Improving medical student feedback through the development of a behavioural marker system for non-technical skills

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Aims of the workshop

- Be familiar with the concepts of non-technical skills (NTS) and behavioural marker systems (BMS);

- Understand how BMS have been developed within medicine and other health professional groups;

- Have experience of using the BMS to feedback to medical students in the context of acute care simulation;

- Understand how the BMS can facilitate the provision of individualised, specific and meaningful feedback to assist in the development of NTS.

What are non-technical skills?

"a combination of cognitive (e.g. decision making and situation awareness), social (e.g. communication, team working and leadership) and personal resource skills (e.g. coping with stress and fatigue) which complement knowledge and technical skills, and contribute to safe and effective performance" (Flin et al. 2008)

Why are non-technical skills important?
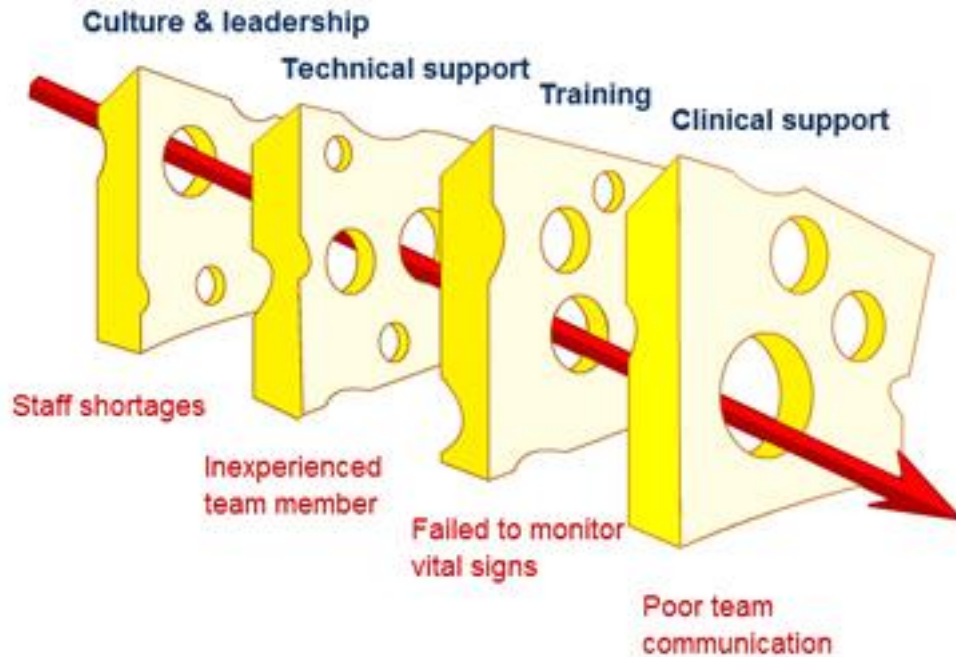
What are behavioural marker systems?

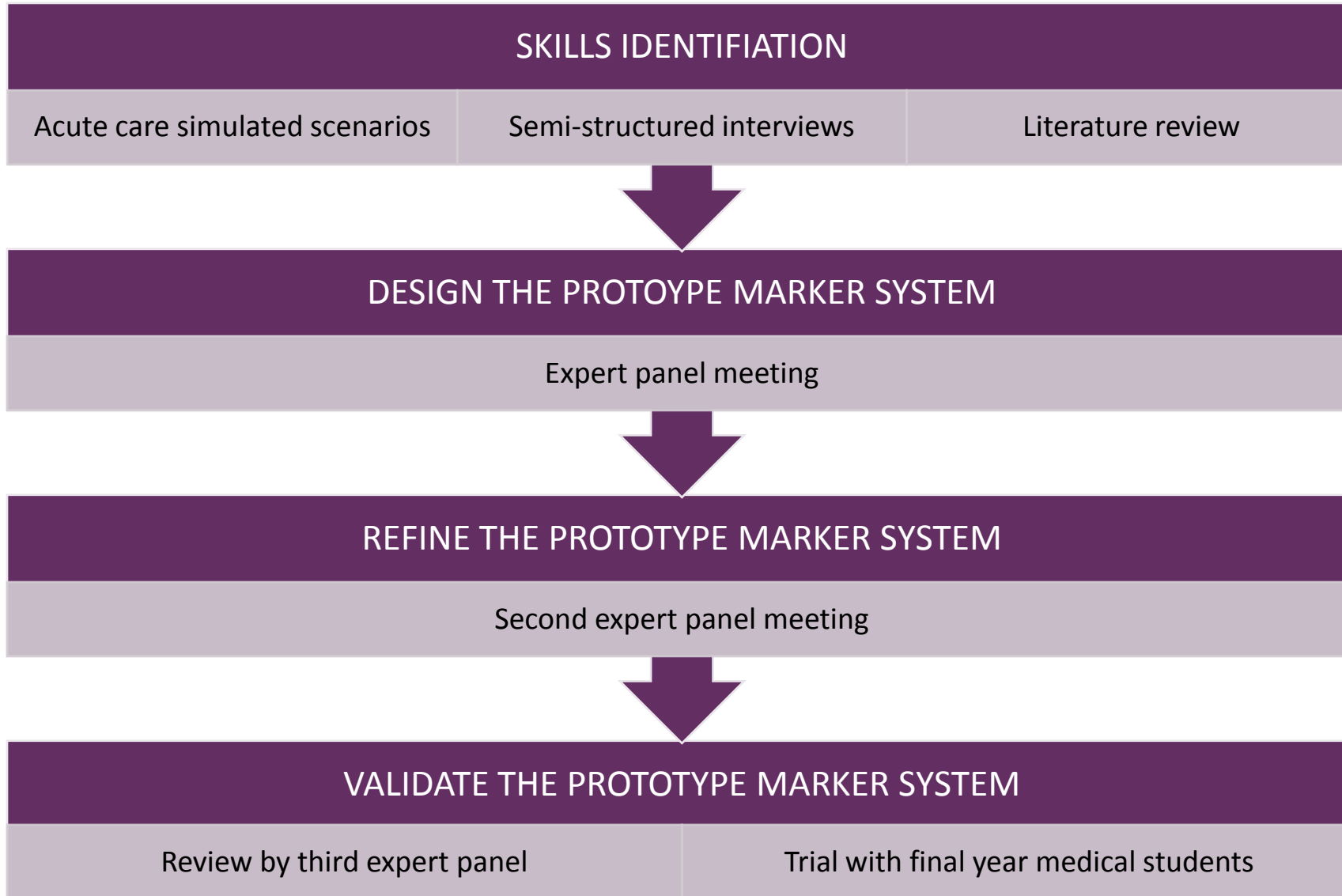| Skills Category	Skill Elements	Behaviours
TEAMWORK AND COMMUNICATION	ESTABLISHING A SHARED MENTAL MODEL	• Uses closed loop communication to verify task completion • Requests tasks without assigning a specific team member

