

PREDICTING STUDY SUCCESS IN ENGINEERING

Why do we need talented engineers?

Because:

- We face a shortage of technicians;
- To develop economic growth we need inventors of our future;
- Far too few students choose a course in Engineering;
- A lot of technicians will retire;
- As many Engineering students as possible should finish their course of study.



What are the characteristics of a talented engineer?

Based on literature research, the personality trait conscientiousness is considered as a success factor for study success in general. Creativity is a trait connected to being successful in Engineering.

Research question: how are conscientiousness and creativity related to study success in an Engineering course of study?

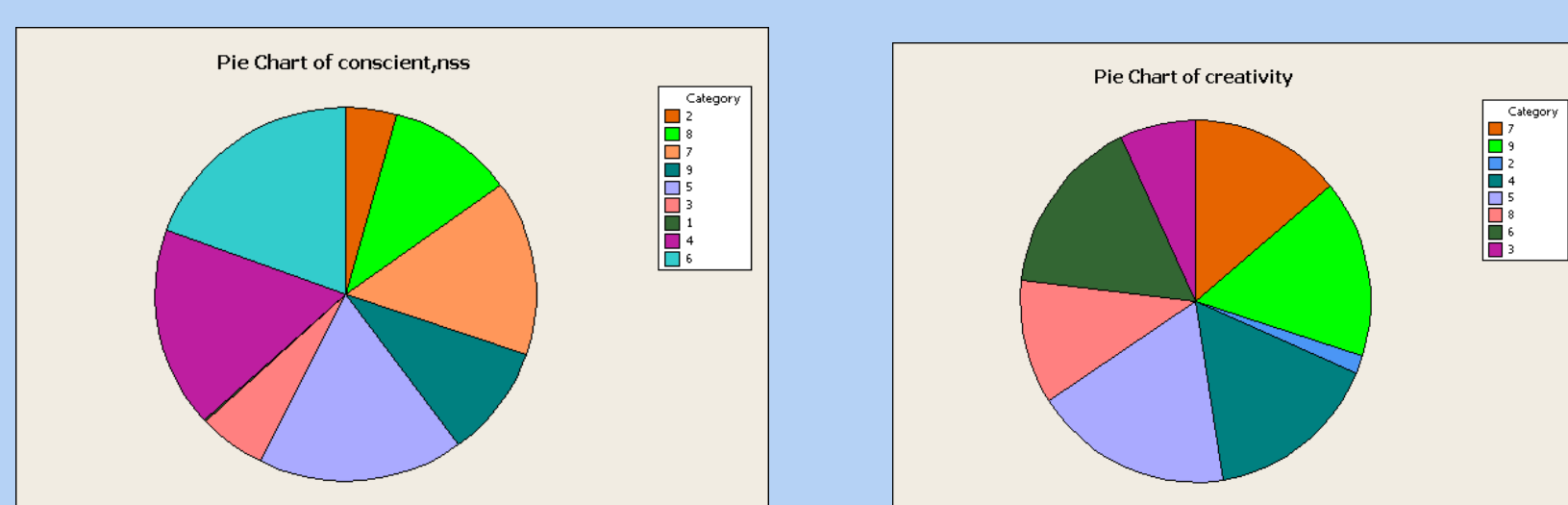


Figure 1. Scores for creativity and conscientiousness at HIT, six being the norm score for first year HBO students.

How do we determine talented engineers?

High study success is determined by finishing the first year at the Hanze Institute of Technology in zero or one year, low study success by finishing in two years or dropping out. High conscientiousness and/or creativity means scoring above the norm score (HBO-first years) at a personality test, equal to or below norm score means low conscientiousness and/or creativity. Chi-square tests and Cramer's V are used to determine the relation between study success, conscientiousness and/or creativity.

