Reflection
(From ‘Session 9. Thinking About Thinking: Metacognition’ Developed by Linda Darling-Hammond, Kim Austin, Melissa Cheung, and Daisy Martin With Contributions From Brigid Barron, Annmarie Palincsar, and Lee Shulman. Stanford University School of Education
https://www.learner.org/courses/learningclassroom/support/09_metacog.pdf

1. Simply put, metacognition means “thinking about one’s own thinking.” There are two aspects of metacognition: 1) reflection—thinking about what we know; and 2) self-regulation—managing how we go about learning. Taken together, these processes make up an important aspect of learning and development. Developing these metacognitive abilities is not simply about becoming reflective learners, but about acquiring specific learning strategies as well.

2. If one aim of schooling is to prepare children to be lifelong learners, then it is important to help students become aware of themselves as learners and to take control of their own activities.

3. “As long as our activity glides smoothly along from one thing to another ... there is no call for reflection. Difficulty or obstruction in the way of reaching a belief brings us, however, to a pause. In the suspense of uncertainty, we metaphorically climb a tree; we try to find some standpoint from which we may survey additional facts and, getting a more commanding view of the situation, decide how the facts stand related to one another.” (Dewey, 1933, p. 14)

4. Students can be encouraged to develop a sense of their own knowledge by asking questions such as, “What do I know? What don’t I know? What do I need to know?” Teachers can help students to reflect on what they know and what they want to know as they embark on the study of a new topic. Students can reflect again on what they know as they conclude a lesson or unit. During the course of their work, teachers can encourage a reflective stance toward learning that helps students assess and direct their own emerging understandings. It is not only the teacher’s job, but also the students’ responsibility to assess and direct their own learning.

5. A number of conditions support a metacognitive classroom environment. Learning environments that are knowledge-centered and learner-centered, and that take into account the role of assessment in learning, lay the foundation for a reflective classroom (Bransford et al., 2000). “

6. Developing a culture of metacognition in the classroom—where students are encouraged to develop this kind of awareness—begins with making the purpose of learning activities and the goals for performance clear to students. Most of us would not leave for a trip without having some sense of our destination. Our destination affects how we prepare, what we pack, and the kind of experience we want to have. However, in schools, it is often more apparent to the teacher than to her students why they are learning something.

7. An emphasis on self-assessment helps students to develop the ability to monitor their own understanding and to find resources to deepen it when necessary .... Learners get opportunities to test their mettle, to see how they are doing and to revise their learning process as necessary. Without these assessment opportunities, the quality of learning can be disappointing—yet, [too
often this is not discovered until the end of the project when it is too late to change and revise the process (Barron, Schwartz, Vye, Moore, Petrosino, Zech, & Bransford, 1998, p. 284).

8. When students assume responsibility for their own learning, they reflect on their accomplishments, evaluate their work, decide on where changes are needed, define goals, and identify sound strategies for attaining them. If students are to become thoughtful individuals who can assume responsibility for learning, they must be taught how to analyze and evaluate their work. Teachers must help them define realistic yet challenging goals for their continued learning and show them appropriate strategies to attain those goals. *Giselle O. Martin-Kemp Becoming a Better Teacher.*

9. Teachers who promote reflective classrooms ensure that students are fully engaged in the process of making meaning. They organize instruction so that students are the producers, not just the consumers, of knowledge. To best guide children in the habits of reflection, these teachers approach their role as that of “facilitator of meaning making.” *Chapter 12. Learning Through Reflection*  by Arthur L. Costa and Bena Kallick

10. We have traditionally told students what we see and what we value—very often at precisely the point in their learning where they should be discovering what they see and what they value. In doing so, we have reduced the likelihood that students will use past experiences in writing to shape subsequent experiences. We have eliminated the valuable opportunities for students to learn about themselves and about their writing—and for us to learn about them. *Roberta Camp (1992)*

11. Reflection is a critical component of self-regulation. Self-regulated learners are aware of the strategies they can use to learn and understand when, how, and why these strategies operate. They can monitor their own performance and evaluate their progress against specific criteria. They can recognize improvement and identify strategies for dealing with challenging situations. They know how to choose appropriate goals, can develop and implement reasonable plans, and can make appropriate adjustments if unforeseen circumstances occur. In short, self-regulated learners are strategic.

