Cognition, Metacognition, and Self-Regulated Learning

CETL Workshop

10/6/22

Definitions, Distinctions, and Context

What does each concept mean?

What do we typically focus on when we teach?

Are these alternative- or complimentary foci?

Why does each matter?

How can we make them matter?

Why it matters

At this stage of their development, many students haven't (yet) had the opportunity to think about their thinking and learn about their learning. They just….."do".
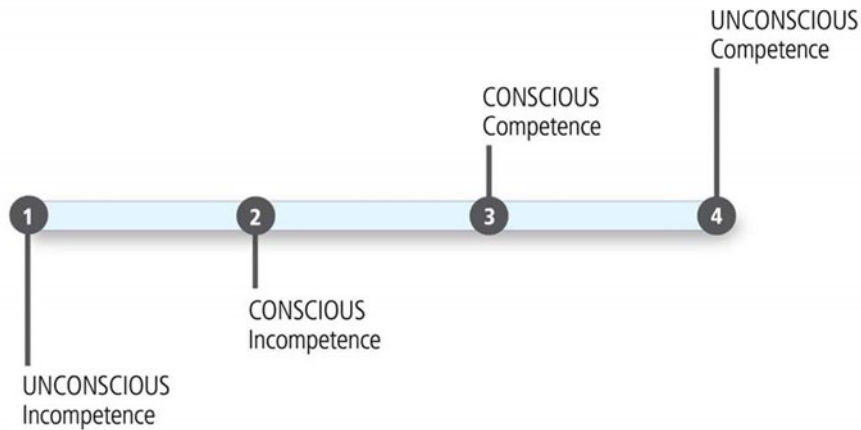
Further: "*…research on younger undergraduate students reveals [that] students take little or no responsibility for their own learning, blaming their shortcomings in achievement on their 'ineffective' instruction and the 'too advanced' or irrelevant course… Reinforcing their avoidance of responsibility for their learning is their widespread belief that learning should not require effort*"

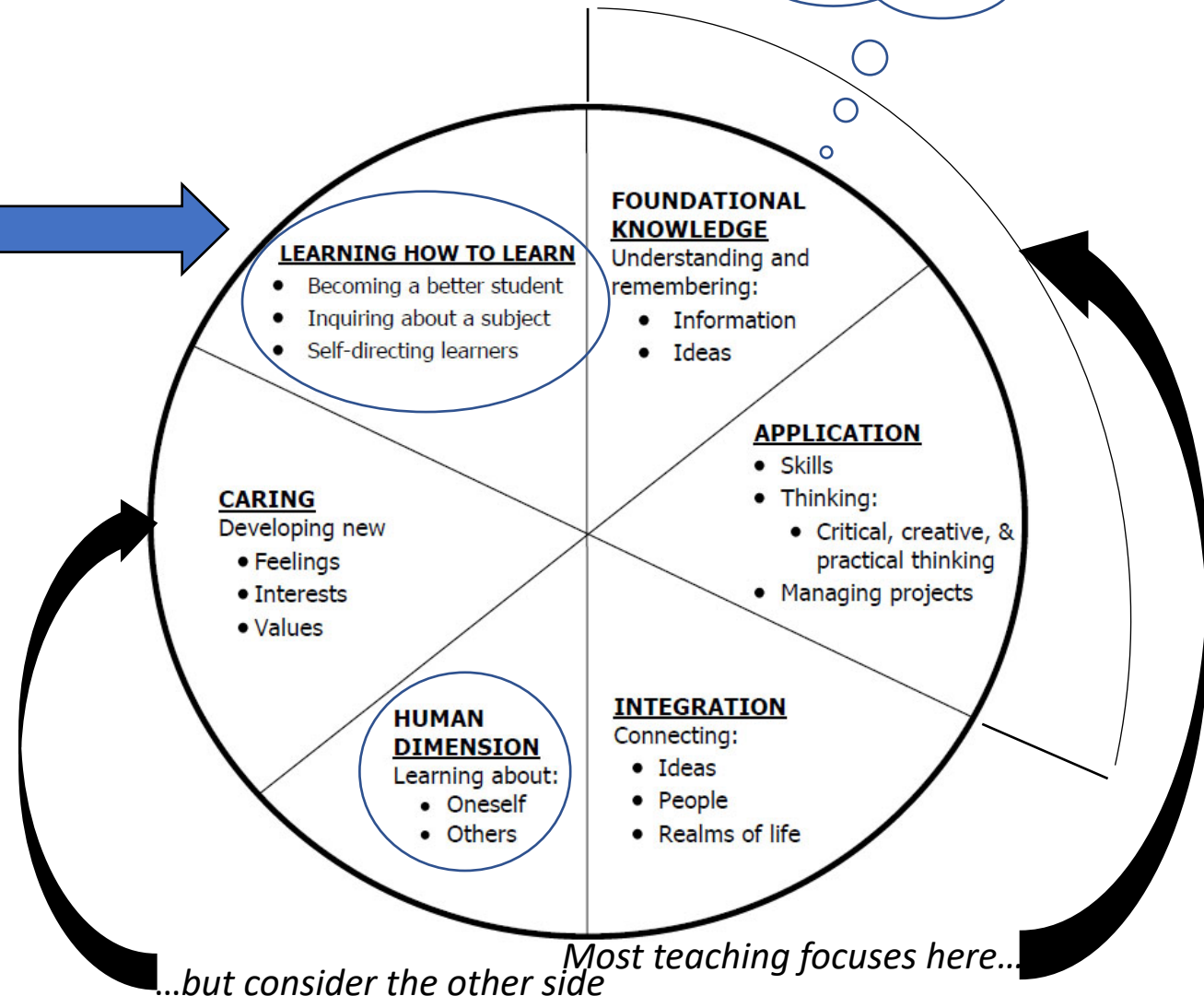--Linda Nilson, *Creating Self-Regulated Learners*