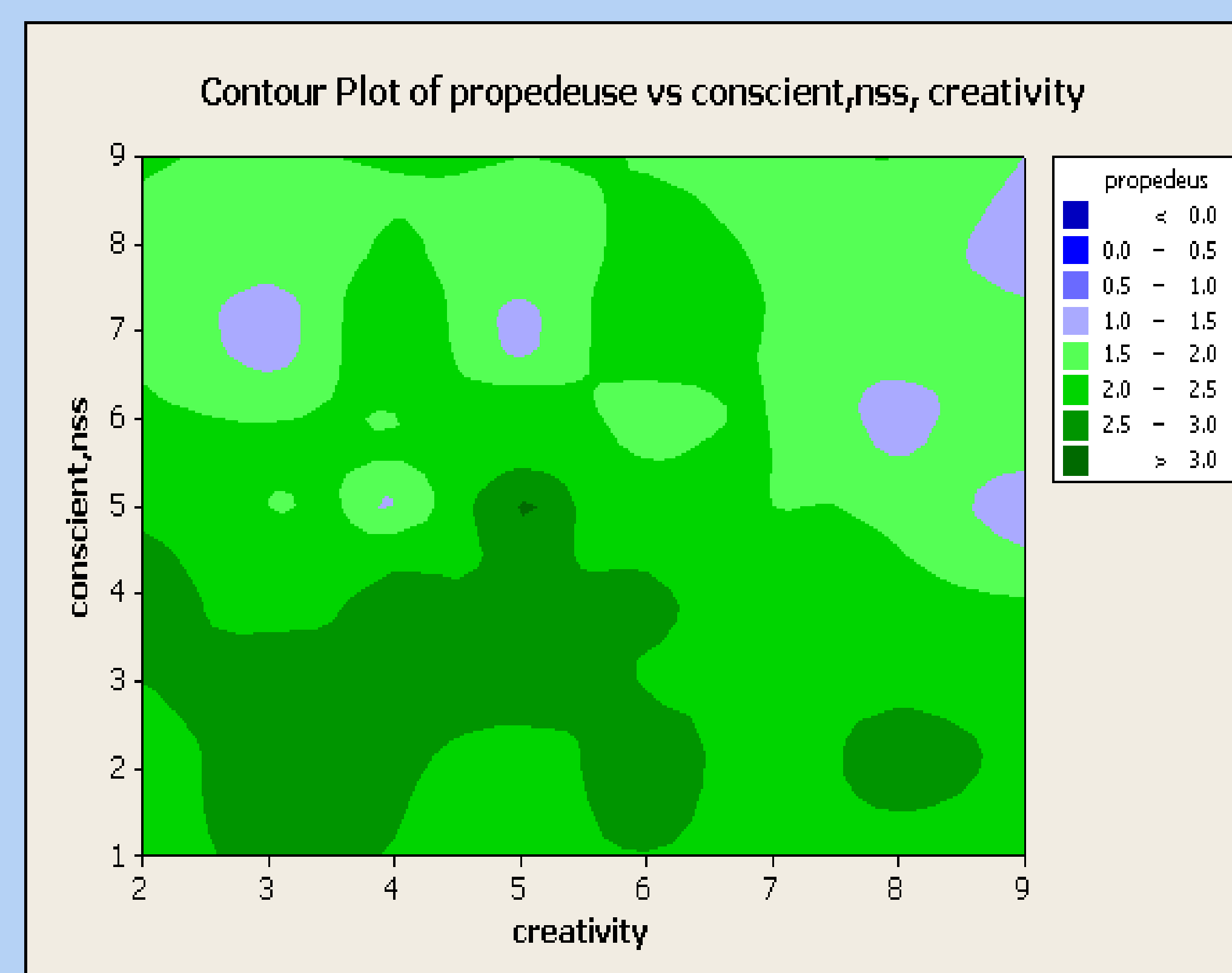


Figure 2. Relation between the three variables propeduse, conscientiousness and creativity

Which characteristics are related to study success?

In this research, we found that conscientiousness is positively related to study success, whereas the relation with creativity could not be proven. Also the combined score conscientiousness and creativity did not prove to be of influence on study success. However, there are indications that the combined score will have influence on study success.

Where should we focus on in future research?

- Are other characteristics such as motivation, capacity, self-confidence of influence on study success in Engineering?
- Is it possible to measure creativity in a more accurate way?
- Are multicultural aspects involved in finding relation between study success and creativity and/or conscientiousness?
- Is it possible to enhance conscientiousness and/or creativity in a course of study? If so, how?



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