The Medi-StuNTS System
(**Medi**cal **Stu**dents **N**on **T**echnical **S**kills)

DEVELOPMENT OF THE Medi-StuNTS System

SKILLS IDENTIFIATION

| Acute care simulated scenarios | Semi-structured interviews | Literature review |

DESIGN THE PROTOYPE MARKER SYSTEM

Expert panel meeting

REFINE THE PROTOTYPE MARKER SYSTEM

Second expert panel meeting

VALIDATE THE PROTOTYPE MARKER SYSTEM

| Review by third expert panel | Trial with final year medical students |

CATEGORIES	SKILL ELEMENTS
SITUATION AWARENESS	Gathering information Recognising and understanding information Planning, preparing and anticipating
DECISION MAKING AND PRIORITISATION	Prioritising Recognising and dealing with uncertainty Reviewing decisions
TEAMWORK AND COMMUNICATION	Establishing a shared mental model Demonstrating active followership Patient involvement
SELF AWARENESS	Role awareness Coping with stress Speaking up

USING Medi-StuNTS

- Pitched at the level of final year medical students – what would you expect at this stage
- It is limited to skills that can be observed
- . . . Or can be inferred from the communication (cognitive)
- Skills are inter-dependent
- Behavioural markers are indicative, not an exhaustive list
- The focus is on individual skills

Rating Form

Skill Category	Skill Element	Behaviours Observed	Element Rating (1,2,3,4, 5 or not observed)	Category Rating (1,2,3,4, 5 or not observed)
Situation Awareness	Gathering information			
	Recognising & understanding information			
	Planning, preparing and anticipating			
Decision Making & Prioritisation	Prioritising			
	Recognising & dealing with uncertainty			
	Reviewing decisions			
Teamwork & Communication	Establishing a shared mental model			
	Demonstrating active followership			
	Patient involvement			
Self Awareness	Role awareness			
	Coping with stress			
	Speaking up			
Escalating Care	Situation Awareness			
	Decision making & prioritisation			
	Teamwork & Communication			
	Self awareness			

1. Excellent performance. Only positive behaviours observed.
2. Good performance. Positive behaviours observed but some room for improvement.
3. Acceptable performance. Mainly positive behaviours but improvement desirable.
4. Marginal performance. Lack of positive behaviours or mainly negative behaviours observed.
5. Poor performance. Only negative behaviours observed. Improvement required.

