Achieving Mathematical Maturity through Mathematical Identity (MMMI)

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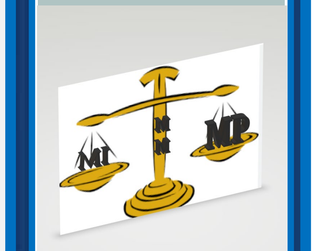
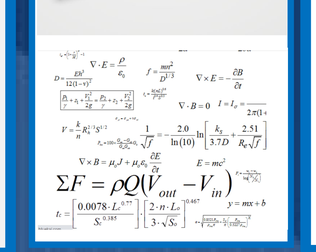
Introduction

Mathematics a subject that is considered difficult by most students, and this result in students developing poor attitude towards mathematics. The attitudes towards mathematics have been reported worldwide. Unfortunately, students use them to choose what to learn and how to learn it (Prendergast, Murphy, O'Neill, & Roche, 2018).

Researchers such as have recently used mathematical identity as a means of changing students' views on mathematics. Though there is no formal agreement on the strands of mathematical identity, studies conducted by Prendergast, et al. (2018), Chronaki, (2011) showed a correlation between students performances and mathematical identity.

In addition, there Braun, (2019), conducted a study on mathematical maturity using simplified functions of the human psyche as strand for maturity, found an improvement in students performance in mathematics after focusing on teaching using mathematical proficiency' starnds.





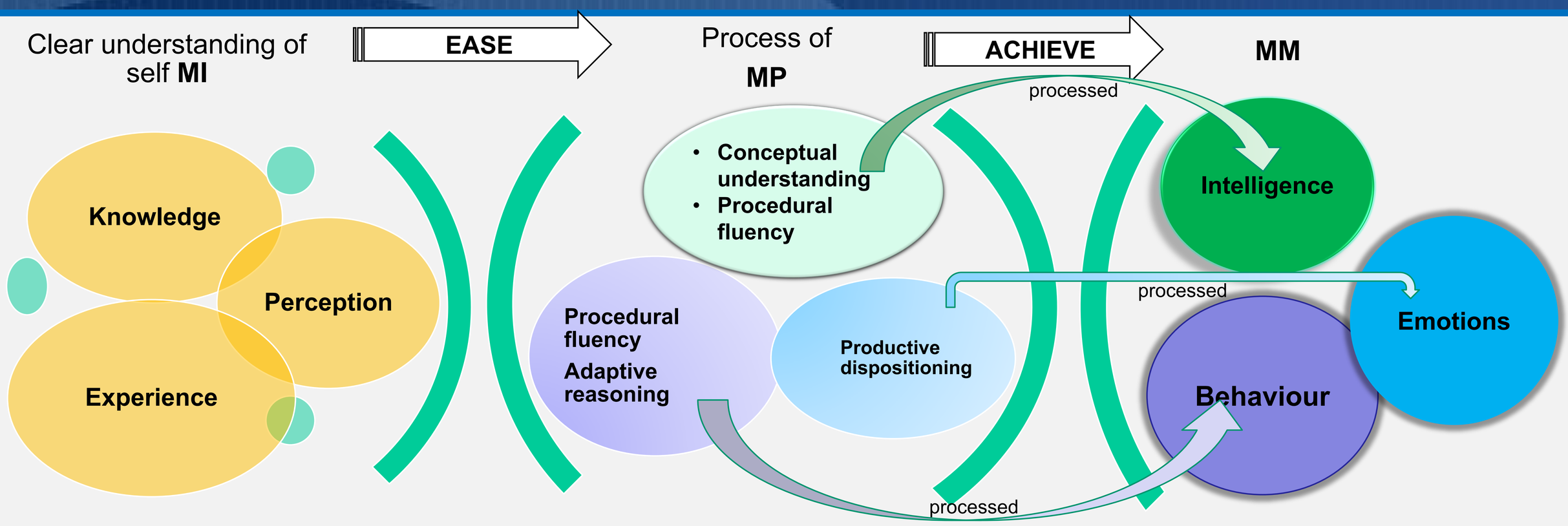
Definitions (MIMM)

Mathematical Maturity (MM): a mathematically matured student is a student who demonstrates high development in **intellectual**, **behavioural** and **emotional** functioning with their mathematics work.

Mathematical Identity (MI): a relationship that has various aspects that one has with mathematics, including **knowledge**, **experience** and **perception** of yourself.

Mathematical Proficiency (MP) strands: conceptual understanding, procedural fluency, strategic competency, adaptive reasoning and productive disposition.

Framework of MIMM



Methodology

Step 1
- A questionnaire is created to measure MI.
- A questionnaire to measure students' mathematical competency is also developed.

Step 2
- Pilot study where a sample of interest is identified.
- Survey administered as a pre-test.

Step 3
- Put into action the five strand of competency suggested by Braun, through an intervention programme.

Expectation

Existing research has shown a positive relationship between mathematical identity and performance as well as improvement on performance when sessions are addressed with the focus of addressing proficiency language. With this I expect an improvement in students' intellectual, behavioural and emotional functioning of first year students in their work with mathematics.

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