulletin*. https://doi:10.1177/01461672211053453

Hwang, M., & Nam, J.K. (2021). Enhancing Grit: Possibility and Intervention Strategies. Multidisciplinary Perspectives on Grit. https://doi:10.1007/978-3-030-57389-8_5

Jekauc, D., Kittler, C., Schlagheck, M. 2017. Effectiveness of a Mindfulness-Based Intervention for Athletes. *Department for Sport and Exercise Psychology, Humboldt University of Berlin. https://*doi:10.4236/psych.2017.81001

Joseph, A. I. (2009). The role of grit in predicting performance in collegiate athletes. *Dissertation Abstracts International: Section B: The Sciences and Engineering, 70(11-B), 7255.*

Jurado MB, Rosselli M. (2007). The elusive nature of executive functions: a review of our current understanding. *National Library of Medicine. https://*doi:10.1007/ s11065-007-9040-z

Lunenburg, F.C. (2011) Goal Setting Theory of Motivation. *International Journal of Management Business, and Administration.* Volume 15, Number 1.

Olesen, M. H., & Thomsen D.K. 2020. Elite athletes are higher on grit but lower on conscientiousness than a comparison sample of non-athletes. *Scandinavian Journal of Sport and Exercise Psychology.* https://doi:10.7146/sjsep.v2i0.115111.

Shechtman, N., DeBarger, A. H., Dornsife, C., Rosier, S., & Yarnall, L. (2013). Promoting grit, tenacity, and perseverance: Critical factors for success in the 21st century.

Sule, A., Boneva, T., Ertac, S. (2016). Ever Failed, Try Again, Succeed Better: Results from a Randomized Educational Intervention on Grit. *Quarterly Journal of Economics. https://* doi:10.1093/qje/qjz006.

Appendix A

Table 1

Grit Training Descriptive Statistics

Training Group	Athletic Standing	Before	After	Change
Manipulated	Athlete	4.55 (.211)	4.48 (.234)	.139(.143)
Manipulated	Non-Athlete	3.38 (.512)	4.09 (.320)	.914 (.419)
Control	Non-Athlete	3.15(.495)	2.71 (.438)	0.008 (.030)
Control	Athlete	4.45 (.250	4.28 (.282)	.004(.004)

Appendix B

Figure 1

Change in Grit Scores