It is recognised that not all skill elements will be observed during a single session. A 'not observed' rating is therefore available.
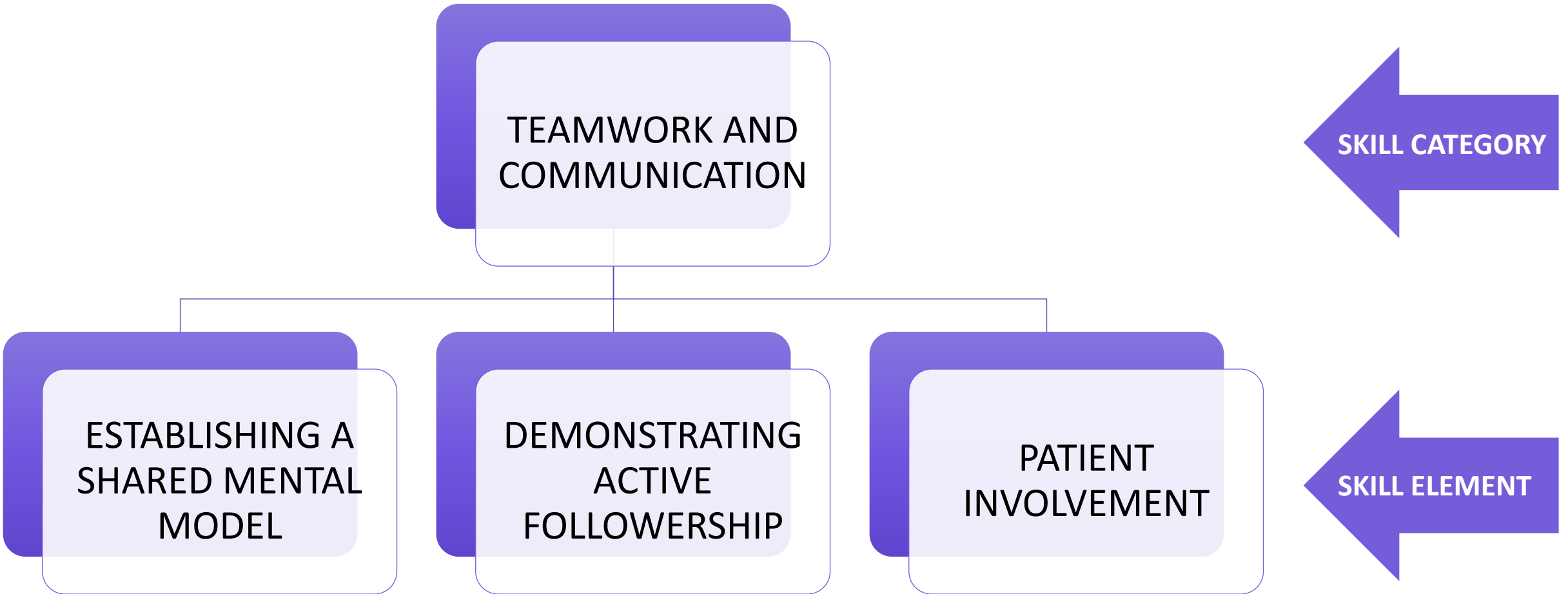
RATE EACH ELEMENT

WRITE SOME NOTES ON THE BEHAVIOURS YOU HAVE OBSERVED

OVERALL CATEGORY RATING – EITHER AS AVERAGE OR AS AN OVERALL FEELING

TEAMWORK AND COMMUNICATION

The skills required to collaboratively and adaptively work within a team environment to ensure that it functions safely and effectively to achieve a common objective, and skills required to ensure that information is conveyed and received appropriately, including both the patient and wider team members.

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graph TD
    A[TEAMWORK AND COMMUNICATION] --- B[ESTABLISHING A SHARED MENTAL MODEL]
    A --- C[DEMONSTRATING ACTIVE FOLLOWERSHIP]
    A --- D[PATIENT INVOLVEMENT]
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TEAMWORK AND COMMUNICATION ← SKILL CATEGORY

ESTABLISHING A SHARED MENTAL MODEL

DEMONSTRATING ACTIVE FOLLOWERSHIP ← SKILL ELEMENT

PATIENT INVOLVEMENT

ESTABLISHING A SHARED MENTAL MODEL

Establishes a shared mental model by explicitly delineating the perceived situation.

Does not declare a clinical emergency.

Checks understanding of team members and invites questions.

Requests tasks without assigning a specific team member.

Uses closed loop communication to verify task completion.

Requests clinical examinations or investigations without subsequently checking results.

DEMONSTRATING ACTIVE FOLLOWERSHIP*

Demonstrates initiative by undertaking tasks without prompting.

Explicitly clarifies who is leading the team.

Offers suggestions to the leader to aid with decision making and task management.

Does not take initiative to assist the leader when role is not defined.

Fails to update the leader when a clinical change has been observed.

* Not possible to observe in single person scenario or when observing the leader (use N/A)

PATIENT INVOLVEMENT

Introduces self to patient and addresses the patient by their name.

Fails to introduce self and explain role to patient.

Involves patient in decision-making, communicates decisions to patient and checks their understanding.

Performs tasks or assessments on patient with no warning or explanation.

Acknowledges patient anxiety or distress.

