CURRICULUM, PEDAGOGY AND BEYOND









Acknowledgement Of

Country





E26 – Enhancing Middle Years Numeracy: a Strengthbased Pedagogy

Milton Bai, Kensington Community High School Gloria Yi, St Albans Secondary College

About Milton Bai: presenter

Secondary School Teacher

Master of Teaching (Secondary), Monash University & Master of Education, the University of Melbourne

Brauer College (Warrnambool): mathematics teacher Kensington Community High School: mathematics teacher, placement coordinator

About Gloria Yi: co-presenter

P-12 Teacher

Master of Teaching (Primary) & Master of Teaching (Secondary), the University of Melbourne

Portland Secondary College: mathematics teacher, recipient of Department of Education TFI program St Albans Secondary College: mathematics teacher (Maths Faculty Leader), Staff Development (VIT full registration, pre-service teacher placements)

Are you ready to learn?

1 Absolutely not ready

2

Not ready



3

Starting to be ready



4

Ready



5 Absolutely ready to learn

What's on today

Context of this strengthbased approach (Milton) Background research: strength-based approach and berry street education model (Milton & Gloria)

Deep dive into the project (Milton)

Implementation at Kensington Community High School: School Dance maths project (Milton)

Expanding the approach: VCE – VM (Gloria & Milton) Reflection, discussion, and Q&A (Milton & Gloria)

Context of the connected curriculum approach



2024 at Kensington Community High School



Numeracy learning needs identified by student data (NAPLAN, PAT-M, etc.)



School AIP created aiming at improving Middle School Numeracy



Numeracy PLC: the need of providing authentic tasks and improving numeracy engagement

Professor Peter Sullivan's research



What is strength-based approach?

- A strength-based approach is a strategy educators use to identify what works well for a child, what they know, what they can do, and how to use this for further development.
- These strengths include physical, intellectual, and interpersonal skills.



https://www.education.vic.gov.au/documents/childhood/professionals/learning/strengthbappr.pdf

https://www.kingstrust.org.au/

Tool to identify personal strengths



https://www.viacharacter.org/character-strengths

Strength-based approach cont.

- Strength-based education encourages learning by offering positive reinforcement, building confidence, and focusing on a child's potential.
- Strength-based approach utilises a child's positive traits, skills, behavior, and thought processes to their benefit. In short, it uses success to create even more success.



Benefits of the strength-based approach

Impacts on performance



Berry Street Education Model

Berry Street Education Model (BSEM) equips both mainstream and specialist schools with practical, classroom-based strategies to increase the engagement of all students, including those with complex, unmet learning needs.

The education model enables schools to support students' self-regulation, relationships and wellbeing to increase student engagement and significantly improve academic achievement.



BSEM – Body – Ready to learn scale

- The Ready to Learn Scale is a tool that helps students identify and manage their emotions and stress levels. The scale can help students develop self-regulation skills, which are important for preparing students to learn.
- It can be used by teachers to check in with students individually or as a whole class.

1 Absolutely not ready	2 Not ready	3 Starting to be ready	4 Roady	5 Absolutoly ready to learn
Absolutely hot ready	Notready	Starting to be ready	Neady	Absolutely ready to learn

https://www.berrystreet.org.au/learning-and-resources/berry-street-education-model





Deep Dive into the Project

Design and application of Strength-based math project

School Event Project

Theme: School Dance

Team Members: 3-4 students per team

Duration: 3-4 weeks

Project Overview

You and your team will be planning a school event—a School Dance. In this project, you will use data collection, probability, measurement & geometry, financial numeracy and number & algebra skills to create an event plan, find logistical needs and conduct the event. This is an opportunity to apply your maths skills in a creative, real-world scenario while working collaboratively with your peers.

Instructions

- Forming Your Team
- You will work in a team of three to four students.

Leadership Rotation

Each member will take turns being the leader for different parts of the project on different days. The leader's role is to coordinate the tasks, make sure everyone understands the goals, and use their strengths to help others.

Leadership roles will change for each project part:

- Part 1: Survey Design and Data Collection
- Part 2: Layout Design and Attendance Estimate
- Part 3: Event field measure and Materials planning
- Part 4: Materials purchasing and setting up event room
- Part 5: Project Reflection and Presentation Preparation

Participation Requirements

- Everyone must participate actively throughout the project.
- Leaders will ensure equal contributions from each member and encourage others to use their strengths.
- Reflect on strengths: Identify what you are good at—whether it's research, drawing, calculations, creative thinking, or presenting. Share your strengths with your group and support others as you work through each part.



Highlight of the project



Flexibility & adaptability

- Teachers can adjust the questions to suit their students' needs.
- Teachers can challenge students further if students are excelling in certain areas.
- Each question is designed independently along the same learning continuum. For students who have missed lessons or struggled with certain topics, this is a chance to revisit key



Suitability

- Teachers use "Ready to Learn" scale to assess students' readiness.
- For students with low readiness, modification will be provided through examples (inside green boxes).
- Ensure everyone is engaged at a level that suits their current mindset and ability.



Authenticity

- Students develop practical numeracy skill while connecting their learning to the real world.
- A valuable tool for teachers as part of formative and summative assessments.
- Rubric and progress check list n help teachers monitor students' progress effectively.

Strength – based maths project – what worked well?

Enhanced the efficiency of teaching and assessment by covering multiple strands within the same unit. Improved numeracy engagement by connecting learning activities and assessments to real life, and in particular, students' daily life.

Fostered the development of students' physical, intellectual, and interpersonal skills throughout the project.

Can be adjusted to make it suitable for cohorts in different year levels (Y9-10, VCE – VM).

Expanding the approach: VCE – VM

This project covers:			
Six numeracies	Areas of study		
 a) Personal numeracy b) Civic numeracy c) Financial numeracy d) Health numeracy e) Vocational numeracy f) Recreational numeracy 	Area of Study 1: Number Area of Study 2: Shape Area of Study 3: Quantity and measures Area of Study 4: Relationships Area of Study 5: Dimension and direction Area of Study 6: Data Area of Study 7: Uncertainty Area of Study 8: Systematics		

Reflection on the Strength-Based approach

What worked well so far:

- Student engagement authentic task
- Building a growth mindset and confidence based on strength
- Making connections between knowledge & skills and practical projects

What can be added to make it better:

- Effective differentiation effective assessments and not just focus on some students' strength
- More planning/reflection time for students
- Target extension (data informed & evidence based)











Event App

App Download Instructions

Step 1: Download the App 'Arinex One' from the App Store or Google Play



- Step 2: Enter Event Code: mav
- Step 3: Enter the email you registered with
- Step 4: Enter the Passcode you receive via email and click 'Verify'. Please be sure to check your Junk Mail for the email, or see the Registration Desk if you require further assistance.





Be in it to WIN!

<

A02 - (Year 1 to Year 6) Supporting High Potential and Gifted Learners in Mathematics

Pedagogy

 ☆
 Add to Favourite
 >

 ☑
 Complete the Survey
 >

 ③
 Description
 >

R≡ Speaker



Dr Chrissy Monteleone

