

THE SCIENCE, ART, AND CRAFT OF TEACHING

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TEACHING

Teaching is a science, an art, and a craft.

A Science

It is a science in that there are strategies and practices that a body of research has shown to be effective in enhancing learning. Just like doctors, teachers should use research to inform their practice. On the individual level teaching is a science also in that teachers are constantly collecting data by observing their students in order to see if learning is taking place and how they learn best. And, like scientists, teachers experiment with new techniques or strategies to see how they work.

An Art

It is an art in that teachers must bring themselves fully into their teaching. As a teacher you will need to find the methods and strategies that work best for you. Teachers are not standardized products. What works for one teacher may not work for another. Thus, all the teaching strategies that you learn should be adopted and adapted to fit your particular teaching situation and your personal teaching style. To be an effective teacher you must carve out your own teaching philosophy and discover your own unique talents and learn how to use them.

A Craft

Teaching might also be described as a craft. A craft is a skill or set of skills learned through experience. This is exactly what teaching is. This means that one cannot expect to leave a college teacher preparation program as a finished teaching product. Teaching is a complex, multi-dimensional endeavor; not something that can be mastered in four semesters. Masters teachers develop over time through experience and continued study and reflection.

Undergraduate and post-baccalaureate teacher preparation programs will not teach you how to teach; instead, they will give you the basis upon which to learn how to teach. Does this mean teacher education programs are of little value? Certainly not. There is a fairly substantial body of research that indicates that teacher education programs improve teachers' performance and their students' achievement (Wilson, Floden, & Ferrini-Mundy, 2001). However, becoming a master teacher happens over time with continued professional development and reflection.

TEACHERS

Professional development should be related to the acquisition of new knowledge. Master teachers have four types of knowledge (Bruer, 1999; Darling-Hammond, 1999; Eggen & Kauchak, 2007):

- **Knowledge of content.** The expert teacher has a body of knowledge related to the content or subject matter that is to be taught. The math teacher knows a lot about math, the social studies teacher knows a lot about social studies, etc. This body of knowledge guides the expert teacher in deciding what is taught and in what order. What about the elementary teacher or the special education teacher?

- **Pedagogical knowledge.** *Pedagogy* is the art and science of teaching. Expert teachers know a variety of skills, strategies, techniques, and methods to impart knowledge or enhance learning. Effective teachers have a toolbox filled with a variety of pedagogical skills they can

use with a variety of students in a variety of situations.

- **Pedagogical content knowledge.** Pedagogical content knowledge is an understanding of how to teach specific content or skills. For example, you know the best strategies for teaching reading, science, math, or writing. Also, you understand how to convert your knowledge into information that students can understand. You can break things into manageable parts, use kid language to make things clear and simple, and design activities that help students understand.

- **Knowledge of learners and learning.** You understand the learning process, you know how students best learn, and you recognize link between what you do and student learning. Here you understand human development, theories of learning. That is, how human beings learn. This text is designed to help increase your understanding of this type of knowledge.

THE MOST SIGNIFICANT VARIABLE

Teachers are the most significant variable in determining the quality of education (Darling-Hammond, 1999; Darling-Hammond, Holtzman, Gatlin, & Heilig, 2005; Darling-Hammond & Youngs, 2002; Marzano, Pickering, & Pollock, 2001). One of the most effective ways to improve education is to attract intelligent, creative, innovative, caring, dedicated, hardworking people into the field. The other important component is to provide teachers the knowledge and skills necessary to succeed. The means continued professional development that enables them to develop four types of knowledge: content knowledge, pedagogical knowledge, pedagogical content knowledge, and knowledge of learners and learning.

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