

There is no critical thinking w/o
critical reflection

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Starters

- ❖ Explicit vs Implicit CT teaching
- ❖ Assumptions, yours and theirs
- ❖ Changing the narrative of your class
- ❖ Start the journey

A moment of reflection

“We do not learn from experience.... We learn from reflecting on experience”

-John Dewey

Dewey, J. (1933). How We Think: A Restatement of the Relation of Reflective Thinking to the Educative Process.

Champion of learner centered approach: the educator's fundamental role is to train students to think better.

The promise of reflection

- * Reflection allows students to examine their beliefs, values, experiences and assumptions about the subject matter.
- * They can place their experiences in the right context so it can be extended to meeting academic and future professional goals.
- * They can move beyond recalling facts to becoming connected learners that actively and critically analyze knowledge in different environments.

My learning environment

Using the **traditional** method, the instructor:

- covered topics by lecturing on general principles,
- used the principles to derive mathematical models,
- showed applications of the models,
- assigned practice in similar derivations and applications in homework,
- tested my ability to do the same stuff on exams,
- and **assumed that made me a better thinker.**

It emphasized the objective

- * Subjectivity was not a valued member of this teaching approach.
- * This is how I thought I should teach.
- * The subjective could not be assessed, so why bother?

Where that got me

After 20 years of the traditional method, I finally figured out I had an opportunity to learn more from my students than what I was teaching them.

It allowed me to change the dynamic from the traditional “I am giving you the gift of knowledge, so don’t mess it up” to “I know a few things, and so do you, so let’s find a different way to make this work.”

You may have heard this

- * Don't be the **sage on the stage** (SOTS), be the **guide on the side**.
- * The problem with the SOTS position is that it drastically reduces opportunities for students to assume and develop **authority**. In other words, they are passive learners, and as such, do not take responsibility for increasing their role in the classroom.

Be student centered

- * A lecture heavy approach perpetuates the sage-on-the-stage mentality and diminishes the guide-on-the-side approach.
- * It maintains an instructor-centered focus instead of a student-centered one.
- * By depriving your students the time to reflect upon the content being presented and to correlate important concepts with prior knowledge, **opportunities for long term retention and comprehension are missed.**

The role of reflection

- * During reflection, students instinctively apply prior knowledge to the course content. This is what they know.
- * Prior knowledge is used to process and make sense of new observations **before** it can become knowledge.
- * By encouraging and cultivating a learning environment that respects and honors their experiential knowledge, they begin to feel a deeper connection to the class , the instructor, and the course content.

Prior knowledge

Students come into your course with knowledge gained in other courses and through daily life. This knowledge consists of facts, concepts, models, perceptions, beliefs, values, and attitudes.

Some of this knowledge is accurate and appropriate for the context, but some of it might be inaccurate, insufficient for the course goals, or inappropriate for the context.

What if their prior knowledge is wrong/inadequate/incomplete?

- * There is nothing you can do about a student's prior knowledge.
- * We need to create an environment where the students can feel “safe” in that their prior knowledge is not judged as right or wrong, but as starting places to learn new content and ways of knowing.

How it is supposed to work

Ideally, students apply accurate prior knowledge to bridge that gap between **previously acquired** knowledge and **new** knowledge to construct more complex and robust knowledge structures.

However, students may not instantly (or ever) make connections to relevant prior knowledge if the current learning conditions are not *appropriate*.

Nurture the learner

- * Engage the students and create a dialogue where they can openly express their assumptions and worldview.
- * Model being open to other points of view.
- * Exhibit humility and fairness.
- * Make it OK not to know. When you do that, you change the dynamic, and deeper learning is possible.

Make it OK not to know?

- * WTF, right?
- * Yes, make it OK that they are not expected to know everything. Open the door.
- * This will require effort on your part. This is the challenge.
- * And you thought you only had to present content.

Create compelling reasons to modify their prior knowledge

- * Focus on their inherent curiosity.
- * De-emphasize the objective. In that model there is only one correct answer.
- * Question their understanding from a position of **curiosity** instead of a position of **authority**.

