

# Fostering Metacognition in Higher Education.

## Exploring how do we do it well?

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Figure 1. Sample comments I usually receive from students

### INTRODUCTION & AIM

#### What is metacognition?

- One's awareness about the self's thought processes or *thinking about thinking* (Flavell, 1976; see Figure 3). Tanner (2012) suggests there are overlap between **metacognitive learning** and **self-regulated learning** (Tanner, 2012; see Figure 2). The process of planning, monitoring and evaluating can be applied within the context of higher education learning.

#### How is this relevant to higher education?

- Support students to guide and enhance active learning abilities without being over reliant on external environment such as instructors or coursework feedback to progress. Bransford, Brown and Cocking (2000) suggested meta-cognitive skills allows students to be aware of their strength, weaknesses, limitation of their knowledge and think of action plans to extend their knowledge and ability.

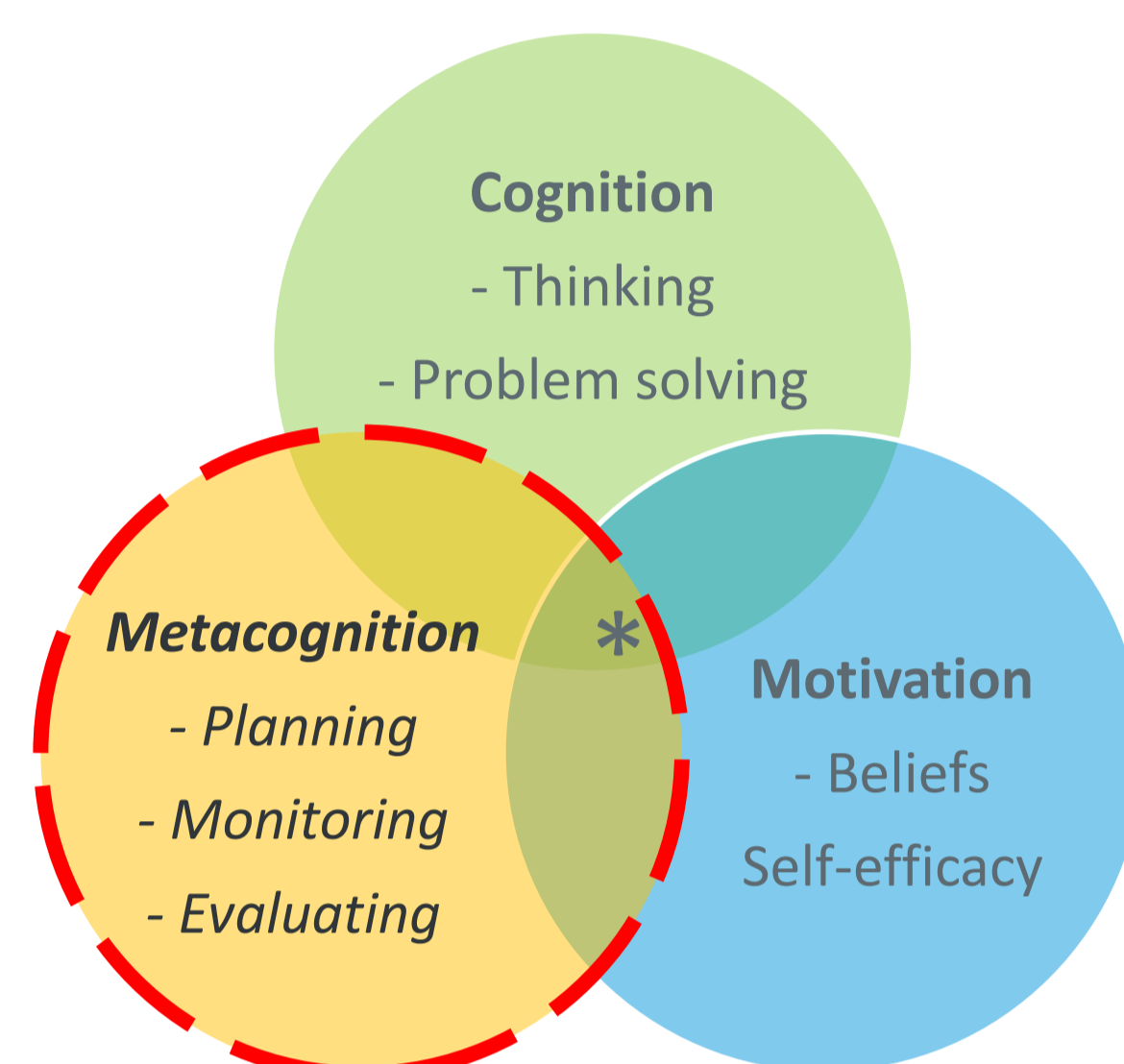


Figure 2: Components within \*self-regulated learning. Metacognition is one of the components that can be applied in enhancing students' skills

#### Aim of project:

- During the remote online learning as a result of COVID-19 pandemic, our teaching aimed to provide students to navigate their studies by enhancing their metacognition skills.
- The current project compares the practice with existing literature to explore ways to enhance use of metacognition skills in students. The importance of answering this question helps shift teaching practices from an instructor-centred approach to a learner-centred approach.



Figure 3: Illustration of thinking about thinking

### METHODS

This is a case study approach. The following steps were taken to further explore the metacognition in the literature and our practice (See Figure 4).

