

# A clinical educator's guide to understanding and facilitating the clinical reasoning process

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An orientation tool for clinical educators in the Health  
and Rehabilitation Sciences

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# Contents

Acknowledgements.....	ii
Message from the head of department .....	iii
What is clinical reasoning?.....	1
Making thinking visible .....	4
Examples .....	7
Example 1.....	7
Problem:.....	7
Questions you can ask: .....	7
Remediation:.....	7
EXAMPLE 2: .....	7
Problem:.....	7
Questions you can ask: .....	7
Remediation:.....	7
Questions you can ask: .....	7
Remediation:.....	7
EXAMPLE 3 .....	8
Problem:.....	8
Questions you may ask .....	8
Remediation.....	8
REFERENCES .....	9

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## Message from the Head of Department

As a clinical educator, you are typically appointed based on your clinical expertise and experience. As a result, most of the crucial decisions that you make about clinical management of patients are second nature to you. However, for most students under your supervision, clinical reason skills are still developing and—in many cases—there is a disjuncture between the clinical educator’s expectations and the students’ ability in terms of clinical reasoning skills.

This guide, therefore, aims to support clinical educators with inculcating clinical reasoning skills in the students that they supervise. The fact that this is a true multidisciplinary document makes it worthy for anyone involved in clinical training of students.

*Prof. Lebogang Ramma*



# A clinical educator's guide to understanding and facilitating the clinical reasoning process

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## What is clinical reasoning?

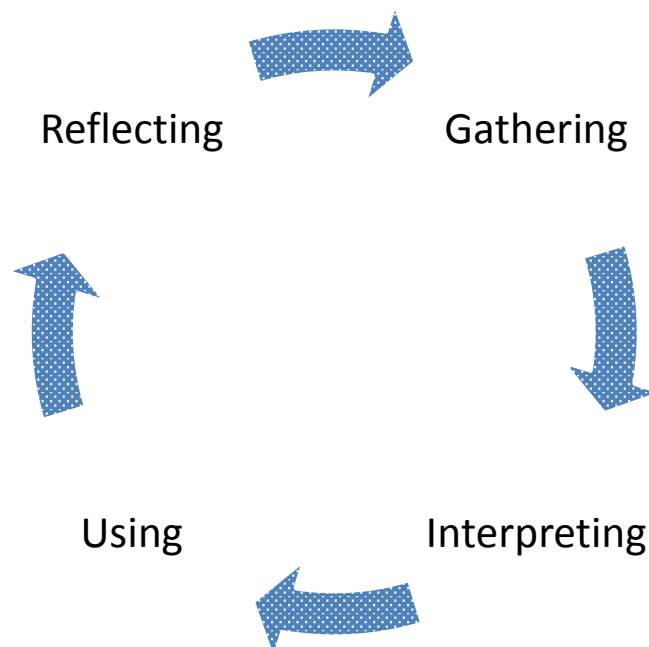
*Clinical reasoning* is the implicit decision-making process that clinicians use to make decisions and judgements about patient assessment, management, home care, and referral.

It is multifactorial, and is influenced by the therapist, the client, and the context in which the interaction occurs.

Clinical reasoning is a complex, cyclic process with many facilitating factors. These include:

- knowledge
- communication strategies
- skills
- listening
- organisation and adaptability
- reflection
- experience
- pattern recognition
- collaboration

All reasoning involves a dynamic process which evolves with each interaction between client and therapist.



Information is constantly gathered from multiple sources and cues; it is used and interpreted through a process of reflection on responses to treatment and then self-evaluation. This helps to guide decisions and enables clinicians to garner further feedback and gather more input.

Expert experienced clinicians undergo this process without thinking about where they started the process or where it led them. Occasionally, on a more complex patient, they may stop themselves and backtrack over their decisions, cuing themselves to gather more data or reinterpret information they may have previously discarded as not relevant.

Students, however, are new to practise; they cannot see or hear the cues of the patient. They need to gather lots of information and learn to extract what is relevant.

How can you help facilitate this reasoning process for them?

Firstly, how often do you think about your thinking? Take a moment to break it down. When you see a patient, what triggers your decision-making process?

This process is invisible to students—how to move from one step to another. You need to show and verbally express what you as the expert are seeing, doing, and thinking to help guide the students' own learning.

## Making thinking visible

Making your own expert thinking practices visible makes the decision-making process accessible to students. It should be consciously brought into your teaching to guide students.

This does not mean that you need to demonstrate the first case; instead, it is an approach to questioning and feedback that triggers cues in your students. It ensures that your feedback is structured and relevant.