Subjective reflections

- * Subjective reflections offer students the opportunity to examine their:

- * beliefs,

- * values,

- * experiences, and

- * assumptions

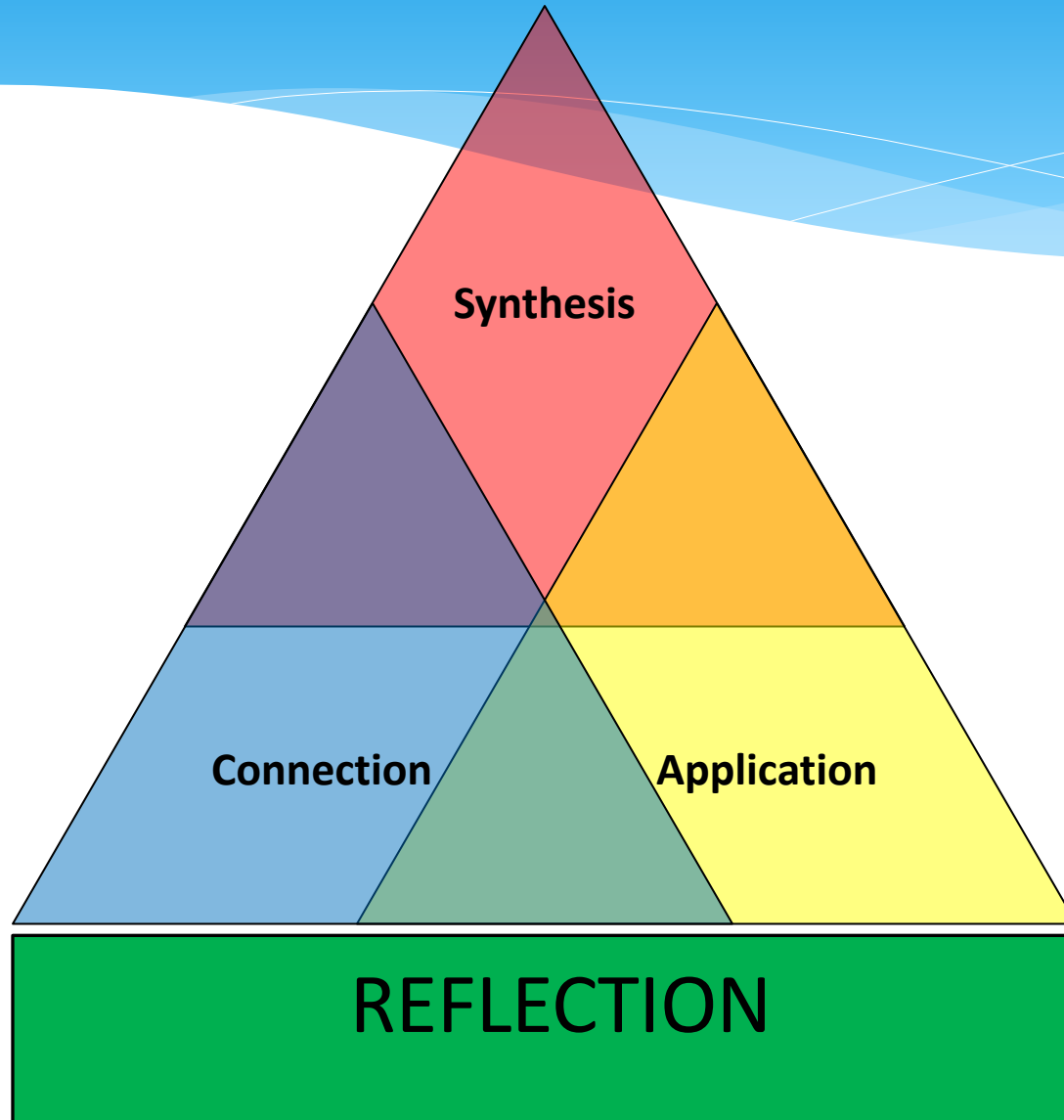
about the stuff you want them to learn (i. e., the learning outcomes).