OVER TO YOU
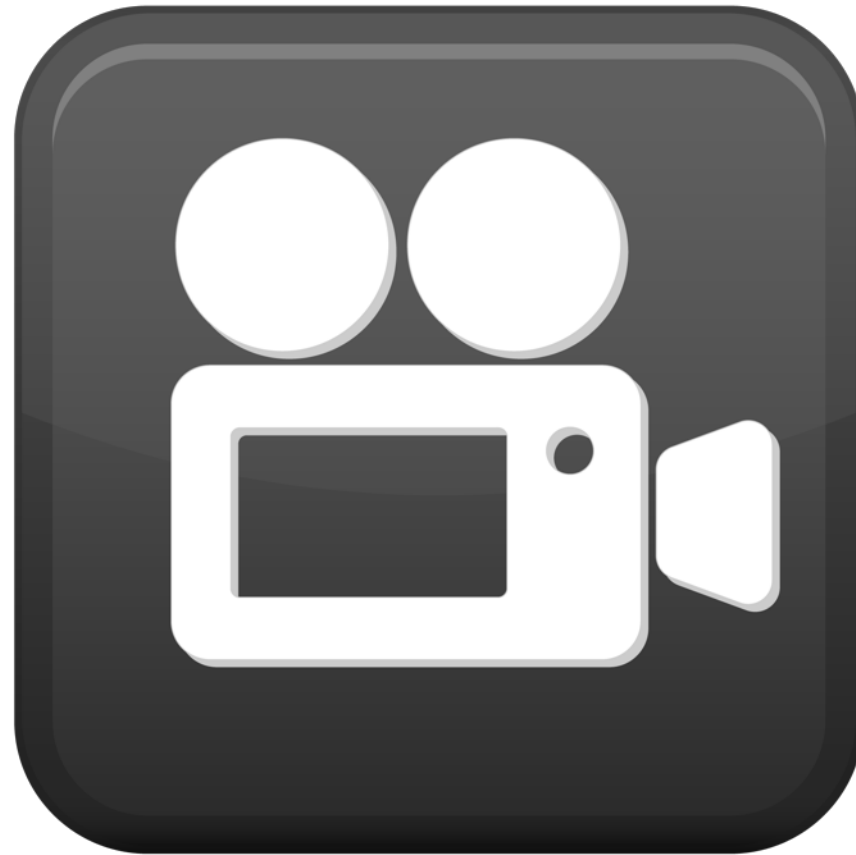
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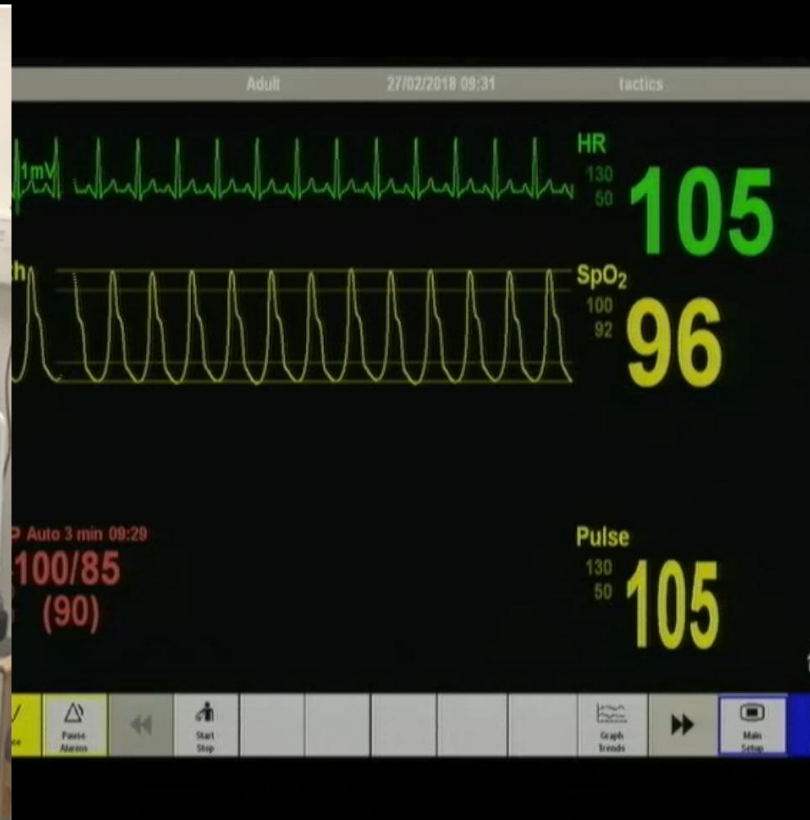
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SITUATION AWARENESS

"Knowing what is going on around you."

It includes skills required to compile information relating to the background and current clinical condition of the patient and their environment, skills required to collate and understand the information gathered, and skills required to anticipate future events based on this information.