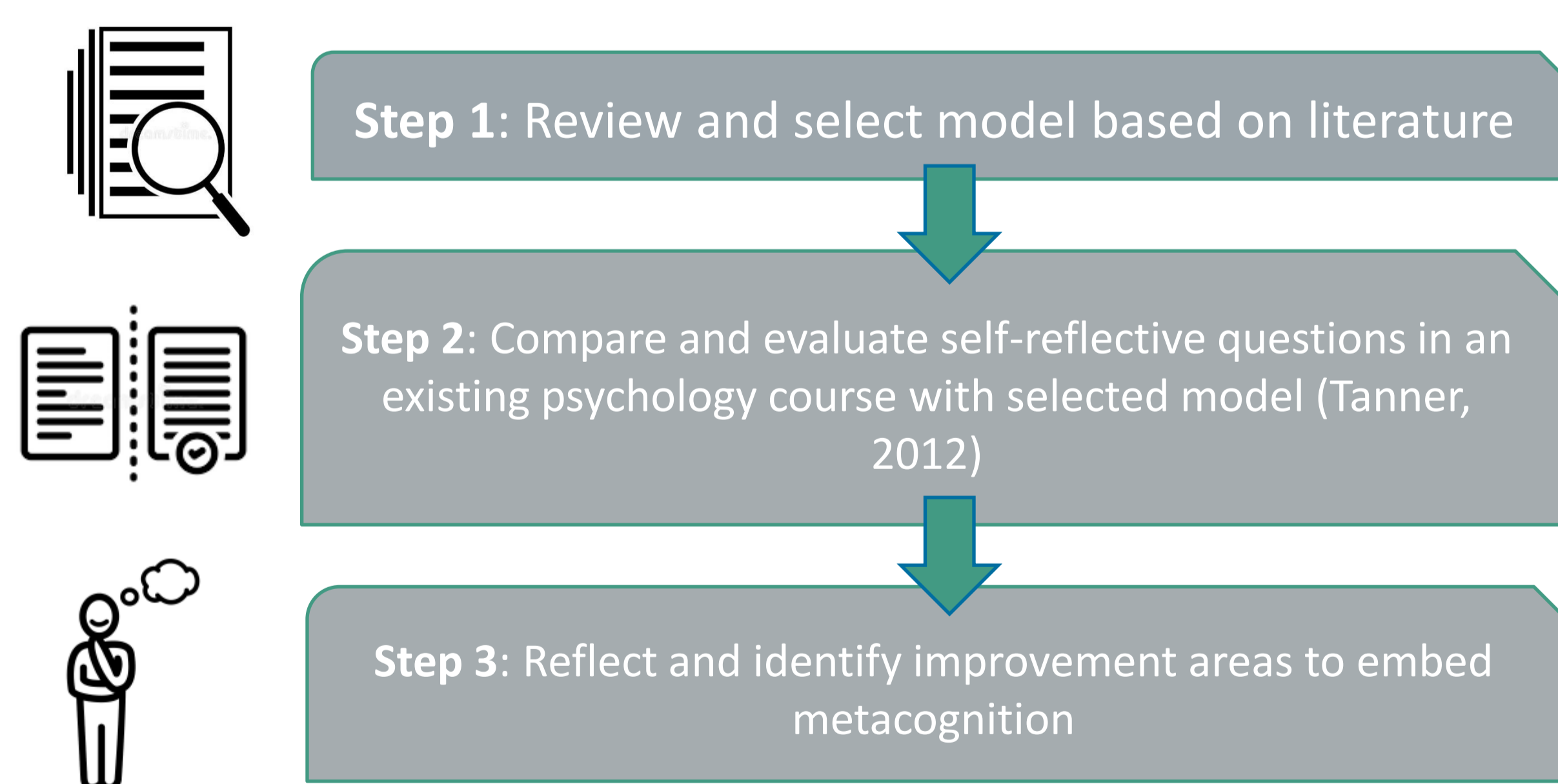


Figure 4: Shows overall process of evaluation of metacognitive study strategies

### ACKNOWLEDGEMENTS

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