Integrative learning analogy

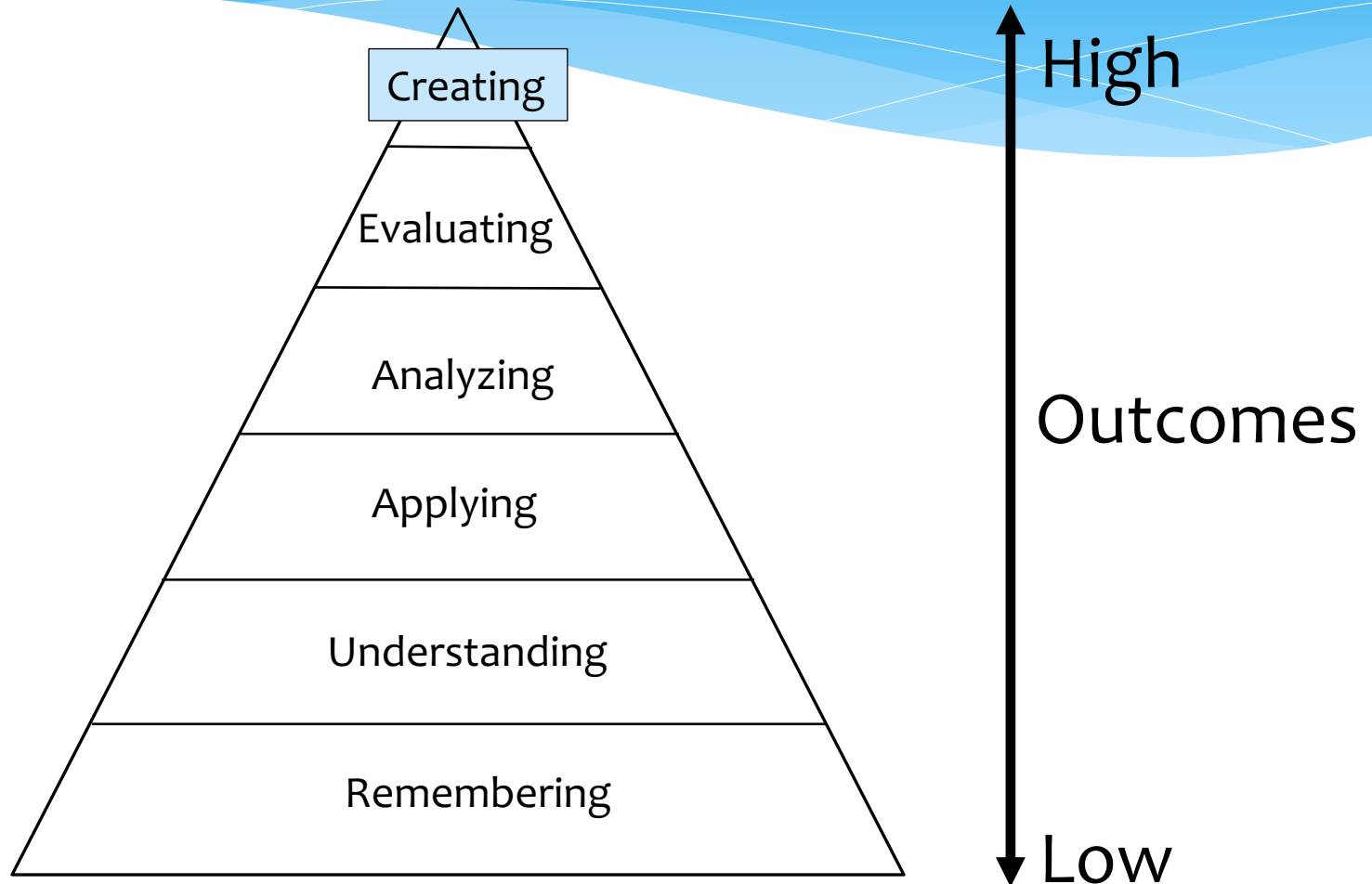
In an integrative learning environment, the learner brings together prior knowledge and experiences to support new knowledge and experiences.

By doing this, learners draw on their skills and apply them to new experiences at a more complex level.

From Barber, Jim (2021) Facilitating and Assessing the Integration of Learning,
AAC&U Conference on GenEd, Pedagogy, and Assessment, February 12, 2021



Based on Bloom's Taxonomy



The logic of Blooms

- * How do you know anything? How can you be sure you know anything?
- * The steps:
 - * 1. You remember the details and logic
 - * 2. You understand it enough to be able to explain it
 - * 3. You can apply that understanding to similar topics
 - * 4. You can objectively analyze the knowledge/topic
 - * 5. You can use this knowledge as the basis for evaluating the claims of others
 - * 6. You create new “stuff” based on that knowledge

Critical thinking link

Most instructors assume that critical thinking will flow naturally from a content emphasis learning environment. This is the implicit method.

Metacognition requires time and effort. This is how reflection enables the critical thinking (CT) process.

