CREATIVITY AND STUFFING SAUSAGES

By ARTHUR VANGUNDY

The topics of creativity and problem solving normally are not included in the curriculum of colleges and universities. They don't fit the traditional view of what higher education should be doing.

An examination of course descriptions in most university catalogs will reveal that higher learning institutions regard themselves as repositories of knowledge from which students can make withdrawals. Creativity and problem solving don't seem to belong in this scenario, since such abilities usually are viewed as something you either have or you don't have. In other words, if it isn't knowledge, why teach it?

Perhaps the best reason for teaching creativity and problem solving abilities can be found in a metaphorical expression made by John Gardner over 20 years ago:

(Schools and colleges) . . . must equip the individual for a never-ending process of learning . . . they cannot content themselves with the time-honored process of stuffing students like sausages . . . It is (their) sacred obligation to instill in their students the attitudes toward growth and learning which will in turn shape society.

And the eminent psychologist J. P. Guilford has added to Gardner's thoughts by noting that:

. . . it is not enough to fill young heads with knowledge, although this is a necessary step; we must give the students instruction and exercise in using that knowledge.

In one respect, students do need to be stuffed like sausages. We all need an information base for solving our problems, whether they be personal or work related. There is no substitute for factual knowledge when it comes to interpreting and learning about the world around us. Moreover, an educated (i.e., knowledgeable) citizenry makes for a more enlightened society. Indelibly etched in my mind are the words on the cornerstone of my undergraduate library: "The Truth Shall Set You Free." Through knowledge we develop a liberated mind.

All of this is fine as far as it goes. Unfortunately, we happen to live in a constantly changing world. Knowledge acquisition is a short-term endeavor. What we learn today may be obsolete tomorrow. To make matters worse, we can't always predict what knowledge we will need in the future. We can acquire knowledge today to "catch up" on what has been learned in the past and to form a foundation for future knowledge acquisition and synthesis. But, knowledge alone can't prepare us for coping with an uncertain future.

What we do need to cope with the future is imagination. That is, we need refined skills for creatively solving our problems. Knowledge acquisition, as currently emphasized in higher education, supplies the content needed to adapt to changing conditions. We also need process skills to apply our ever-enlarging knowledge base. Albert Einstein said it well when he stated that:

Imagination is more important than knowledge, for knowledge is limited while imagination embraces the entire world.
We need imagination to deal with new knowledge so that we can become more effective problem solvers. After all, isn’t problem solving what we all do anyway? We solve problems in every facet of our lives. The fact that students are able to master current knowledge says little about their future survival skills. Students also need to become problem solvers, not just stuffed sausages that grind out their contents on demand.

Problem solving generally relies on both analytical and creative thinking skills, even though one may need to be emphasized more than the other, depending on the type of problem. Problems requiring one correct solution (e.g., mathematical problems) will require a predominately analytical approach (structured problems); problems for which there can be more than one correct solution (e.g., the current state financial situation) will need creative solutions (unstructured problems).

Through mastering content, many students can deduce the analytical steps needed to solve structured problems. However, we can’t always assume that such problem solving skills will be “acquired like small change with other purchases,” as educator G. A. Woditsch claims. And it is even more unlikely that students can improve their creative thinking skills through inferences drawn from content.

Students should arrive in the job market with basic problem solving skills. We shouldn’t be stuffing our sausages and then sending them off to be “cooked” without some preparation. Instead, we should look for ways to prepare students while they still are in college.

There are at least two ways we can prepare our sausages. First, we can provide separate instruction in basic analytical and creative problem solving skills. By developing courses that focus specifically on cognitive skill development and creative thinking and problem solving we can do much to prepare our sausages for the “steaming” that awaits them. Of course, such courses must not take precedence over basic knowledge courses. A knowledge base is a fundamental prerequisite for any type of problem solving.

Second, we can attempt to integrate problem solving skills into the curriculum. By adopting a problem solving approach to the curriculum (or at least selected parts of it), students will acquire the knowledge they need while simultaneously gaining a life-long skill to use when confronted with new knowledge.

There is nothing radical about either of these approaches. Many colleges and universities have been using such approaches for years. Many more institutions, however, should become involved. And the degree of involvement should spread gradually from a few isolated departments to embrace entire institutions.

Implementing these approaches will not be an easy task. Many obstacles must be overcome. The money, personnel and time required for implementation all are scarce resources in most universities. Yet, the potential benefits should outweigh the costs in the long run.

The greatest obstacle to implementing either of these approaches lies not in the costs but in the attitudes and values of higher education personnel. Proposals for change — any kind of change — usually meet with resistance. Sausage stuffing has such a long tradition that it will be very difficult to change the notion that a teacher’s sole role is to stuff students with knowledge and push them out the door.

Assuming, however, that courses in problem solving could be implemented and problem solving concepts could be incorporated into the curriculum, I would like to briefly discuss what might be included. Since my particular area of interest has been in creative problem solving (CPS), I will deal with that, instead of trying to look at both creative and analytical approaches.

The course I teach on creative problem solving (Human Relations 5073) stresses creative thinking principles and individual and group techniques for helping with different stages of the CPS process. One of the first major points I make is that we all are creative; we vary only in the degree to which we have developed our creative potential. You don’t have to be a da Vinci or an Einstein to be creative; their creative products are beyond the grasp of most of us. To be human is to be creative. The trick is to use our innate and acquired creativity to help us solve our major problems.

Another point I make is that a major portion of being creative is gaining a good understanding of your problem. Most of us make as-
sumptions that restrict our ability to develop new problem perspectives. Problem assumptions must be tested before creative ideas can flow.

A final major point is that deferred judgment is a critical ingredient for generating ideas. All criticism (whether of your own ideas or those of others) should be withheld until all possible ideas have been brought out. Then and only then should judgment come into play.

In addition to these and other points, we spend a considerable amount of time in using a five-step CPS model. After developing an initial, tentative definition of the problem, the model is used as follows:


2. Problem Finding. Look over all the information gathered during Fact Finding and develop several different redefinitions of the problem. Then select the one definition that seems to best capture your problem at this time. Consider this redefinition to be tentative and subject to change since new information may emerge.

3. Idea Finding. Using a variety of different idea-generation techniques, develop as many ideas as possible for solving the problem. Withhold all judgment during this stage.

4. Solution Finding. Look over all of the ideas generated and try to develop workable solutions by modifying or combining ideas. Then generate a list of criteria and use them to evaluate the solutions by rating each solution on each criterion. Finally, select the most workable solution.

5. Acceptance Finding. If necessary, develop plans for gaining acceptance of your solution. Consider possible implementation obstacles and devise ways for overcoming them.

Many different techniques can be used for each of these stages. For example, Idea Finding techniques include such methods as brainstorming, brainwriting (a group method involving silent, written idea generation), analogies, synec-

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