

Exploring Non-Cognitive Reasons behind Success after Failure

Elle Yuan Wang, Ph.D, Jim Cunningham Ph.D, and Phil Arcuria, Ph.D

Arizona State University, EdPlus Action Lab

Background

The availability of large-scale online courses enabled **assessment of academic performances at scale**. Equally important is the opportunity to investigate the state of **non-cognitive or soft skills** of online learners to inform design of interventions to improve learning outcomes.

Problem Statement

Pathways to success vary. Some failures may be productive and necessary (Kapur, 2008; Kapur, 2010). Some learners may be more discouraged than others when facing failure, out of cognitive and non-cognitive differences.

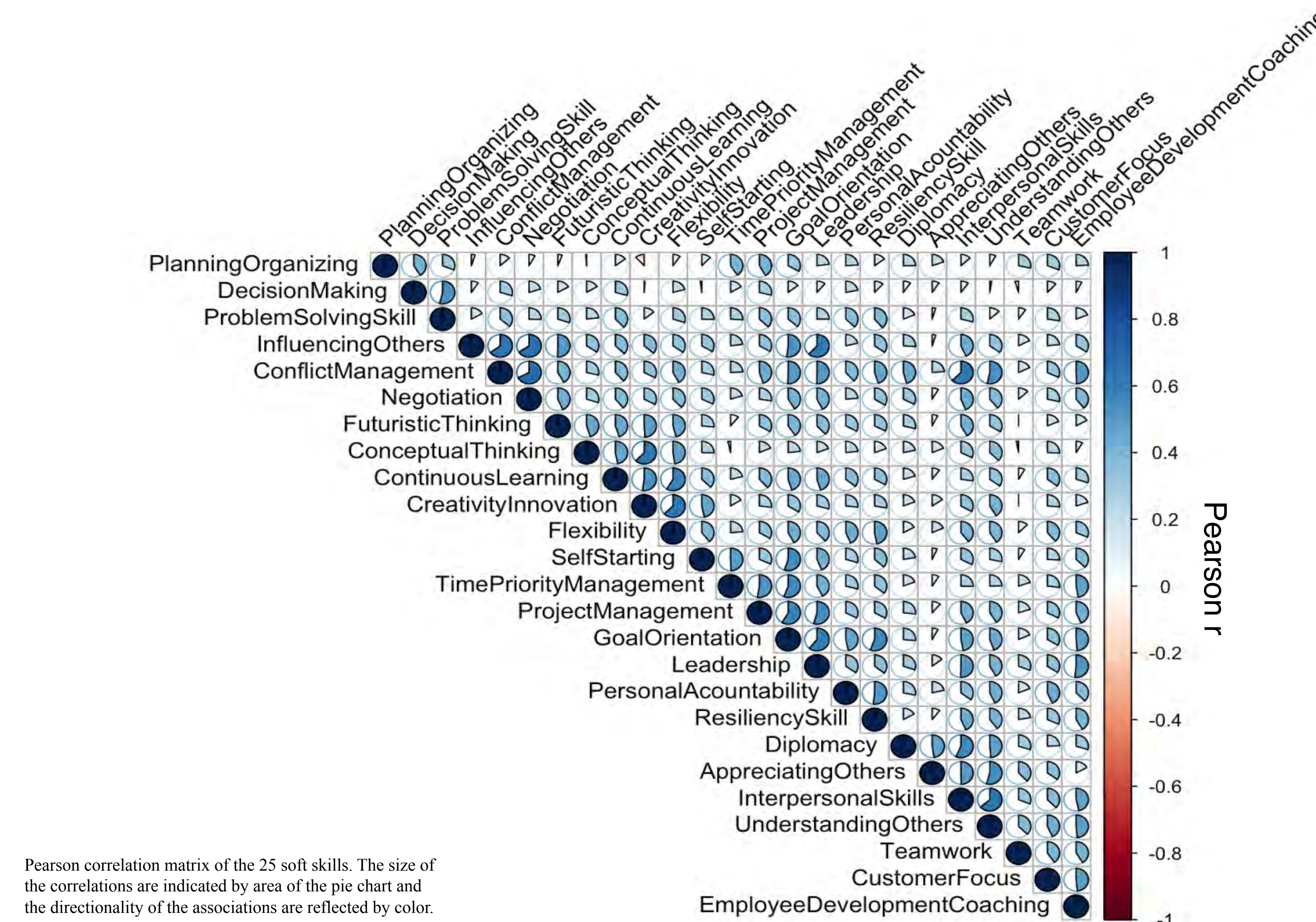
Therefore, it is imperative to understand why some learners are more likely to continue their learning processes after failure than others.

Research Question

How do learners who succeed after experiencing failure in an adaptive online course differ with regard to their soft skills?

Indigo 25 Soft Skills

A total of 255 learners of the math course voluntarily participated in a non-cognitive skillsets assessment developed by Indigo Project (Indigo, 2017), designed as part of an online orientation course.



Conclusions

The present analysis looked learners who successfully passed the course, either passed at their first attempts or passed after failed attempts, and compared how their soft skills differ from the rest of learners. The findings suggested that

- 1) Learners who successfully passed the course tend to have strong skill sets related to **time and project management**;
- 2) Learners who successfully passed the course after failed attempts tend to have higher skill sets related to **decision making and leadership**.

Method

2 types of outcomes

Type 1:
Passing 1st
Attempt



Type II:
Passing after
Failure

Analyses

1. A **principal component analysis** based on the 25 competency assessments was conducted.
2. The extracted principal components were then used in two **logistic regression models** to predict the two types of outcome measures: passing the course, and passing the course after failed attempts.

Results

Component 1: High on **Empathy and Teamwork** Skills

Component 2: High on **Decision Making and Organizational** Skills

Component 3: High on **Creativity**

Component 4: Low on **Leadership** Skills

Component 5: Low on **Time management** Skills

Table 1: Logistic Regression Analysis on Passing the Course

	B	S.E.	Wald	df	Sig.	Exp(B)
Component 1	-.344	.155	4.951	1	.026	.709
Component 5	-.372	.154	5.793	1	.016	.690
Constant	.083	.136	.369	1	.543	1.086

Table 2: Logistic Regression Analysis on Passing after Failure

	B	S.E.	Wald	df	Sig.	Exp(B)
Component 2	.847	.375	5.109	1	.024	2.332
Component 3	-.634	.346	3.353	1	.067	.531
Component 4	-1.410	.450	9.800	1	.002	.244
Constant	-3.822	.540	50.165	1	.000	.022

References

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Further Information

elle.wang@asu.edu
edplus.asu.edu/projects/action-lab