SITUATION AWARENESS THEORY
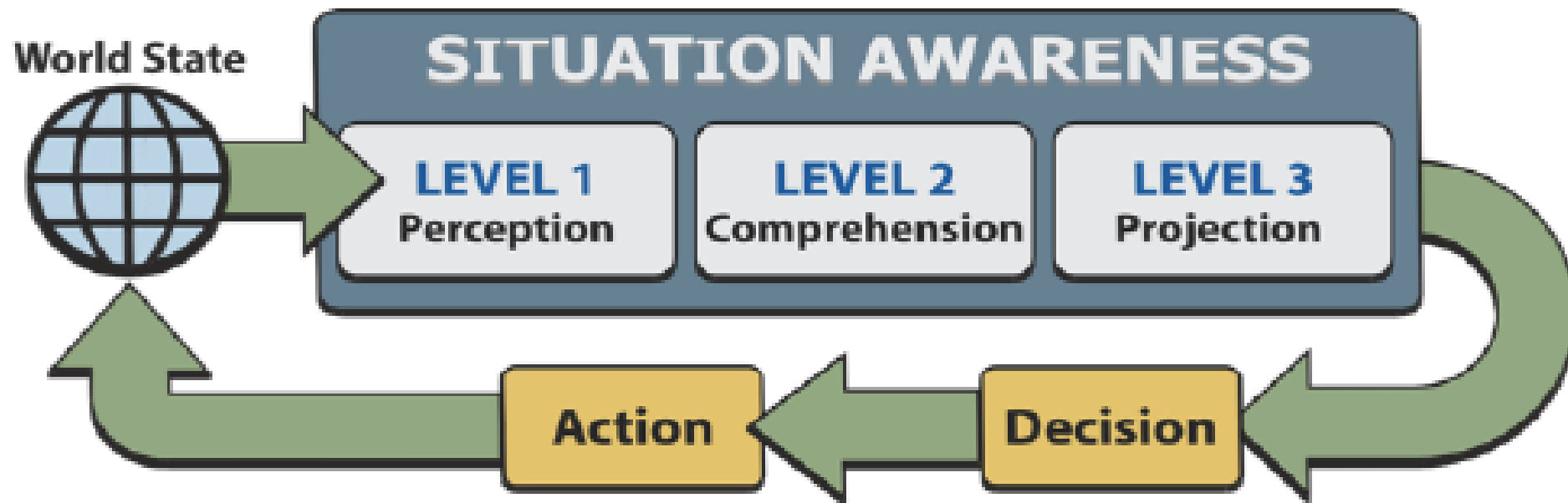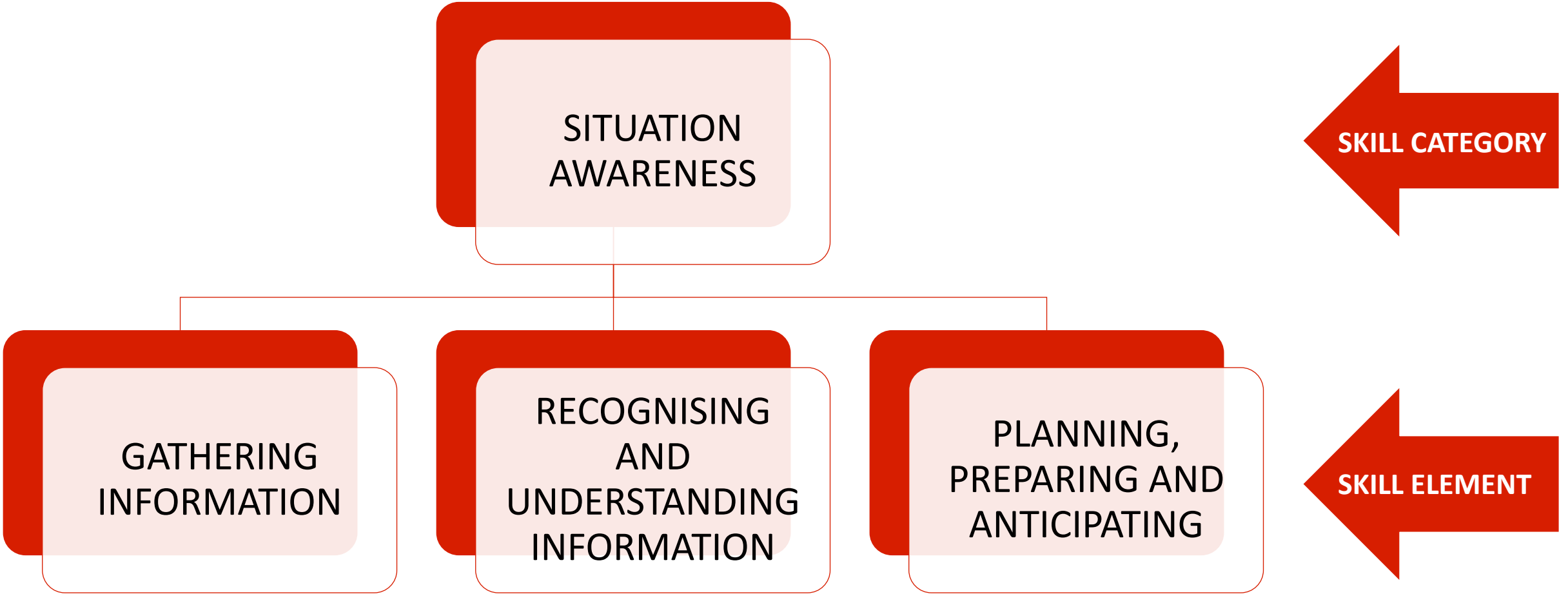
GATHERING INFORMATION

Collates information from a structured clinical assessment to inform clinical situation.

Uses patient notes to aid clinical assessment.

Seeks information relating to previously expressed wishes.

Misses important clinical information by using unstructured or disorganised approach.

Take lengthy history despite a need for urgency.

Fails to seek additional information from notes or other sources.

RECOGNISING AND UNDERSTANDING INFORMATION

Uses repeated structured assessments to identify significant change in patient's clinical condition.

Takes "time out" to summarise key findings and reflect on their significance.

Communicates clinical information in a structured format.

Unstructured re-assessment results in failure to identify clinical change.

Does not respond or responds late to changes in patient condition.