What we're used to
What we're not

The Development of Expertise

UNCONSCIOUS
Competence

CONSCIOUS
Competence

① ② ③ ④

CONSCIOUS
Incompetence

UNCONSCIOUS
Incompetence

Ambrose, S., Bridges, M., DiPietro, M., Lovett, M., and Norman, M. "How Learning Works: Seven Research-Based Principles for Smart Teaching." San Francisco: Jossey-Bass, 2010.

LEARNING HOW TO LEARN
- Becoming a better student
- Inquiring about a subject
- Self-directing learners

FOUNDATIONAL KNOWLEDGE
Understanding and remembering:
- Information
- Ideas

APPLICATION
- Skills
- Thinking:
  - Critical, creative, & practical thinking
- Managing projects

CARING
Developing new
- Feelings
- Interests
- Values

HUMAN DIMENSION
Learning about:
- Oneself
- Others

INTEGRATION
Connecting:
- Ideas
- People
- Realms of life

Most teaching focuses here...

...but consider the other side

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The Key? Critical Reflection

- Critical Reflection is the "active, persistent and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it, and the further conclusions to which it tends".

- It involves "thinking about our thinking" (Dewey, *How we Think).*

- *Do you let your students do this??*

Linking Critical Reflection, Metacognition, and Self-Regulated Learning

Conscious control over one's cognitive processes
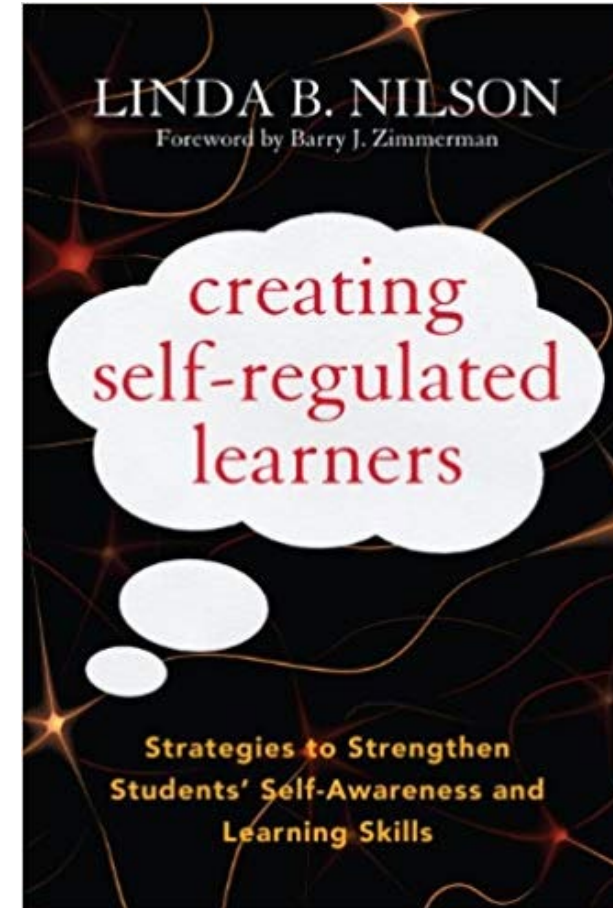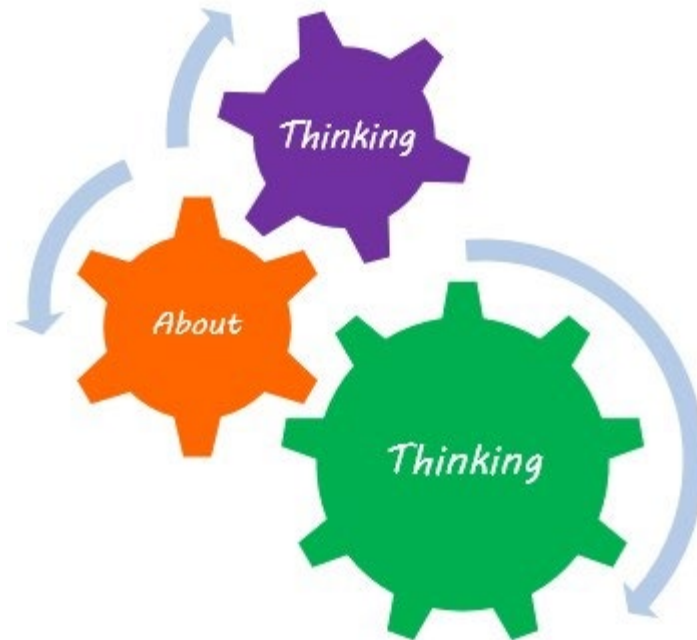
The monitoring and managing of one's cognitive processes as well as the awareness of and control over one's emotions, motivations, behaviors, and environment as related to learning.

