



16th Annual
Hawker Brownlow
**Thinking &
Learning**
Conference

the teacher's conference

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THURSDAY 16 MAY

Session 2

STEM & STEAM:

Experiencing STEM and Design Thinking

MELBOURNE



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Dr Adrian Bertolini is the founder and Director of Learning of Intuyu Consulting – an educational consultancy that works with teachers and schools to unleash learning. His journey began as a curious kid growing up in Dandenong and led him to being an engineer and Senior Lecturer in Aerospace Engineering at RMIT University. His career has taken him around the world, including spending time in the USA exploring leadership in innovative tech companies, and empowering students through the Are You Making a Difference program. Adrian has a strong background in both the practical application and theoretical underpinning of STEM and coding. He is constantly acknowledged for being an engaging, passionate and knowledgeable speaker, facilitator and coach.



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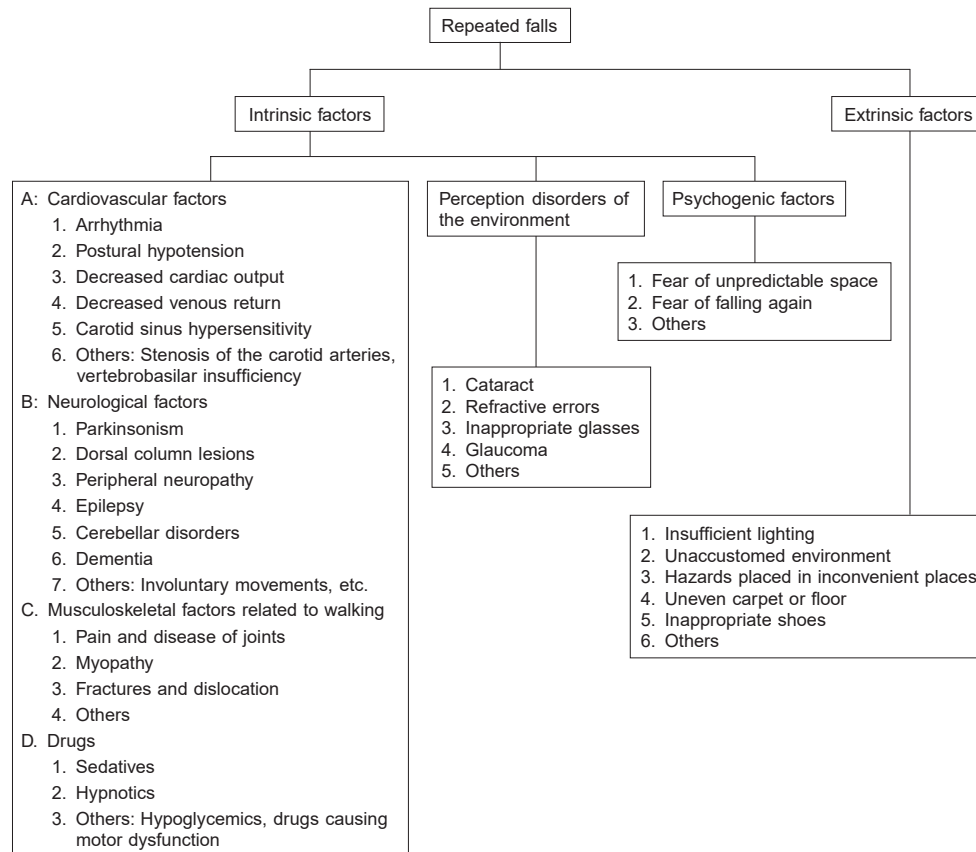


Fig. 1 Causes of repeated falls

a person moves and departs from the optimum position unexpectedly and fails to correct their posture by the righting reflex. The fall may be complicated by a fracture depending on the extent and nature of the defense reflex that is induced.

Situations in which falls may occur are as follows: 1) A fall may take place without external force while the victim is performing a usual movement, sitting in and arising from a chair or walking on flat ground, for example. 2) A fall may occur when an external force is exerted, for example, a gust of wind or an attack by a dog or cat. 3) A fall may occur when an individual encounters an unexpected hazard while

performing an intended action, e.g., stepping on a banana skin or tripping while walking. Most falls fit into one of these three categories.

Type 1 falls result from inability to maintain the body upright or from severe abnormalities of balance. If such a fall occurs, neurological disease, disease of the musculoskeletal system related to walking, and drugs such as sedatives should be suspected. A sudden decrease in cardiac output or cerebral circulation due to postural hypotension and severe arrhythmias such as sick sinus syndrome may cause a fall as a result of syncope. Coughing, urination, or defecation may also cause syncope. The patient who has fallen often says, "Everything went

Problem Solvers: An Age Old Problem

Elderly people fall over and are unable to get up easily and/or are not found for a while

Start by gaining empathy

1. Tuning In

- What questions could we ask?
- What things would we consider?
- What actions could we take to find out?

2. Dig Deeper

- What factors need to be addressed in this situation?
- What are the needs of the clientele?
- What is important and what is not?

Reframe the Problem

3. Capture your Findings

What type of person are we designing for?
What needs are important to fulfil?
What insights have we gained through synthesizing the data?

4. Define the Problem Statement

What is a meaningful and actionable problem statement?

How can we address *(user needs)*:

Using the insights of *(insights)*:

So that we achieve *(goal)*:

Ideate: generate alternatives

5. Sketch and describe at least 3 radical ways to meet your user's needs

Our problem statement is: _____

Sketch		Sketch		Sketch		Sketch	
Describe		Describe		Describe		Describe	

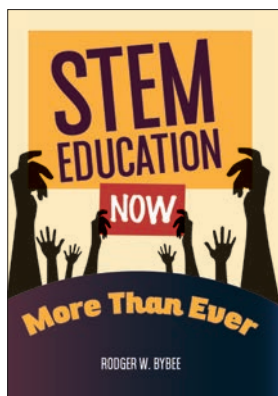
Select and Pitch: Review all ideas and then identify the big idea.

6. Sketch the big idea and prepare a 1 minute pitch of your idea

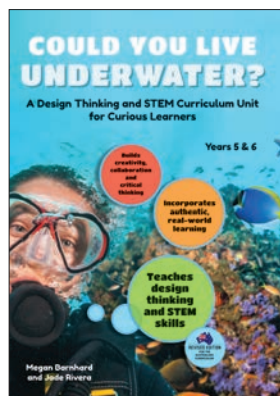
Sketch	Pitch Our problem statement is: Our Big Idea is: This meets the user needs of: And has the benefits of:
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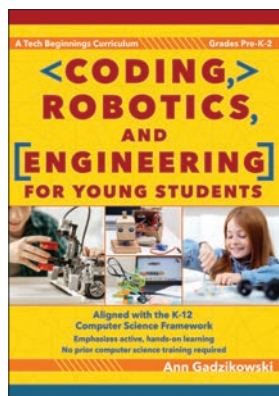
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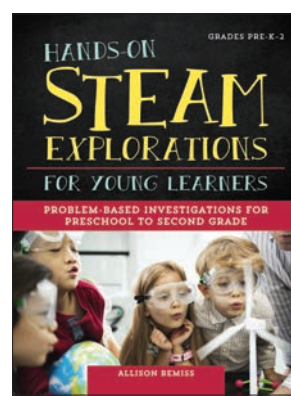
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