Misinterprets significance of clinical information or trends.

PLANNING, PREPARING AND ANTICIPATING

**Verbalises expected course** of clinical condition and anticipated effects of interventions.

Waits for deterioration or problem to arise before taking action.

Sources **relevant equipment** before it is required.

Emergency **equipment is not available** when required due to a lack of forward planning.
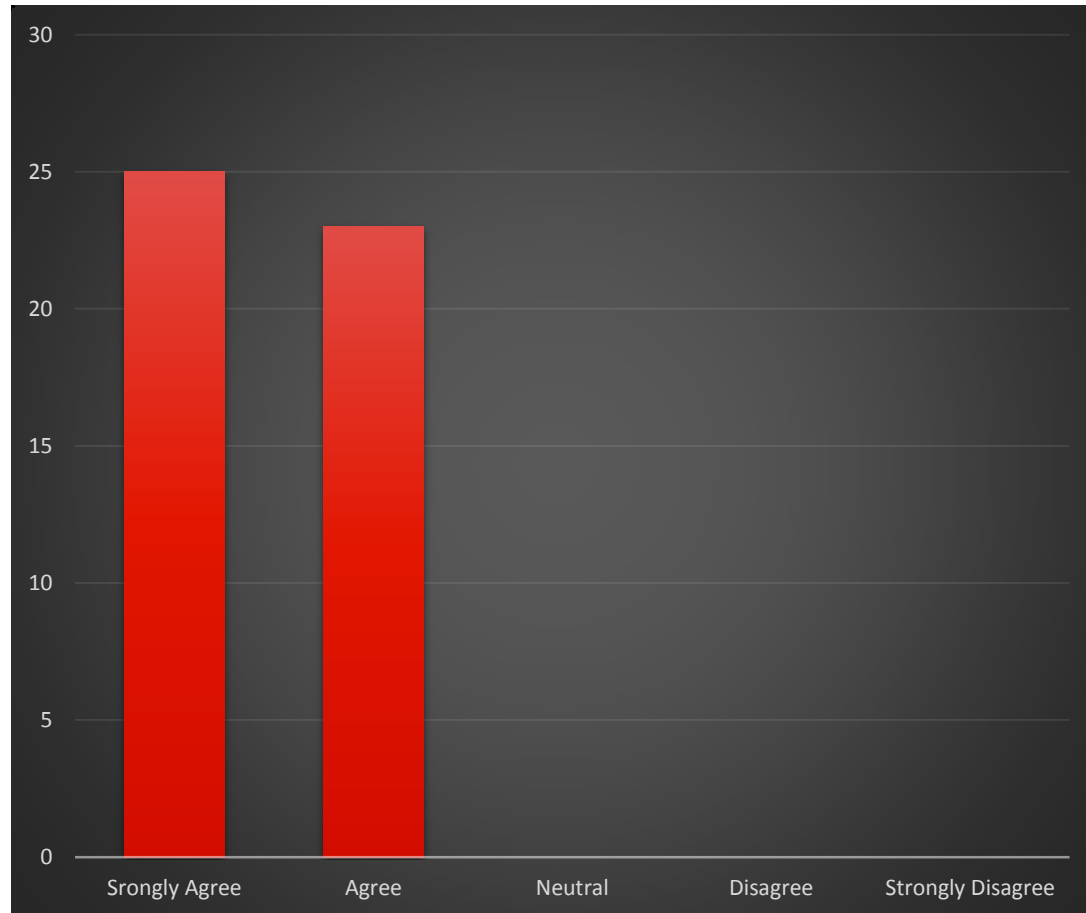
Appraises effectiveness of management plan enacted.

