

Review of: "Grit Predicts Academic Achievement among Undergraduate Science Teachers at a University of Science and Technology"

Wilbert Spooren¹

¹ Radboud University of Nijmegen

Potential competing interests: No potential competing interests to declare.

I welcome the fact that the authors have carried out a relatively large study in a non-Western context. I also appreciate the writing style. At the same time I believe the current study is not ready for publication and it is doubtful that the current materials lend themselves to a full academic publication.

Most important issue: the theoretical urgency of the study is missing. The relationship between grit and academic performance has been studied extensively ("grit "academic achievement"" gives more than 20,000 hits in Google Scholar). What does the current study have to add?

Overall, the theoretical component of the study is very weak: we learn not about possible mechanisms that might explain the link between grit and academic achievement. A caricature of the analysis could be: students who feel well perform better than students who do not feel well. That certainly does not sound like a deep and new insight.

The way the information is organized is less than optimal: the discussion section contains a great number of references that seem to be relevant for the theoretical background of the current study. Why haven't they been mentioned earlier?

The method of analysis is suboptimal. The authors report both a correlation analysis and a linear regression, where they apparently are not aware that these are basically the same analysis (cf. the relationship between the correlation coefficients in table 3 and the regression coefficients in table 4). The correlation analysis can be discarded. It is also unclear what exactly has been done: perseverance and consistency together make up grit (and consequently are correlated with grit), yet they have been put into the regression analysis as predictors of academic achievement. I think the authors should seek statistical help and learn about collinearity.

Overall the analysis seems naive. The authors have collected many variables of the participants, but only report the relationship between grit and achievement. Other individual characteristics that could be relevant (age, gender, year of study, study subject etc.) have not been considered as possible predictors.

Details about the operationalizations are missing. It looks as if the authors have used sum scores and not mean scores but do not state that explicitly. The authors state that the participants have given informed consent, but the participation rate in the study is 100% (the census method, "where all student teachers in years one, two and three were enrolled in the study"), which in my experience is extremely rare. In my university it is not allowed to use one's own

students in a study; it looks as if there are quite a number of ethical issues to be discussed about the study method.

The conclusions and recommendations are very much overstated. The study is correlational and the correlations are small. Nevertheless the authors formulate strong implications, for example that instructors should pay attention to grit-like properties of students (presumably to improve academic achievement). But what if the relationship is different: e.g., that academic achievement improves grit or that both are related to unknown other factors?

Details

The overall editing quality is poor: many references in the text are not in the list of references; several items in the list of references are not referred to in the text.

It is not clear what style of formatting the authors are following. It looks like a version of APA but that is not followed closely.

Several tables seem directly exported from SPSS and could be optimized.

Additional details are in the appendices.