

# Developing a Growth Mindset: A longitudinal exploration of a mindset intervention for NTU undergraduate students

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## INTRODUCTION

Students can experience educational and social challenges at University. Growth Mindset and Resilience can play a fundamental role in determining whether students respond favourably to challenges and in developing and maintaining student resilience (Yeager & Dweck, 2012). Student resilience relates to internal factors that include self-management (e.g., goal setting and persistence) and emotional control, and external factors that include social integration within the University and use of support networks (McIntosh & Shaw, 2017).

### Fixed Mindset:

Intelligence is a fixed trait. "I've never been able to do Maths, so what's the point in trying?"  
"Well of course they did well, they never have to put any effort in."

### Growth Mindset

Intelligence is a quality that can be developed. "I sometimes struggle with my writing, so I'll need to practice."  
"I got that wrong before, but now I know to spend more time revising."

**Aim:** To explore the impact of a growth mindset intervention on student growth mindset, resilience, and sense of belonging (measured by identification as an NTU student)

## METHOD

### Design & Participants

Educational intervention with a longitudinal survey evaluation with 25 female Level 4 NTU Equine Sports Science students

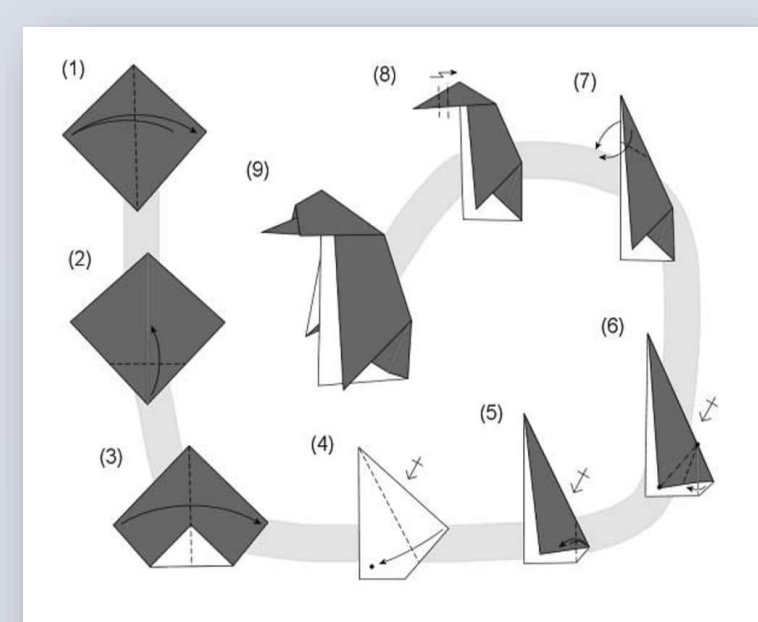
### Survey Measures

- **Growth mindset** (Dweck, 2017) 16-item Dweck Mindset Instrument (DMI) (e.g., "You have a certain amount of intelligence, and you really can't do much to change it")
- **Resilience** (Campbell-Stills & Stein, 2007) 10-items from Connor-Davidson Resilience Scale (e.g., "I am able to adapt when changes occur")
- **Identification** with NTU student identity (Doosje, Ellemers, & Spears, 1995) 4-item Social Identification Scale (e.g., "I identify as an NTU student")

### Procedure

#### Session 1 (75 mins)

- Baseline survey measuring Growth Mindset Resilience and Identification as NTU student
- Teaching on introduction to Growth Mindset principles and brief origami practical task
- Students review their recent feedback using 'Feed-forward' learning strategy



#### Session 2 (75 mins; 9 weeks later)

- Discussion and revision on Growth Mindset principles
- Review of use of feedback forward worksheet in intervening assignments
- Group problem solving task: 5 learning scenarios with University context requiring groups to create solution-based action plans

Example: 'You have been given 4 assessments to complete from different modules that all need handing in within the same week in May. What would you do?'

- Follow-up survey measuring Growth Mindset, Resilience and Identification as NTU student

## RESULTS

Results showed Growth Mindset ( $p=.016$ ), Resilience, ( $p=.002$ ) and NTU Identification ( $p=.067$ ) were positively correlated at Time 1 and Time 2. NTU Identification and Resilience at Session 1 were also positively associated ( $p=.036$ ), indicating that higher student identification was linked to higher resilience.

A repeated-measures analysis of variance (ANOVA) was conducted to compare the students' Session 1 and Session 2 scores for each variable. Resilience and NTU student identification did not differ significantly between Session 1 and Session 2 (Resilience:  $F(1,12) = 0.35$ ,  $p=.57$ ; Student Identification:  $F(1,12) = 0.05$ ,  $p = .83$ ).

However, students' **growth mindset increased significantly** between Session 1 (Estimated Marginal Mean = 3.85, SD = 0.52) and Session 2 (Estimated Marginal Mean = 4.44, SD = 0.61),  $F(1,12) = 19.86$ ,  $p = .001$ .



## CONCLUSIONS

The results showed that classroom interventions can successfully influence growth mindset beliefs and resilience, whilst increasing a sense of belonging as a university student. This study only includes two sessions so results should be interpreted as preliminary but they suggest that embedding training on growth mindset principles into the curriculum could potentially influence students' attitudes to learning, which can influence their resilience and approach to challenge whilst at University. The study also showed that resilience is linked with a sense of belonging and identification as a student within the institution. Indicating that social relationships can also influence students' approaches to challenge and learning.

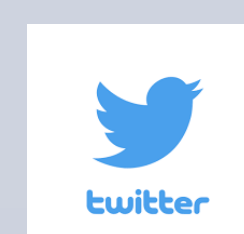
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