



A SMALL SAMPLING OF WHAT WE KNOW ABOUT LEARNING FROM CROSS-DISCIPLINE SCHOLARSHIP OF TEACHING AND LEARNING AND EDUCATIONAL RESEARCH

Handout by Kathleen McKinney
Illinois State University

Summary of some key, practical research-based knowledge about teaching/learning

Below is a summary of some practical knowledge about teaching and learning from three sources in the literature. A brief bibliography of other useful sources on learning is also included.

What the Best College Teachers Do

Summary of conclusions from Ken Bain. *What the Best College Teachers Do*. 2004. Harvard University Press. (pages 15-19). Conclusions based on intensive interviews and observations of some of the best (based on their ability to produce significant learning) teachers in the nation in higher education.

1. Outstanding Teachers Know their Subjects Well

They are active in their discipline, follow important developments within their fields, do research/scholarship, read extensively, work with colleagues... They are also able to simplify complex topics of the discipline. They had an intuitive understanding of learning and saw learning in terms of major, long-term influences on students' feelings, knowledge, and actions.

2. Outstanding Teachers are Scholarly Teachers

They treat their teaching as intellectual challenges as important as their disciplinary scholarship. They use inquiry into learning and begin with questions about student learning objectives.

3. The Best Teachers Expect "More"

They challenge students but have learning objectives that focus on learning to think and act as will be needed in life.

4. The Best Teachers Create a "Natural, Critical Learning Environment"

In this environment, students learn through the use of authentic tasks and by grappling with stimulating and important questions or problems. This environment is challenging yet supportive, and learners have a sense of control, work collaboratively, receive useful feedback for improvement, and feel they will be evaluated fairly.

5. Highly Effective Teachers have a Strong Trust in Students

They believe students want to and are able to learn. They are open and honest with students and engage in appropriate self-disclosure. They treat students with respect and caring. They do not blame students.

6. Outstanding Teachers have a Strategy to Assess their Efforts and Make Changes

The faculty members use various ways to obtain feedback on their teaching and students' learning and will adjust based on this feedback. Efforts to assess students develop from learning objectives.

Seven Principles for Good Practice in Undergraduate Education

Direct Quote Excerpt from Arthur W. Chickering and Zelda F. Gamson. *The American Association for Higher Education Bulletin*, March 1987.

(<http://honolulu.hawaii.edu/intranet/committees/FacDevCom/guidebk/teachtip/7princip.htm>) "These seven principles are not ten commandments shrunk to a 20th century attention span. They are intended as guidelines... to improve teaching and learning. These principles seem like good common sense, and they are -- because many teachers and students have experienced them and because research supports them. They rest on 50 years of research on the way teachers teach and students learn, how students work and play with one another, and how students and faculty talk to each other."

"1. Encourages Contact Between Students and Faculty

Frequent student-faculty contact in and out of classes is the most important factor in student motivation and involvement. Faculty concern helps students get through rough times and keep on working. Knowing a few faculty members well enhances students' intellectual commitment and encourages them to think about their own values and future plans.

2. Develops Reciprocity and Cooperation Among Students

Learning is enhanced when it is more like a team effort than a solo race. Good learning, like good work, is collaborative and social, not competitive and isolated. Working with others often increases involvement in learning. Sharing one's own ideas and responding to others' reactions sharpens thinking and deepens understanding.

3. Encourages Active Learning

Learning is not a spectator sport. Students do not learn much just by sitting in classes listening to teachers, memorizing pre-packaged assignments, and spitting out answers. They must talk about what they are learning, write about it, relate it to past experiences and apply it to their daily lives. They must make what they learn part of themselves.

4. Gives Prompt Feedback

Knowing what you know and don't know focuses learning. Students need appropriate feedback on performance to benefit from courses. When getting started, students need help in assessing existing knowledge and competence. In classes, students need frequent opportunities to perform and receive suggestions for improvement. At various points during college, and at the end, students need chances to reflect on what they have learned, what they still need to know, and how to assess themselves.

5. Emphasizes Time on Task

Time plus energy equals learning. There is no substitute for time on task. Learning to use one's time well is critical for students and professionals alike. Students need help in learning effective time management. Allocating realistic amounts of time means effective learning for students and effective teaching for faculty. How an institution defines time expectations for students, faculty, administrators, and other professional staff can establish the basis of high performance for all.

6. Communicates High Expectations

Expect more and you will get more. High expectations are important for everyone -- for the poorly prepared, for those unwilling to exert themselves, and for the bright and well motivated. Expecting students to perform well becomes a self-fulfilling prophecy when teachers and institutions hold high expectations for themselves and make extra efforts.

7. Respects Diverse Talents and Ways of Learning

There are many roads to learning. People bring different talents and styles of learning to college. Brilliant students in the seminar room may be all thumbs in the lab or art studio. Students rich in hands-on experience may not do so well with theory. Students need the opportunity to show their talents and learn in ways that work for them. Then they can be pushed to learn in new ways that do not come so easily."

