

Chapter 2

Learning To Learn

Learning is natural and complex. “*Learning to learn*” will become more important as mindcraft replaces handicraft as the major form of human work (Perelman 1992). Further, knowledge-based work is not just word processing, but includes information integration that becomes progressively more technical and complex as more concepts, information, problem-solving and decision-making operations are interconnected. Thinking at the current level will not solve the new problems students will face in their careers; they must learn how to learn as they face the unknown. As Perelman (1992) points out “...*work and learning are ever more convergent.*”

Because specialized skills are now becoming obsolete every few years “*the prerequisite skill for a growing majority of occupations is learning to learn*” (Perelman 1992). Perelman continues by pointing out that the current education and training system largely neglects this need for “*flexible, ‘on-demand,’ ‘just-in-time’ learning...*” *It is important to learn how to learn in order to be a life-long learner.*

THE MEANING OF “LEARNING TO LEARN”

The meaning of learning to learn is very different today as a result of information technology than it was when learning focused on manual skills. If information is, as Perelman (1992) says “...*the closest thing we will ever have to an inexhaustible resource*” then we should learn how to use it wisely.

Preparing for Life in the 21st Century

The number of career options was limited a few generations ago. Much less information was available and technology was simple compared to what it is now. Pastoral societies and even industrial societies did not change very quickly. People learned a trade and practiced it the rest of their lives.

Expanding technology and the increasing complexity of much of what we work with makes life-long learning a necessity rather than an option in this new century. Rapid changes in information processing technology and information processing power and the potential for its creative use all continue to increase. If life-long learning is becoming a necessity, then it is also necessary for people to assume responsibility for and to learn how to manage their own learning. *College professors ought to nurture and not hinder that responsibility in their students.*

Learning in Order to Learn

Learning in order to learn and to learn efficiently on one's own will serve everyone well in the information age. With communication capabilities almost beyond imagination, we have access to so much information now that information overload can become a problem. The problem is not solved by not accessing the information, but merely accessing information is not the same as learning, however.

Learning is a cumulative process. While the human mind is a remarkable information processor, we learn rather slowly compared to the speed with which information can now be made available. Our brains do not function like servers where large amounts of information are stored and recalled in large quantities in seconds.

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The need for learning is identified with the realization that “*I don’t know*” and begins with “*let’s find out.*” We make a decision to learn when we realize there is something we do not know and we want to learn about it. We learn best when we want to learn and are actively involved in the learning process by finding out about something through research. *Research is teaching one’s self.*

Most college professors have Ph.D. degrees, the highest degree awarded by universities. One of my graduate student peers asked our biology professor why he was a Doctor of Philosophy and not a Doctor of Biology. He said that philosophy meant lover of wisdom, and those who earn this highest degree love to learn. *One of our main responsibilities as teachers is to encourage students to be “lovers of wisdom,” whatever degree they are working toward.*

It is interesting to philosophize about the resource—information—upon which wisdom depends. What is it? Unlike most resources which are present in finite quantities, information can be taken without being lost, it can be used by any number of people without being diminished, and it can be multiplied over and over again (Perelman 1992). Further, the value of information grows the more it is connected to other information. *Is it logical to suggest that information can lead to knowledge, knowledge can lead to understanding, and wise use of our knowledge and understanding results in wisdom?*

Growing in Many Dimensions

When students learn how to learn, they have the potential to grow in many dimensions. Some of these dimensions are...when students learn how to learn they...

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- *Can find and organize information resources and educational materials.*
- *Recognize the importance of managing time, a non-renewable resource.*
- *Share their knowledge and understanding with others, gaining respect and becoming more self-confident, with higher levels of self-esteem.*
- *Are motivated to learn from within, and when learning is accompanied by success, self-motivation increases and the “feedback effect” becomes a powerful self-motivating stimulus.*
- *Learn how to evaluate and improve their own work.*
- *Realize that life-long learning is natural, just as walking and talking are natural and continue through life.*
- *Realize that life-long learning is more necessary now than ever before because rapid changes in technology make vast amounts of information readily available.*