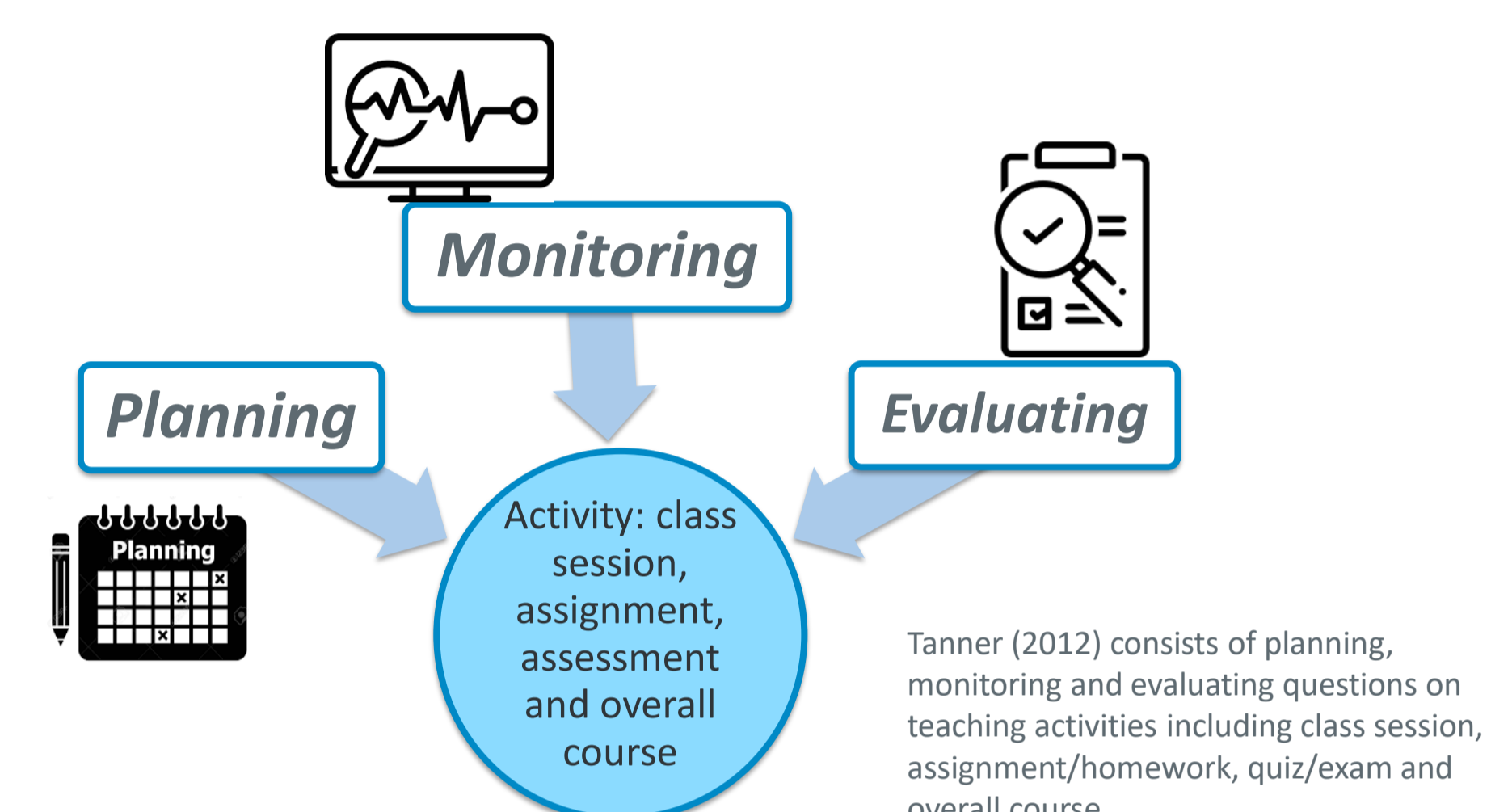
Thank you for your questions and discussion, I can be reached at [w.poh@hw.ac.uk](mailto:w.poh@hw.ac.uk)

