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Staying the Course: Grit, Academic Success, and Non-Traditional Doctoral Student

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Staying the Course:
Grit, Academic Success, and Non-Traditional Doctoral Students

Dr. Ted Cross
Program Chair, Dissertation Research
Grand Canyon University
Introduction

- Story 1- Templeton, Seligman, UPenn
- Story 2- GCU CDS
- Frame work- what makes some non-traditional doctoral students more successful in their programs of study than others?
  - Through the lens of personality, persistence, and academic success
  - Grit- character level trait; persistence and passion for long-term goals (Duckworth, et al., 2009)
- Context- Growth of Higher Ed, Online Ed, & Non-Traditional Doctoral Programs
  - Higher education at the undergraduate and graduate levels continues to grow (CGS, 2008; Walton, 2011)
  - To reach new students more and more institutions are utilizing online education (Allen & Seaman, 2011).
  - At the doctoral level new online programs that serve non-traditional students are growing (Pappas & Jerman, 2011)
Statement of the Purpose

- Purpose
  - The purpose of this study was to understand (a) the differences between mean grit scores of first, second, and third year doctoral students; (b) if there is a relationship between student grit scores and current programmatic GPA; and (c) to examine any differences, if at all, between mean third year student grit scores of those who have or have not successfully defended their dissertation proposal.
Variables

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Controlling Variables</th>
<th>Dependent Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean student grit scores (1\textsuperscript{st}, 2\textsuperscript{nd}, 3\textsuperscript{rd} Year Student Groups)</td>
<td>Student Characteristics (Demographics)</td>
<td>Number of Courses Successfully Completed (1\textsuperscript{st}, 2\textsuperscript{nd}, 3\textsuperscript{rd} Year Student Group)</td>
</tr>
<tr>
<td>Student grit scores</td>
<td>Student Characteristics (Demographics)</td>
<td>Current GPA</td>
</tr>
<tr>
<td>Mean student grit scores (3\textsuperscript{rd} Year Student Group Only)</td>
<td>Student Characteristics (Demographics)</td>
<td>Successful Completion or Non-completion of Proposal Defense</td>
</tr>
</tbody>
</table>
Grit

Common traits of 300 geniuses

- Tendency for to abandon tasks from mere changeability. Not seeking something fresh because of novelty. Not “looking for a change.”
- Tendency not to abandon tasks in the face of obstacles. Perseverance, tenacity, stubbornness.
Grit

• Grit (Persistence and Passion for long-term goals) “Predictive”
  • Not IQ; Terman et al. (1947) suggested, that non-cognitive or particular personality traits may be more important than IQ (Tough, 2012)
  • “The gritty individual approaches achievement as a marathon; his or her advantage is stamina” (Duckworth et al., 2007, p. 1088). Thus, grit is a non-cognitive measure of one’s ability to persevere in pursuit of a long-term goal without desisting or changing interests along the way.
  • “grit entails the capacity to sustain both effort and interest in projects that take months or even longer to complete” (Duckworth & Quinn, 2009, p. 166).
  • Story 3- The Friend We all Have....
Methodology

• Design
  – Quantitative (Creswell, 2009; Devlin, 2006).
    • Between groups design & correlation (Bechhofer & Paterson, 2000; Cone & Foster, 1993; Denscombe, 2009; Devlin, 2006).
Between Groups Design

Between Groups

\[
\text{Mean Grit}, \text{ Mean Grit}, \text{ Mean Grit}
\]

1st Yr. \rightarrow 2nd Yr. \rightarrow 3rd Yr.

1 \rightarrow 2 \rightarrow 3

\text{ANOVA, ANCOVA, 3 Tukey}
Correlational Aspect

Correlational

Grit Score → GPA

Pearson & Multiple Reg.
Between Groups

3rd yr.
- Anova
- Ancova

Mean Grit
- Defended
- Ø Defended

D  Q
Sample & Data Collection

• Population was 3,200 non-traditional doctoral students (online with limited residency) at private university in Southwest
• Online survey sent to email and posted on intranet site
• 730 students completed the survey (only analyzed completed surveys)
• After cleaning, 669 completed responses were analyzed
Results & Analysis

Results of ANOVA of 1st, 2nd, and 3rd Year Student Groups

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>Df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>.325</td>
<td>2</td>
<td>.163</td>
<td>.708</td>
<td>.493</td>
</tr>
<tr>
<td>Within Groups</td>
<td>152.820</td>
<td>666</td>
<td>.229</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>153.145</td>
<td>668</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Results & Analysis

Results of ANCOVA of 1st, 2nd, and 3rd Year Student Groups with Covariates Age and Sex

