Power of Grit and Impulsiveness: a study of Adolescent Academic Motivation using the Theory of Planned Behaviour.

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Abstract

Intentions of adolescents to study and how study behaviour may be influenced by the internal variables of Azjen's Theory of Planned Behaviour, in addition to the external variables of Impulsiveness and Grit were investigated, with a view to discovering any gender differences. This study found no gender differences between variables of Azjen's Theory of Planned Behaviour; Grit was not found to be significantly correlated with Academic intentions, contrary to previous research; but a significant correlation was found between academic intentions and Impulsiveness.

Introduction

This study will look at the extent Intentions to study correlate with the Direct and Indirect variables of Attitudes towards study, Perceived Behavioural Control and Subjective Norms. Together they can be held to predict academic motivation (Ajzen, 1991).
The Theory of Planned behaviour has largely been used in studies of health related issues. However, Comerford (2012) found that TPB variables are significantly correlated with intention and therefore can be used as a model for academic behaviour. Gender differences were also found within this framework (Comerford, 2012). There is a gap in the research of academic motivation using the TPB for adolescence providing a rationale for this study.

Adolescents develop the capacity of establishing plans that are more distant in time, in contrast to children, whose capacity is more limited to close events (Barkley, 1997). It is in adolescences that the functions of the prefrontal cortex, which oversees the orientation to future experiences, goes through an important maturation process (Blakemore, den Ouden, Choudhury, & Frith, 2007). Blakemore et al., (2007) conducted an fMRI study revealing the neural strategy for thinking about intentions continues to develop during adolescence and early adulthood. If this is the case then such regions may not function as efficiently in adolescents as in adults (Blakemore, den Ouden, Choudhury, & Frith, 2007, p. 137), which may lead to weaker decision making processes, forward planning and intentions to act.

In adolescents, behaviour and decision making is more influenced by extrinsic factors, such as social pressure of their peers (Wong and Csikszentmihalyi, 1991). In this context adolescents may behave more impulsively than children and adults (Casey and Caudle, 2013) and this could be directly related to the differences in grit and self-control found between children and adolescents (Oriol, Miranda, Oyanedel, & Torres, 2017). In her studies Duckworth found grit to be a better predictor of success than IQ. Findings suggested that perseverance and sustained focus on a long term goal can be more important than talent (A. L. Duckworth & Seligman, 2005). The influences of Impulsiveness, Grit and Perceived Subjective Norms, as measured by the Theory of Planned Behaviour, may gain higher significance as extrinsic motivation becomes more influential.

This previous research provided rationale for this study into adolescent academic motivation and the extent it is influenced by Grit and Impulsiveness.

Hypotheses

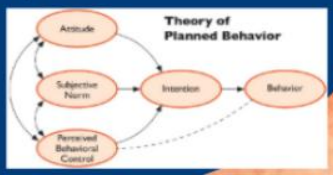
Hypothesis 1. The TPB variables i.e. attitude, Subjective norm and perceived behavioural control will significantly positively correlate with intention to study.
Hypothesis 2. The external variables of Grit will be positively correlated with academic motivation.
Hypothesis 3. The external variables impulsiveness will be positively correlated with academic motivation.
Hypothesis 4. Female adolescents will display higher levels of impulsiveness than male adolescents.
Hypothesis 5. Female adolescents will display higher levels of grit than male adolescents.
Hypothesis 6. Female adolescents will display higher levels of intent to study (i.e. TPB variables: attitude, Subjective norm and perceived behavioural control) than male adolescents.

1. Significant relationship between TPB constructs and Intentions, except Indirect PBC
2. Grit not shown to be correlated with intentions
3. Impulsiveness highly correlates with intentions
4. No gender differences in impulsiveness
5. No significant differences in Grit between genders
6. No gender differences in intent to study

Methods

All ninety six respondents from this homogeneous purposive sample attended Second Year in the same Post Primary school in North County Dublin. The questionnaire was developed on Google forms and administered through the online platform by students using their own individual iPads.

The study design was quantitative and correlational in nature. Correlation designs search for relationships between variables, as opposed to causation. The criterion variable selected (CV) was academic motivation, measured through the construct of Intentions in TPB. The predictor variables (PV) were variables of Attitude, PBC and Subjective Norm within TPB, Impulsivity and Grit.



Measures Used

Theory of Planned Behaviour (Ajzen & Fishbein, 1980; Ajzen, 1991)

Grit using the 8 item Grit Scale for children (Duckworth & Quinn, 2009)

Impulsiveness using BIS-11-A 15-item for adolescents (Fossati et al., 2002)

Table 2: *Correlation for TPB variables, Grit and Impulsiveness*

Variables	Total intention	Direct Attitude	Indirect Attitude	Direct PBC	Indirect PBC	Direct Subjective Norm	Indirect Subjective Norm	Total Grit	Total Impulsiveness
Total intention									
Direct Attitude	**.343****								
Indirect Attitude	**.309****	**.530****							
Direct PBC	.502**	.248*	.222*						
Indirect PBC	.191	-.093	-.122	.032					
Direct Subjective Norm	.436**	.301**	.131	.156	.065				
Indirect Subjective Norm	.288**	.404**	.260*	.250**	-.027	.450**			
Total Grit	**.141**	**.161**	**.128**	.382**	-.086	-.020	.001		
Total Impulsiveness	.354**	.160	.318**	.268*	-.083	.250*	.205	.026	

Note: **.Correlation is significant at the 0.01 level (2-tailed). *.Correlation is significant at the 0.05 level (2-tailed). Statistics in bold are using Pearson's Correlation

Discussion

Perhaps the most surprising result found in this research was the lack of a significant relationship between Grit and academic motivation, as measured by TPB Intentions. Results reflected that of Credé, Tynan, & Harms (2017) who conducted a meta analysis that indicated that grit is only moderately correlated with performance and retention.

Upon conducting a Spearman rho to analyse the relationship between Impulsiveness and academic motivation a medium, positive, highly significant relationship was discovered, reflecting previous research that suggested delay gratification and academic achievement are positively correlated also (e.g., Wulfert, Block, Santa Ana, Rodriguez & Colsman, 2002). According to Herndon (1986) these cases highlighted an urgent need for more causational study to advocate the implementation of new curriculum that includes strategies for the development of gratification delay (Herndon, 1986). It is recommended that intrinsic motivation could increase the predictive utility of the Theory of Planned behaviour (Chatzisarantis, Hagger, Smith, & Sage, 2006). it must be considered that there may be a difficult for some participants to convert the hypothetical intention to actual intention. This can be seen as a limitation to the TPB.

The results of this study supports suggestions made by Crede et al. (2016) that interventions designed to enhance grit may only have weak effects on performance and success. Considering the results in this study it may be a better use of resources to focus on how cognitive methods of teaching could bring out measurable gains in impulse control, leading to stronger scholastic performances suggested by Spinella et al. (Herndon, 2008, p.31).

Further research, similar to that of Blakemore et al., (2007) using fMRI, is encouraged so researchers and policy makers can better understand the neural strategy for thinking about intentions as it continues to develop during adolescence and early adulthood.