It is very important for students to learn how to learn in order to keep up with life in today’s society. College professors do not prepare students for a profession; they should be preparing students for life. *Professors should try to create learning environments that result in the most meaningful learning per unit time, and stimulate their students to want to learn and to feel good about learning.*

LEARNING BY DOING

Most teachers would agree that students learn by doing. We all learn by practicing and by applying what we have learned. Involvement is part of experiential learning; Perelman (1992) considers learning by doing an essential ingredient in hyperlearning. Quoting Perelman:

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“The hyperlearning enterprise is a wide-open community of practice, where learning is by doing, the roles of apprentice and expert are continually shifting with the demands of the problem at hand, learning is self-paced and custom-styled by the individual learner, and passionate—sometimes ‘spectacular’—learning is motivated by the natural drive of the human brain freed of the fear of failure.”

It is also important to remember that the ultimate value of what has been done lies not in the amount of effort put forth, but in the value of the product. The product may be intangible, such as an old concept or a new idea, or tangible, such as a solution to a problem or a publication. Activity alone does not guarantee productivity. *It is important that professors provide learning activities that maximize the value of the educational product.*

The common practice of having students do the same laboratory exercises year after year should be reconsidered. While it may be important that students learn the same concepts each year, the information used to illustrate the concepts can be new and different. Students can be involved in designing learning activities that illustrate important concepts. Storing current and previous work electronically, students can access a number of different designs that illustrate particular concepts. *Students can share what they learn with other students by publishing their work in electronic information systems.*

Active Learners

Young adults are active people, and activity leads naturally to learning. Cohen (1994) refers to talking, explaining, and arguing about concepts and ideas as a “*principle of adult*

learning.” If that is truly a principle, and how could we argue that it is not, then shouldn’t that approach be used more in higher education where learners are young adults?

When children are not active—because they watch too much television perhaps—we become concerned. Yet school children are often told to “sit down and do your work.” The effect of this approach carries over into college where students often sit in a lecture room, take notes on what the professor is saying, and memorize the material for the tests.

Less active learning in higher education may be due to the tradition of large lecture classes in order to be economically efficient, even though research shows that the lecture method is not the most effective way to learn (see Bonwell and Eison 1991). Administrators should not make decisions that impede the development of life-long learning on the basis of economic expediency.

When college professors learn with students by being actively involved with them, their roles change from being the source of knowledge and the deliverer of information by lecture to that of co-learner. After I moved from the lecture format to a cooperative learning environment, two of my students shared a significant observation with me after waiting at my open door while I worked with another student. “*We wondered how you can get any work done*” one of them said, “*but then we realized that this is your work.*” The truth of that observation became more obvious to me each time I reflected on my responsibility to my students, and in a research-oriented university at that. *I could even integrate my research with my student’s learning when I accepted them as part of my learning environment as well as theirs.*

Creative Learners

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Creative learning may result in the discovery of new concepts, but more often it focuses on the synthesis of available information in new ways for learners. Humans have unique abilities to conceptualize and synthesize, and these abilities should be developed to their maximum potential. Students who are given opportunities to think creatively and synthesize what they know about relationships and solving problems become better decision-makers.

Practice in the thinking skills listed below, based in part on a list in Hamm and Adams (1992), should be part of the learning environments of college classrooms.

- ***Focusing...on concepts, problems, and goals.***
- ***Collecting ...what we know and what is available.***
- ***Remembering...mentally and by data storage.***
- ***Organizing...arranging information logically.***
- ***Analyzing...evaluating and understanding information.***
- ***Integrating...information and solving problems.***
- ***Producing...composing new information from the old.***
- ***Evaluating...both the process and product.***

Students learn to use these thinking skills by being active learners, creating new information from old information. They should be involved in their own learning rather than recording what the professor says and trying to memorize it for a test. *Thinking skills are acquired by actively creating more knowledge from previously existing knowledge.*

CONCLUDING REMARKS

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The amount of learning that can be accomplished when students (or anyone!) learn how to learn is almost limitless. Students look forward to an active learning environment where they can also help others learn and share their own new knowledge with others. Their learning activities mean more to them and to their classmates when learning is shared. *Learning how to learn and being an active learner promotes the view that learning is a life-long commitment and gives individuals the skills and opportunities to carry it out.*