

The Challenge: How to Encourage Critical Thinking



Few students can define "critical thinking." How can they learn it if they have never knowingly experienced it?

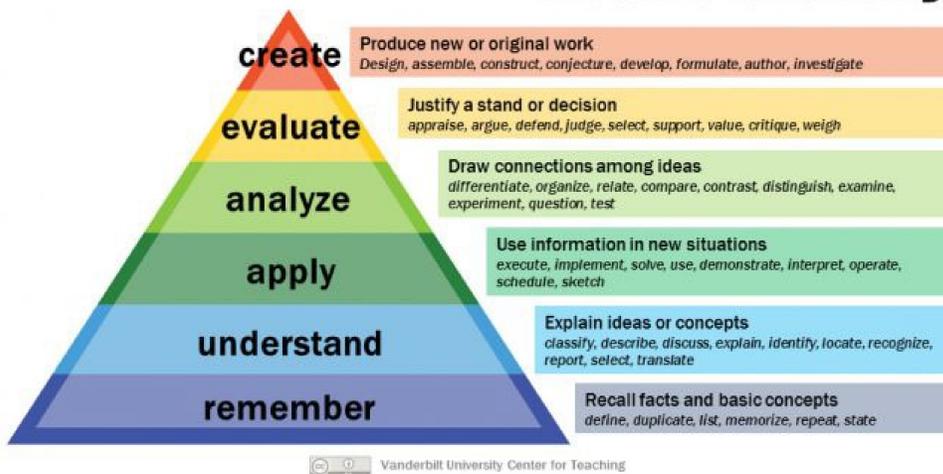
Learning is often a process of behavioral change. Bandura^{1,2} has suggested a sense of self-efficacy is essential to the cognitive learning process. The effort required for learning will not be expended unless the learners believe they have *agency* in the process.

Agency = Belief in one's ability to affect the outcome = SELF EFFICACY

Hypothesis: Efficacy Grows With Experience

Student perceptions of self-efficacy will grow through assignment-based experiences of critical thinking