    *Becoming a Better Teacher by Giselle O. Martin-Kniep*

**Goal Setting**

1. The great thing in this world is not where we are, but in what direction we are moving - *Oliver Wendell Holmes*

2. Your goals are the road maps that guide and show you what is possible in life - *Les Brown*

3. High-achieving students tend to self regulate more automatically than low-achieving students because they have “learned how to learn.” These students set goals and then monitor their progress toward them. They assess the effectiveness of the strategies they chose for a particular learning task and then adjust the strategies accordingly to increase their probability of success. In fact, students who have internalized these important principles of learning—those who set goals and monitor their self-efficacy in this way—boost their achievement potential by as much as 30 percent - *Zimmerman, 1998*
4. In particular, goal setting helps students learn how to learn in four main ways.

- Goals focus student attention on the learning task and the learning target. Students who set goals tied to the learning target focus on what is important and essential to success and are less likely to be pulled off course.
- Goals stimulate appropriate student effort. Students learn to judge the degree and type of effort they will need to accomplish their goals, expending more effort to reach a more challenging goal.
- Goals increase student persistence. With a clear and realistic goal in mind, students are more likely to attempt a challenging task, and should they fall short, they are more likely to choose a more effective strategy and try again.
- Goals increase a student’s desire and capacity to learn new strategies. Students who monitor their progress toward their goals look for and try new strategies that will help them more effectively reach their goals. - (Locke & Latham, 1990):

5. Goal setting generates motivation to learn by focusing students’ attention on the gap between where they are and where they are heading. Knowing the distance between where you are and where you want to be is a fundamental motivational principle (Locke & Latham, 2002).

6. The three main phases of goal setting—setting the goal, selecting the strategy and assessing performance—keep students “metacognitively, motivationally, and actively engaged in their own learning process” (Zimmerman, 2001)

7. Our students are natural goal seekers. They are “nudged” from within by curiosity and questions (“Where did that come from?” “How does that work?”); by interests and skillful pursuits (“I can learn to speak English.” “I want to explore the sea.”); and by dreams and schemes (“I have another way of learning this.” “I can imagine a new product.” “I want everyone to know about this political issue.”). Guiding our students to respond in meaningful ways to these intrinsic “nudgings”—these special pursuits and potential gifts to society—is at the core of education. - MarthaElin Mountai

8. Goal setting must be taught and, like any skill set, requires scaffolding and opportunities for guided practice.

9. Goals drive much of what we do every day, from morning routines to housekeeping tasks to completing work assignments. But students too often rely on us to determine goals for them. Yet the evidence is that goal setting has a strong influence on learning, at a 0.50 effect size (Hattie, 2012). Goals for learning might be daily, weekly, or at the unit level. They have less to do about grades (“I want to get an A in Spanish”), and more about the learning (“I want to learn Spanish.”). And consider what they need to know to set useful goals for themselves—an understanding of their present level of performance, and a clear vision of the destination. Drench your classroom in goal setting by discussing success criteria, then asking them how they will know they are successful. Their answers are the start of the goal setting process. http://corwin-connect.com/2018/05/goals-the-secret-weapon-for-getting-students-into-the-learning-game/

10. Students who set goals and monitor their progress take the lead in their own learning. They become less dependent on us to tell them when they have learned something, because the proof is right there in front of them. Assessment-capable visible learners are independent learners. Not because they don’t need us. But rather, because they are fully in the learning game. http://corwin-connect.com/2018/05/goals-the-secret-weapon-for-getting-students-into-the-learning-game/
11. Particularly within the realm of education, all research points to student led goal setting to be an exceptionally strong motivator. Think back to your own experience as a student and it becomes one of those “duh, of course” points. When did you care to actually put in the effort—when your teacher said you “had to” or when you felt like there was a purpose or a passion for the work? Akhnoukh  https://medium.com/@ignitelearning/the-power-of-student-led-goal-setting-e61c74993735

12. Research, and the practical experience of many educators, suggest that encouraging students to set their own goals can assist academic achievement and student engagement. As one student said to me last year, "When you set a goal, it just makes you want to work harder to make it." Larry Ferlazzo  https://blogs.edweek.org/teachers/classroom_qa_with_larry_ferlazzo/2017/01/student-goal-setting-in-the-classroom.htm

13. From their earliest years our students seek to acquire or create what matters to them. They are curious; they reach out to interact with the world; they want to learn and to understand; they see outcomes that matter to them. It is these inherent drives that lead our children and young people to pursue personal goals. - MarthaElin Mountain  http://www.ascd.org/publications/classroom-leadership/sept1998/Goal-Setting.aspx