“Deep learning is facilitated through questioning. Rather than giving answers, adults help teens become good learners by helping them identify questions that pique their curiosity. When we help young people make associations between what they are studying at school and the world outside of the classroom, they learn that everything in the universe is connected, that learning is an endless lifelong process.”

“The brain changes that occur during adolescence heighten teen’s abilities to learn. They become capable of thinking more critically, solving more complex problems, and weighing difficult decisions. The better teenagers become at learning, the more they will adapt to change and thrive over a lifetime.”

“[H]igher-order thinking happens when students engage with what they know in such a way as to transform it. That is, this kind of thinking doesn’t just reproduce the same knowledge; it results in something new…. Higher-order thinking only makes sense if to truly ‘know’ something means that you can use it and transform it.”

“[I]n a study of more than 2,000 students in 23 restructured schools, most of them in urban areas, Neumann, Marks, and Gamoran (1995) found much higher levels of achievement on complex performance tasks for students who experienced what these researchers termed “authentic pedagogy”—instruction focused on active learning in real-world contexts calling for higher-order thinking, consideration of alternatives, extended writing, and an audience for student work.”

“Experimental psychologists in the last half-century have been fascinated with motivation as a prerequisite for learning. They have discovered that when we come in contact with ambiguous, complex or conflicting information, our nervous systems become aroused, amping us up and forcing us to pay attention. When we are puzzled, we find a resolution very rewarding, which sets us up for efficient learning (Berlyne, 1966; Lowenstein, 1994).”

“Assess higher-order thinking during all parts of instruction and assessment, both formative and summative. You can use higher-order thinking questions in many instances--oral class discussions, quizzes, exit tickets, and other classroom strategies, and tests. You can use higher-order thinking tasks in many instances as well--classroom learning activities, performance assessments, and short- and long-term projects. The most important point here is that higher-order thinking and questions and tasks should be infused throughout instruction and assessment. Don’t wait until students have memorized some facts and then ask them to reason with the facts as a second step.”

“Tobin and Capie, two education researchers at Florida State University investigated the use of higher-order questions in conjunction with increased wait time and its effect on student engagement in 13 middle school classrooms. Teachers in the study were provided with guidance in the choice of higher-order questions, the enhancement of wait time, or both. Students in each of the classrooms were then observed for engagement (e.g., attending to a task, responding to questions, collecting data, explaining information) and academic achievement. The researchers concluded that both the use of higher-order questions and increased wait time significantly contributed to increases in student engagement. (Relationships between classroom process variables and middle school science achievement. Journal of Educational Psychology, 1982, 74(3), 441–454.)

"Outcomes of self-determined students include fewer behavior issues, an increasing sense of being in control of their learning, and the ultimate feeling of greater achievement. All these outcomes indicate a school whose teachers are creating classroom contexts that encourage and foster self-determination and whose students are motivated to perform at high levels. Monitoring and increasing the thinking focus of students can become the means to reach this end."