Bloom's Taxonomy

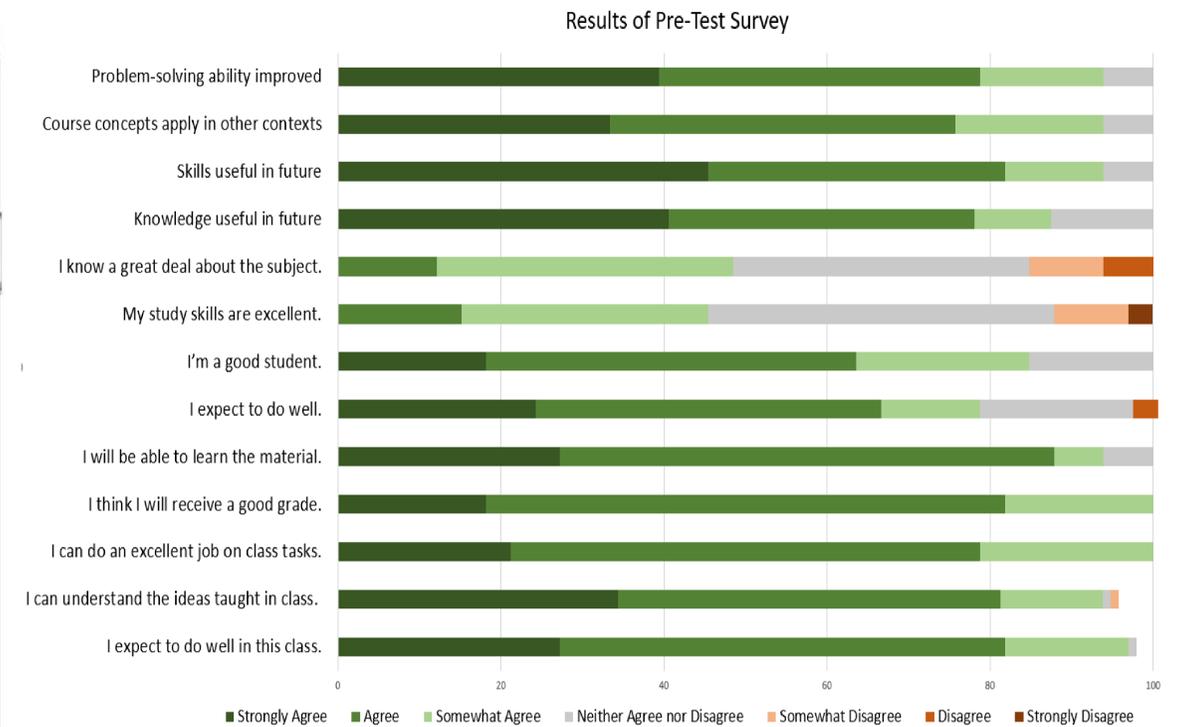
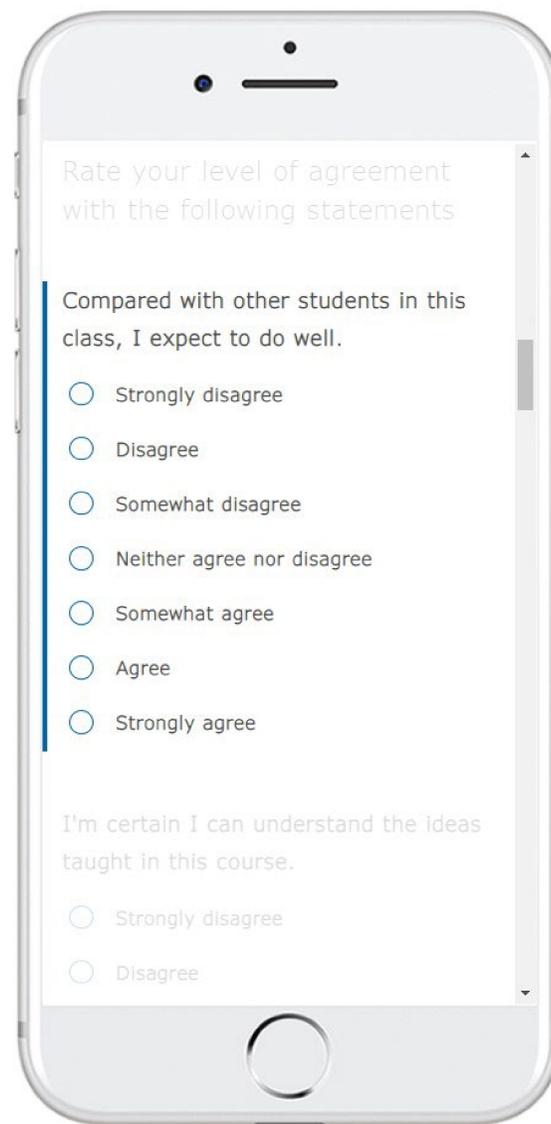
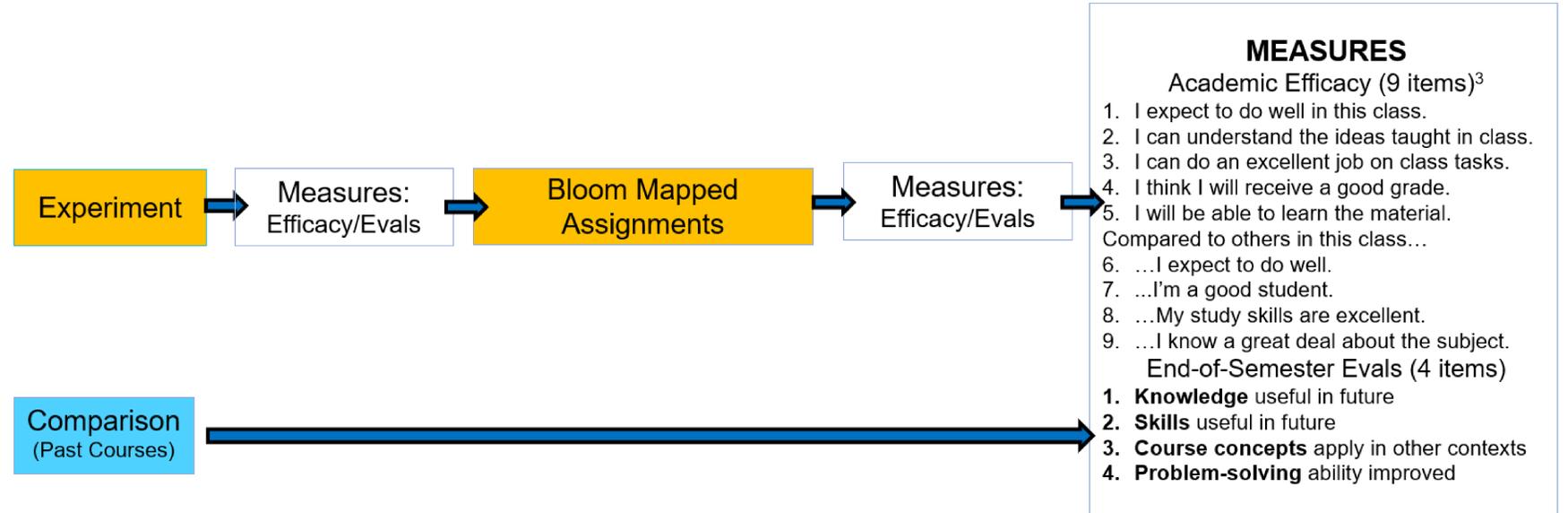


Based on Bloom's taxonomy, Application Paper assignments focused on progressively higher levels of critical thinking skills.

References

- Bandura, A. (1989). Human agency in social cognitive theory. *American Psychologist*, 44(9), 1175 – 1184.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. 84(2), 191 – 215.
- Pintrich, P. R., & De Groot, E. (1990). Motivational and self-regulated learning components of classroom academic performance. *Journal of Educational Psychology*, 82(1), 33 – 40.

Study Design



Student perceptions were measured using an online survey. A "pre-test" survey was administered before the first Application Paper assignment was assigned. The "post-test" survey will be administered after the Application Paper assignments have been completed.