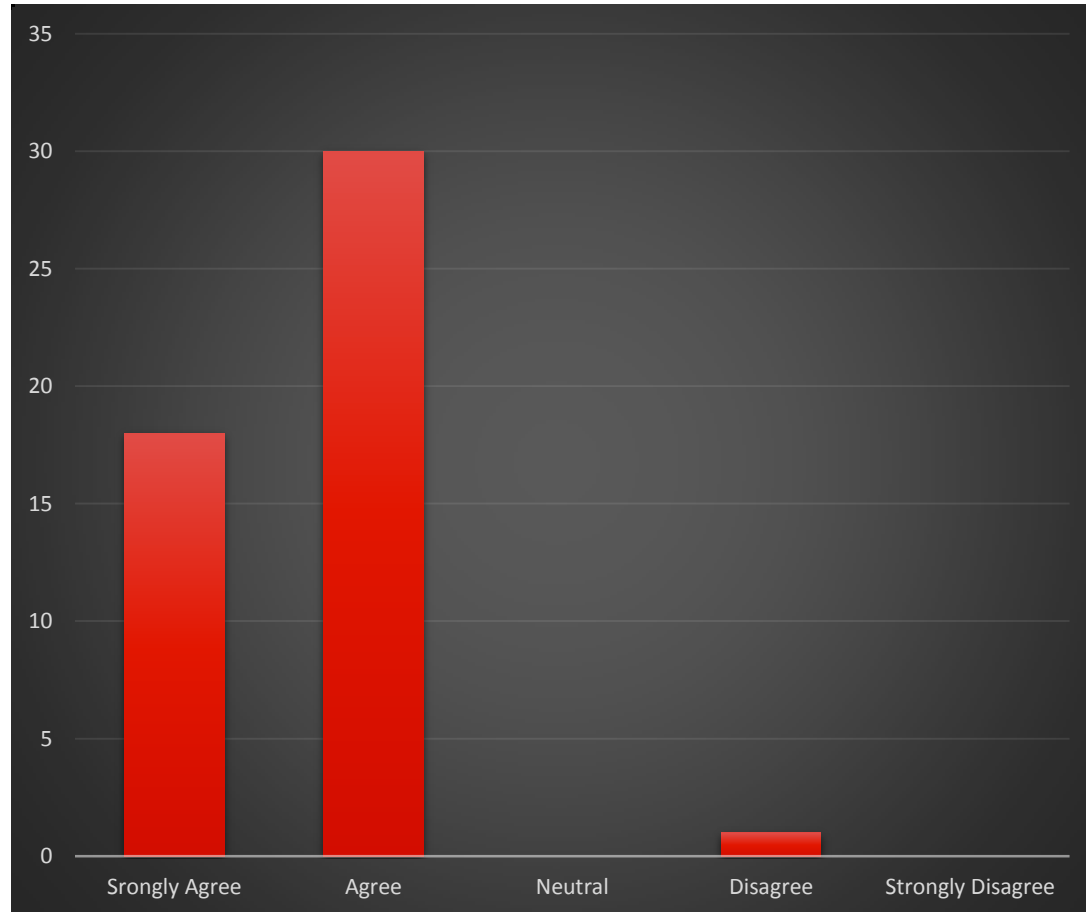# OVER TO YOU
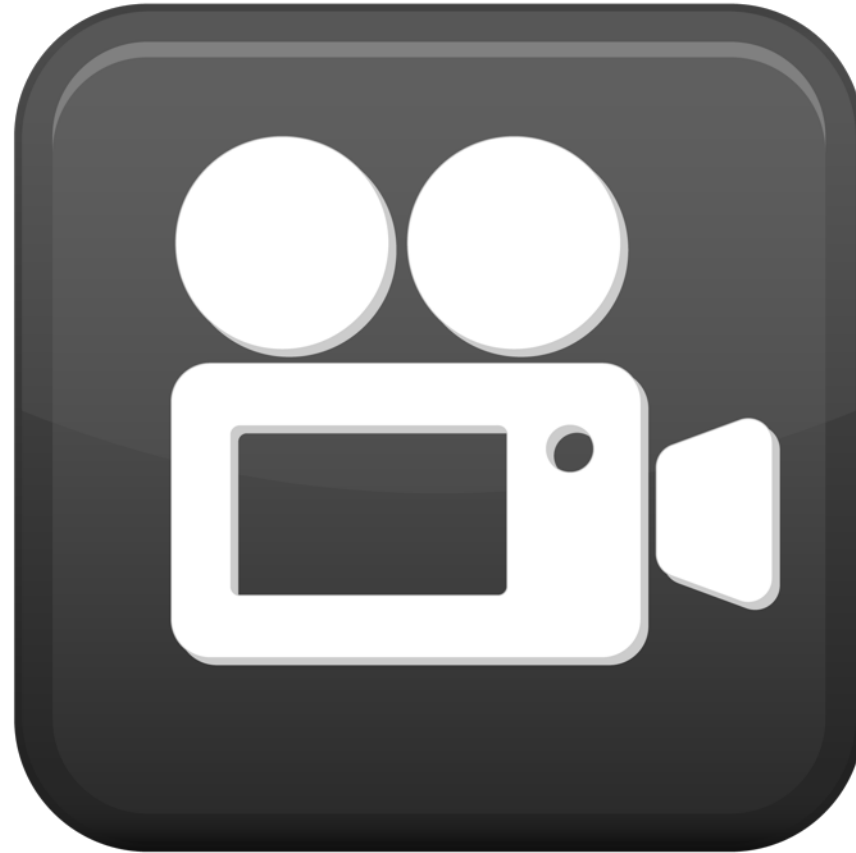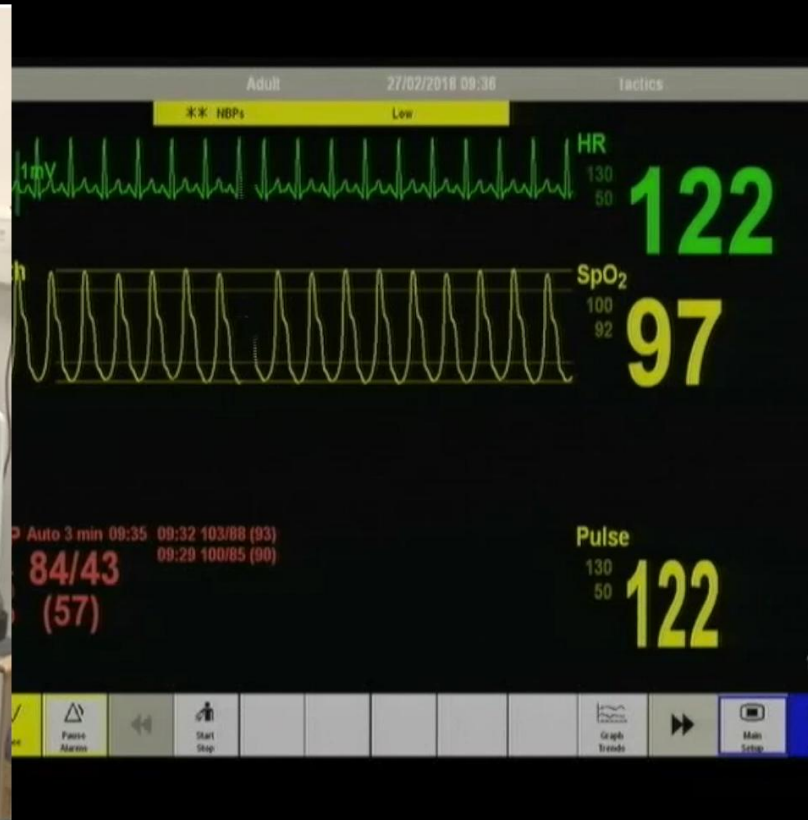
Medi-StuNTS in action