There are four steps to making your thinking visible:

1. **ARTICULATE**: Explicitly state what thinking is needed. Think back to how you, as an expert, reached a certain decision and describe or articulate this thinking to your students.  
For example, you may have observed a certain posture or position in your patient. This made you immediately think of a functional difficulty the patient could have, or a pathology that could develop. This leads you to ask further questions linked directly to that difficulty. If the student doesn't see this, they may ask unnecessary questions before reaching the same conclusion. *Question them to guide them into seeing the link.*
2. **MAKE CONCRETE AND VISIBLE**: Identify thinking behaviours, i.e. the things that you as an expert think and say while reasoning. This could relate to how you structure your approach to assessing and managing a patient.
3. **REFINE, CHUNK AND SEQUENCE**: Refine your thinking *behaviours* into thinking *routines*. Cognitively recognise what you are thinking and doing. This can be done by dealing separately with specific areas of assessment and treatment. Reflect on your actions as a guide to proceed to next area and help decision making.
4. **ENCULTURATE**: Consciously acknowledge the thinking practice part of your teaching. Repeat and model this regularly and consistently. Encourage students to use the same routines.

This scaffolding helps students to recognise the professional clinical thinking behaviours of their profession. They are mentored into participating effectively within the clinical setting by scaffolding their clinical reasoning development.

# Educational Diagnosis

Not all students need help with the same things with respect to reasoning. Good clinical educators can pinpoint where in the reasoning process the student is going wrong and guide them appropriately.

Studies show that difficulties can arise in the following areas:

1. Gathering data and generating hypotheses
2. Refining and testing hypotheses
3. Diagnosing and developing management plans

Identifying where your student is struggling could be seen as making an “educational diagnosis” about where they need help and what remediation may be required.

Step of clinical reasoning	Prototypical difficulties	Identifying student behaviour
<b>Generating hypotheses and data gathering direction</b>	Difficulties in generating hypotheses, identifying cues, and directing data gathering	Fails to detect or appropriately select the key features or cues that should enable them to generate diagnostic hypotheses.
		Fails to generate a given number of diagnostic hypotheses to guide their reasoning.
		Fails to direct and focus their data gathering.
<b>Hypotheses refinement and hypotheses testing</b>	Premature closure	Quickly focuses on a single diagnostic hypothesis and conducts the interview superficially, or directs it exclusively according to that hypothesis.
		Passively limits themselves by failing to generate any alternative hypotheses, or actively limits themselves when they swiftly fixates on a single feature of the case.
	Difficulties in prioritizing	Prioritizes the patient’s problems inadequately, e.g. when there are several complaints and fails to focus the interview on the case’s most important aspects.
		Inappropriately chooses when to ascribe significance to cues or data obtained during the course of the encounter.
<b>Final diagnosis or problem labelling and management plan development</b>	Difficulties in painting an overall picture of the clinical situation	Fails connect different pieces of information.

		Fails to integrate the patient's perspective and contextual factors.
	Difficulties elaborating a management plan	Displays an unsatisfactory process of integration; synthesis of the whole reasoning process is unsatisfactory, leading student to propose inadequate management plans.

*Table adapted from: Audétat, Marie Claude, Laurin Suzanne, Sanche Gilbert, Béique Caroline; Caire-Fon Nathalie; Blais Jean-Guy; Charlin Bernard. Clinical Reasoning difficulties: A taxonomy for clinical teachers ( WEBPAPER) Medical Teacher 2013;35; e*

# Examples

## Example 1

### Problem:

The student is struggling to gather and cohesively assemble information regarding a case. Facts are haphazardly presented without recognition of the key features.

### Questions you can ask:

- What cues have you identified and used in this session?
- What were your initial thoughts when the patient told you about his problem?
- When you observed x and heard the patient say “y”, what did it lead you to think of?

### Remediation:

- Together with the student, retrace the steps they took. Explicitly talk through how one fact could have linked to another.
- Discuss your own reasoning and thoughts on the hypothesis, but remember to state why you have reached this conclusion. This emphasises your thinking routines.
- Possibly use other case studies seen by the student to illustrate the same points.

## EXAMPLE 2:

### Problem:

Your student reaches a conclusion too quickly; the student does not see any differential diagnosis, does not look at the situation holistically, and is unable to prioritise the main issues.

### Questions you can ask:

- Can you explain how you reached this conclusion?
- What information did you look for and use?

### Remediation:

- Ask the student to summarise available information and provide a rationale for their conclusions. Let them reflect on what may have been missing which may have assisted in reaching an additional conclusion.
- The student may need to review theory to compare and contrast similar disorders.

### Questions you can ask:

- Why do you think this is the most important problem?
- Explain to me what the patient wanted to achieve?

### Remediation:

- Discuss your thoughts on the priority for the patient.
- Consider and discuss how changing the priority could have altered the assessment and treatment protocol.

- Reflect on different factors that guided your conclusions.

### EXAMPLE 3

#### Problem:

The student does not provide a holistic and comprehensive approach to management.

Treatment does not consider context or relate to the patient's needs.

#### Questions you may ask

- How did you decide on this treatment and what factors impacted on your treatment choices?
- How are you monitoring the effectiveness of your intervention or treatment?
- What options will you consider if the patient does not improve?

#### Remediation

- Discuss how you would consider all the options to draw a management plan in collaboration with the client and care givers.
- Let the student reflect on the specifics of the situation for this client, while drawing on protocols learnt from other cases.

## REFERENCES

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