By encouraging reflection through low stakes assignments, students cultivate CT skills that can be extended to other domains.

Critical reflection?

An extension of critical thinking is the act of critical reflection.

Ideally, this is a “deep” **analysis** and **evaluation** of your experiences as new knowledge is introduced and tried out.

This is where you take the time to merge with what you knew before with what you know now **in ways you never imagined.**

Example Assignment 1

Source: Ellen Vincent

Always write to a general reader audience, one who is not in the class with you.

Reflective Essay Item	Points
<p>State new knowledge/experience from class or readings:</p> <p>State what you learned (new knowledge) in one or two strong or intriguing sentences.</p> <p>-Include book titles, authors, or individual presenter's names and titles in the sentence (not as citations).</p>	33.3
<p>Reflection from your past:</p> <p>Share a story from your past that was triggered by the new knowledge.</p> <p>Make it vivid (describe scents, colors, people, etc.) so the reader feels as though they were there with you. Transport your reader back in time with you.</p>	33.3
<p>Resulting actions/wisdom:</p> <p>Sit back and think about the new knowledge and the past experience.</p> <p>-What will you do differently now (or not) and why? Use "I" in this concluding section</p> <p>Include a specific action (not just thoughts or intentions).</p>	33.3

My Low Stakes assignment P1

- * You came into this course with knowledge gained in other courses and from your own life experiences. This is called prior knowledge. This knowledge consisted of facts, concepts, models, perceptions, beliefs, values, and attitudes.
- * To learn the content of this course, you need to merge your **prior knowledge** with the **new** knowledge being presented. In doing so, you are applying your skills at a higher level and modifying some of your previously developed facts, concepts, models, perceptions, beliefs, values, and attitudes. The intent of this reflection is to explicitly explore that process.

My Low Stakes assignment P2

- * 1. Elaborate on what new knowledge you have learned about the role of technology in your life and culture. Be as specific as possible. The more specific the better. Do not generalize. You are being judged on your ability to be precise. 20%
- * 2. Share a story from your past that was triggered by the new knowledge. Make it vivid so the reader is there with you. You will be graded on how well you transport the reader to the source of your prior knowledge and how you developed it. 30%

My Low Stakes assignment P3

- * 3. Consider the intersection of prior and new knowledge. Elaborate on what you will now do differently that you would not have done beforehand. Include a specific action(s) – not just thoughts or intentions. Be specific. You will be graded on the quality of your elaboration. 20%
- * 4. Clarity, grammar, and precision. 20%
- * 5. Organization. 10%

Beyond Assignments

- * Integrate reflection into your classroom culture from the beginning.
- * Talk about it on Day One.
- * Explain the importance and relevance, how it will be used to emphasize the learning objectives.

Use it to increase inclusion

- * Maybe some of your students not performing well on your tests even though you have presented everything in an organized fashion?
- * Maybe it is because they were never given the chance to absorb and reflect upon the information when it was being presented.
- * The prevailing assumption is that students will spend time, either consciously or unconsciously, reflecting upon and processing information presented in class, but when the class is over.

Assumptions are a B*tch

- * There is a problem with this assumption. It is not supported by current research!
- * In fact, allocating time in the classroom for periods of **silent reflection** has been shown to promote learning and student engagement.
- * It gives students time to process information and if needed, formulate an appropriate response, and with more time, the confidence to express that response in class. **By giving your students time in class you are also conveying that you trust them.**

Silence in the classroom

- * On Day One, start by explaining that regular periods of silent reflection are the key to better comprehension, retention and critical thinking.
- * Go one step further, put it in your syllabus, make it official.
- * After the in-class explanation, have 10 seconds of silence. Yes, 10 seconds. It will seem like an eternity, but you are training both *yourself* and the students.
- * <Pause for silence - 10 sec>

Train them to know what is important

- * As the semester progresses, commit to creating regular moments of silence in every class.
- * It is especially important to do this after you have covered a critical concept that you intend to test them on, or you simply believe it is an important one.
- * This process trains the students to differentiate between introductory material and what you want them to believe is important. **They will associate silence with importance.**

Be brave

- * This process will take time. Everything good does.
- * Experiment. Don't be afraid to make mistakes.
- * Eventually, your students will realize that silence is part of your learning process, and they will begin to use it to their advantage.
- * So, when in doubt, try silence

References

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