What Can I do? General Advice

Get students to understand how they approach their work –ask them to think about it!

Give them a chance to do something with your feedback…and their own. Fold it into graded work!

Ask your students to write down the things they know or fear might have an impact on their academic performance.

If you teach a class that has a reputation for being particularly hard, has a high DFW rate, is way larger than it should be, etc: talk about it and what you –and they– can do to increase the odds of success.

Remember: We have a diverse learner population. Many are learning unfamiliar topics in unfamiliar ways. It is easy for them to become overwhelmed and shut down or withdraw. There are things going on in their lives that we don't know about. They're human. So are we. We can help them learn the value of managing their time, emotions, distractions, and well-being.

What Every Student Should Do:
4 (Student) Steps to Self-Regulated Learning

Step 1: Make a plan	Step 2: Monitor performance	Step 3: Reflect on performance	Step 4: Use results to improve their process
• Identify goals; • Map out a strategy and timeline to accomplish them; • Identify potential obstacles –self-awareness is critical!– and how to address/overcome them.	• "Today I will___"; • "Today I did (or did not) ____" • "When I _____, I _____" • "An option might be to ____"	• Students must reflect on their work and final product –what they did, how they did it, how well they did (the grade), and how well their plan and strategies worked. • They must think outside the box of "it is not written well enough" or "well, I did my best" and "I guess I bombed that one!" Think about why…	

What else?
Easy to Use Activities and Assignments

"Chunk" information	Think-Pair-Share	Reading & discussion reflections	Ticket out the door
Quick writes	Wrappers	Learning Journals	Simulations

DEAL with it

SCHEMATIC OVERVIEW OF THE **DEAL** MODEL FOR CRITICAL REFLECTION

D	E	AL
DESCRIBE the learning experience. Think: • What? • Where? • Who? • When? • Why	EXAMINE the experience through the lens of academic concepts, theories, or strategies EG: Culturally Responsive Pedagogy, UDL, Course Learning Goals	ARTICULATE LEARNING by discussing and explaining what you learned, when you learned it, how you learned it and why it is important –to you and the field!-- and what you can/will do differently because of it.

Consider Using this Cognitive (and Non-Cognitive) Wrapper Template

COGNITIVE WRAPPERS TEMPLATE

This template was designed to help students better understand their own learning –what's working, what's not, and why…and what they/we can do about it.

Note that it emphasizes REFLECTION, FEEDBACK, and ADJUSTMENTS

REFLECTION

1. **How much total time** did you spend preparing for/working on this assignment or project?
2. **When** did you prepare for/work on it? How did you spread out your preparation? USE TIME LINE TOOL: https://timeline.knightlab.com/. Can be used for collaborative projects.
3. Did you make time for thinking and reflecting? If so, when, how much, and what breakthroughs? Remember the 5 day rule.
4. **How** did you prepare?
5. How much time was spent:
   a. Conducting research? ____
      i. Did you work with a librarian? ____
   b. Reading course material ____
   c. Re-reading course material ____
   d. Working independently ____
   e. Working in groups ____
   f. Pausing ____
   g. Thinking ____
   h. Reflecting ____
   i. Note taking ____
   j. Drafting ____
   k. Editing ____
   l. Problem solving ____
   m. Memorizing ____
   n. Brainstorming ____
   o. Practicing ____
   p. Other_____ ____

USING FEEDBACK

- First, *GIVE GOOD FEEDBACK*.
- This can come in a variety of forms –what do you do?
- It can come from other sources, like their peers.

Based on the feedback,

- What went well/what's working?
- What went wrong/what kind of mistakes did you make?
- When you review the feedback, do you think that you lost points because of:
- Trouble understanding the instructions/assignment? (Lack of clarity or direction/misunderstanding; unclear expectations)
- Trouble understanding concepts
- Trouble understanding or remembering processes or techniques
- Misapplication of techniques? (doing the wrong thing the right way)
- Carelessness
- Lack of preparation in class or on your own
- Time limits/management/not enough time given (explain)
- Frustration / anxiety
- Trouble with format / assignment type (eg, writing, problem solving, collaborative, performative)
- Other?

ADJUSTMENTS

1. Name at least three things you can/will do differently next time.
2. Assess if these changes work.
3. What will help you learn or demonstrate your knowledge or ability most effectively?
4. Propose alternative formats?