# Did using the Medi-StuNTS system help to familiarise you with non-technical skills?

- "Useful structure to make these skills explicit"

- "Only on feedback"

- "Particularly raised awareness of shared mental model"

Did using the Medi-StuNTS system help you to identify non-technical skills in the behaviours of your peers?

- "Recognised areas of feedback that wouldn't have thought of"

- "Helpful to watch peers and identify behaviours that I would like to adopt and integrate into practice"

- "Was looking out for them more so yes"

Did you find the rating scale easy to apply to the behaviours observed?
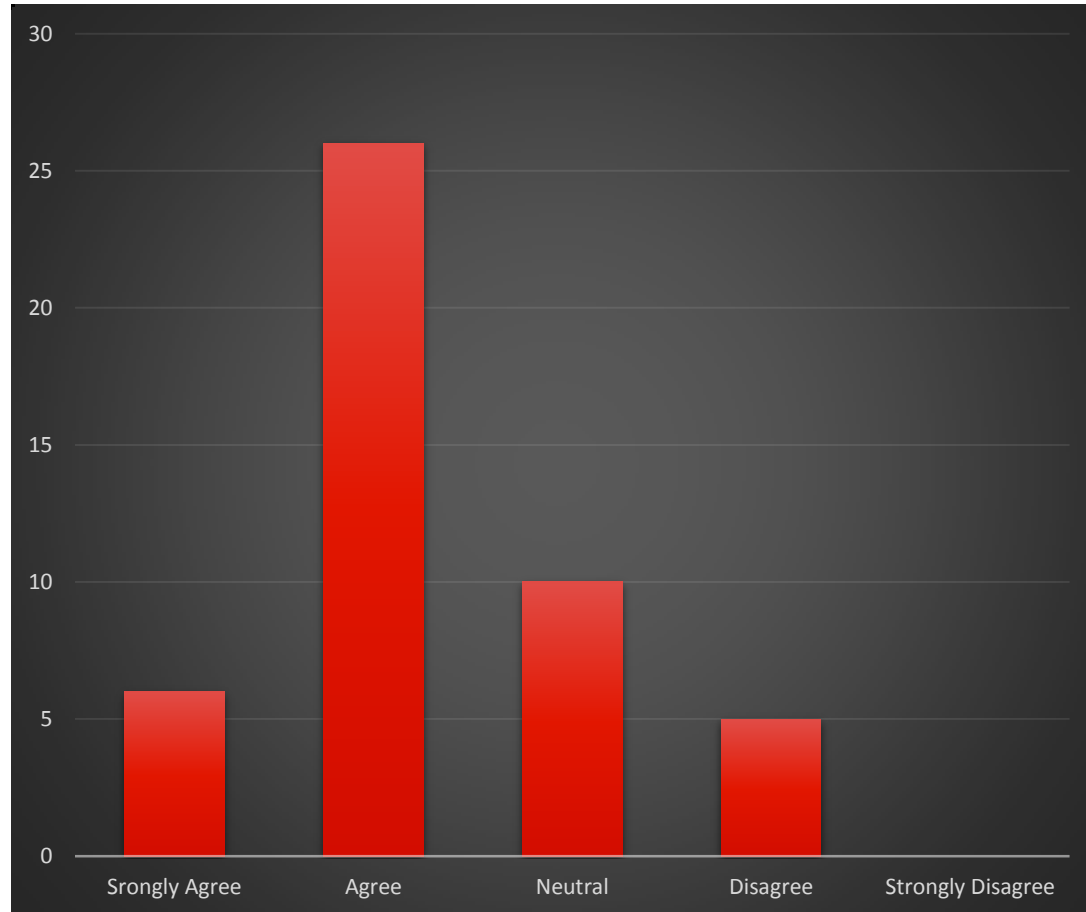
- "Difficult" to "weigh good/bad behaviours"

- "I do think it is good but students tend to score other students more generously than supervisors"

- "Maybe a scale from 1-3 would be easier"

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THANK YOU

QUESTIONS?

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