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### RESULTS & DISCUSSION

#### Outcome 1: Review and select metacognitive model

A comparison between Tanner (2012), Schraw (1998) and Chick et al (2009) metacognitive study strategies were compared. Tanner (2012) was selected as it fit the comparison with current course.



#### Outcome 2: Compare and evaluate self-reflective questions in an existing psychology course with selected model (Tanner, 2012)

Activity	Tanner (2012)	Current course
Class session	<b>Planning:</b> What are the goals of the class session going to be? <b>Monitoring:</b> What insights am I having as I experience this class session? What confusion? <b>Evaluation:</b> What was today's class session about?	<i>Before lecture:</i> Blow up a balloon, reflect how this relates to personality <i>After lecture:</i> What do these terms mean to you?
Assignment/homework	<b>Planning:</b> What is instructor's goal in having me do this task? <b>Monitoring:</b> What strategies am I using that are working well or not working well to help me learn? <b>Evaluation:</b> To what extent did I successfully accomplish the goals of the task?	Does the (coursework) poster have a clear narrative? ( <i>planning/monitoring</i> ); Have I included all the relevant measures in the method? ( <i>evaluative</i> )

Table 1 shows comparison between metacognitive strategies developed by Tanner (2012) and current course. Tanner showed a consistent and coherent questions, whereas the current course activities were not as structured. A full comparison is on the briefing sheet.

#### Outcome 3: Reflect and identify improvement areas

##### • Direct comparison is a challenge

The current course offers a variety of study strategies to support metacognition skills, it was a challenge to match them with Tanner's model (planning, monitoring and evaluation activity).

##### • Consistent narrative and structure to support engagement

The current course study strategies were developed by different instructors which led to inconsistencies (e.g., some questions/guidance are implicit while some points don't support metacognition). Students may find it confusing and do not see the benefit of engaging with the strategies. Secondly, the structure of study strategies varied, some weeks heavily focused on evaluation of topics, some weeks didn't have any questions, exam guidance was a summary of topics without any questions assess students' understanding of the course.

### FUTURE DEVELOPMENT

##### • Reflecting with students: Creating a class

Explicit discussion on meta-cognition strategies in classroom helps students develop a language to talk about their own cognition and learning (Pintrich, 2002). A recommendation is to allow some class time introducing, checking in and reflecting with students, allowing students to address their confusion and to identify the benefits of the strategy. For example, did answering the questions made improved their belief and self-efficacy that helps them to be self-regulated learners? (See Figure 2)



##### • Creating questions/guidance with students

Study strategies developed were prescriptive and not much feedback was received from students about the usefulness of the study strategies. A recommendation is to work with students to understand, from a student's perspective which questions/guidance/strategy was useful for them or how would they improve them so they can take ownership of their own learning