<table>
<thead>
<tr>
<th>Source</th>
<th>Type III Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>2.237</td>
<td>1</td>
<td>2.274</td>
<td>10.083</td>
<td>.002*</td>
</tr>
<tr>
<td>Sex</td>
<td>.922</td>
<td>1</td>
<td>1.423</td>
<td>5.697</td>
<td>.107</td>
</tr>
<tr>
<td>1st, 2nd, 3rd Year</td>
<td>.545</td>
<td>2</td>
<td>.273</td>
<td>1.074</td>
<td>.481</td>
</tr>
</tbody>
</table>

*Note. * = differences were significant at the p < .05 level.*
**Pearson Correlation of Grit and GPA**

<table>
<thead>
<tr>
<th></th>
<th>Grit Score</th>
<th>GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grit Score</td>
<td>1</td>
<td>.093</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>.016*</td>
</tr>
<tr>
<td>N</td>
<td>669</td>
<td>669</td>
</tr>
</tbody>
</table>

*Note. * = correlation is significant at the $p < .05$ level (2-tailed); N = total number of participants.*
### Pearson Correlations of Grit and GPA by Gender

<table>
<thead>
<tr>
<th>Gender</th>
<th>Grit Score</th>
<th>Pearson Correlation</th>
<th>Grit Score</th>
<th>GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td></td>
<td>1</td>
<td>.103</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sig. (2-tailed)</td>
<td></td>
<td>.107</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N</td>
<td>247</td>
<td>247</td>
</tr>
<tr>
<td>Female</td>
<td></td>
<td>1</td>
<td>.100</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sig. (2-tailed)</td>
<td></td>
<td>.041*</td>
</tr>
<tr>
<td></td>
<td></td>
<td>N</td>
<td>422</td>
<td>422</td>
</tr>
</tbody>
</table>

*Note.* * *= correlation is significant at the *p* < .05 level (2-tailed); *N* = number of participants.
### Results & Analysis

**Predictor Variables of Regression Model of Age, Grit, and GPA**

<table>
<thead>
<tr>
<th>Predictor Variable</th>
<th>Beta</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>.018</td>
<td>.650</td>
</tr>
<tr>
<td>Grit Score</td>
<td>.023</td>
<td>.019*</td>
</tr>
</tbody>
</table>

Note. * = correlation is significant at the $p < .05$ level.
Results & Analysis

Results of ANOVA for Mean Grit Scores 3rd Year Students Who Have or Have Not Successfully Defended their Dissertation Proposals

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>.38</td>
<td>1</td>
<td>.38</td>
<td>1.95</td>
<td>.167</td>
</tr>
<tr>
<td>Within Groups</td>
<td>15.63</td>
<td>80</td>
<td>.20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>16.01</td>
<td>81</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. df = degrees of freedom.
Post Hoc Analysis

• ANOVAS NOT Significant for:
  – Mean grit male & female
  – Mean grit 1\textsuperscript{st}, 2\textsuperscript{nd}, & 3\textsuperscript{rd} year group by gender
  – Mean GPAs for male & female

• Pearson Correlations NOT Significant for:
  – Grit & average hours worked per week
  – Grit & total number of classes taken
Post Hoc Analysis

• Pearson Correlations that were Significant:
  – Grit & age, $r(669)= 0.11, \ p < 0.003$
  – Grit & average number of hours spent on program of study per week, $r(669)= 0.11, \ p < 0.006$
  – Age & average number of hours worked per week, $r(669)= -0.16, \ p < 0.000$
  – Age & Average Number of Hours Spent on Program of Study per Week, $r(669)= 0.25, \ p < 0.000$
  – Average hours worked per week & average number of hours spent on program of study per week, $r(669)= -0.17, \ p < 0.000$
Implications

• Non-traditional doctoral students in this sample score high on the grit scale, may need more sensitive instrument
• Older students score higher in grit
• Grit is related to GPA
• Grit especially related to GPA for females
  – Consider recruiting older students and more female students
  – Finding ways to have grittier students help less gritty counterparts, by modeling the way
• Conduct further longitudinal research
Key Assumptions & Limitations of the Study

• Assumptions & Bias
  – That personality characteristics are related to or impact measures of non-traditional doctoral student success
  – Raffle may have influenced participation
  – Provost recruitment email may have encouraged or discouraged certain participants

• Limitations
  – Sample not representative of all non-traditional doctoral programs
  – Data all self reported
  – Sample highly gritty, grit scale not detect slight differences
  – Design- would be better to look at grit and success measures over time
  – 3rd year sample small
  – Time and resources
Summary

- Study examined grit in relation to academic success factors of non-traditional doctoral students
- Data was collected from pool of 3,200 students with 669 completed responses analyzed
- The results revealed no significant differences in mean grit scores for 1st, 2nd, or 3rd year students, nor for students that had successfully defended or not successfully defended their dissertation proposal
- The results revealed a significant relationship between grit and current GPA
- Post hoc analysis revealed significant relationships between grit and average hours spent on program of study; and grit and age
- Findings suggested further research is warranted and that stakeholders associated with non-traditional doctoral programs may want to consider grit in programmatic decisions
References

- Ask Me and I will Send them to You 😊