

What Is the Role of a STEM Educator?

Effective instruction, by definition, leads to student learning. Although *instruction* can refer to many different aspects of the teaching profession, here we will define *instruction* as the interactive work in which teachers engage with students in an effort to enhance student learning and the achievement of the instructional goals.



learning but also provide a means through which teachers can assess student understanding and can be used both individually and in small group settings.

*The four best practices that help students develop understanding are: Cues, Questions, and Advance Organizers; Nonlinguistic Representations; Summarizing and Note Taking; and Assigning Homework and Providing Practice.

References

- Bybee, R. W. (2013). *The case for STEM education: Challenges and opportunities*. Arlington, VA: NSTA Press.
- Dean, C. B., Hubbell, E. R., Pitler, H., & Stone B. J. (2012). *Classroom Instruction that works: Research-based strategies for increasing student achievement (2nd ed.)*.Boston: Pearson.
- Ejiwale, J. A. (2012). Facilitating teaching and learning in the STEM fields. *Journal of STEM Education*, 13(3), 87-94.
- Hattie, J. (2012) Visible learning for teachers. New York: Routledge.
- Hattie, J. (2009). Visible learning: A synthesis of over 800 meta-analyses relating to achievement. New York: Routledge.
- Hattie, J. (2003). *Teachers make a difference: What is the research evidence?* University of Auckland, Australian Council for Educational Research, October 2003.
- Lantz, H. B., (2009). Science, technology, engineering, and mathematics (STEM) education: What form? What function? Retrieved January 16, 2014 from

http://www.currtechintegrations.com/pdf/STEMEducationArticle.pdf.

- Marzano, R.J., Pickering, D. J., & Pollock, J. E. (2001). *Classroom instruction that works: Research*based strategies for increasing student achievement. Alexandria, VA: ASCD.
- Northwest Regional Education Laboratory. (2005). *Focus on effectiveness: Research-based strategies*. Retrieved from http://www.netc.org/focus/strategies/
- National Academy of Sciences, National Academy of Engineering, and Institute of Medicine. (2007). *Rising above the gathering storm: Energizing and employing America for a brighter future.* Committee on Prospering in the Global Economy of the 21st Century: An Agenda for