Helping to Motivate Students to Enhance Learning

Summary of practical implications from Marilla Svinicki. 2004. *Learning and Motivation in the Post-Secondary Classroom*. Anker. (pages 222-235). These principles are based on the ideas and research from several major theories of human learning.

1. Emphasize a Few Key Ideas

Cognitive Theory suggests that key ideas must be made explicit and stressed in the overall course and each session.

2. Be Aware of Prior Knowledge

Theories indicate that what students learn is influenced by what they bring to the class. There are various sources of data for this including pretests or prior knowledge surveys given by the instructor.

3. Tap into Motivational Sources

Think about what motivations students may bring to your course and what you can do to enhance that. Provide reasonable choice and control to students. Help students make connections between what they are learning and their lives. Provide early opportunities for success in the course.

4. Build Structural Knowledge to Achieve Understanding

Use various strategies to help students see and build interconnections among ideas and/or skills and/or applications in the course. They need an overall, meaningful structure.

5. Structure Learning to Support Encoding of Content

Use encoding strategies (e.g., organizational encoding, elaboration encoding) to promote "deep" learning.

6. Use Modeling to Teach Skills

Demonstrate for students the thinking or skills you wish them to learn and practice. Use peers as models as well.

7. Give Lots of Active, Coached Practice

Provide opportunities for active, hands-on practice with assistance and feedback from faculty and peers.

8. Teach in Ways that Promote Transfer

Provide opportunities, modeling, and practice for students to apply knowledge and skills to novel situations or problems.

9. Help Students become Aware of their Own Learning Strategies

Have students use self-analysis and self-reflection to become more aware of how they learn and how they can use that knowledge to improve their learning.

10. Respect Individual Differences in Learning

Allow flexibility and choice to make diversity in learning an asset.

Learning and the Brain

Summary of some implications from J. E. Zull, J. E. 2002. *The Art of Changing the Brain: Enriching the practice of teaching by exploring the biology of learning*. Sterling, VA: Stylus Publishing.

1. The importance of connecting learning to students' prior knowledge.
2. Using emotions appropriately to enhance learning.
3. Varying pedagogy to trigger activity in different parts of the brain.
4. The importance of the visual sense.
5. Showing students and role-modeling are important.
6. The need for active learning- students should "do."
7. Students should have some control.
8. Students should reflect.

Selected Resources on Learning (*six favorites—quick reads, understandable, useful)

Astin, A. (1997). *What matters in College: Four critical years revisited*. San Francisco: Jossey-Bass.

*Bain, K. (2004). *What the best college teachers do*. Cambridge, MA: Harvard University Press.

Baxter Magolda, Marcia. 2009. "Educating Students for Self-authorship." Pgs. 143-156 in Carolin Kreber (Ed.), *The University and its Disciplines*. New York: Routledge.

*Baxter Magolda, M.B. (2000). *Creating Contexts for Learning and Self-Authorship: Constructive-Developmental Pedagogy*. Nashville: Vanderbilt University Press.

Braskamp, L. A., Trautvetter, L. C., & Ward, K. (2006). *Putting Students First: How Colleges Develop Students Purposely*. Bolton, MA.: Anker.

Garung, R., Chick, N. L., & Haynie, A. 2009. *Exploring Signature Pedagogies: Approaches to Teaching Disciplinary Habits of the Mind*. Sterling, VA.: Stylus.

*Halpern, D. F. & Hakel, M. D. (2002). *Applying the Science of Learning to University Teaching and Beyond* (Number 89). San Francisco, CA: Jossey-Bass.

*Leamson, R. (1999). *Thinking about teaching and learning*. Sterling, VA: Stylus.

Light, R. J. (2001). *Making the Most of College*. Cambridge, MA: Harvard University Press Association.

Nilson, L.B. (1998). *Teaching at its Best: A Research-Based Resource for College*. Bolton, MA: Anker.

Merriam, SB, Caffarella, RS and Baumgartner, LM. (2007). *Learning in Adulthood: A Comprehensive Guide*, 3rd ed. Jossey Bass.

Pescosolido, B. A., Aminzade, R. (1999). *The social Worlds of Higher Education*. Thousand Oaks: Pine Forge Press.

*Svinicki, M.D. (2004). *Learning and Motivation in the Postsecondary Classroom*. Bolton, MA: Anker.

Tagg, J. (2003). *The Learning Paradigm College*. Bolton, MA: Anker.

Weimer, M. (2002). *Learner-Centered Teaching: Five Key Changes to Practice*. San Francisco, CA: Jossey-Bass.

*Zull, J. E. (2002). *The Art of Changing the Brain: Enriching the Practice of Teaching by Exploring the Biology of Learning*. Sterling, VA: Stylus Publishing.