Rothenberg considers educational creativity

By Jim Moody

Another important sidelight of these studies of creativity and intelligence was that they depended on a close interaction between creativity and the traditional concept of genius. The present notion of creativity can treat other implicit values and assumptions, such as the educational upheaval of the 1930s. "Progressive" education, with its emphasis on freedom and spontaneity in class, was developed at this time. Creativity replaced progressivism as an acceptable goal, but the emphasis remained on freedom and sp-ontaneity.

Rothenberg then pointed out that in addition to the large amount of interest in the subject of creativity, not much specific knowledge is known about the role of creativity in education. Aside from the previous experimental findings, the only other principal contribution by educational psychologists has been to point out that unusual children may also be creative. This is important because, in education, conformity is often rewarded for its own sake, whereas unusual behavior is not tolerated at all. This is still not enough, however, and we cannot yet say if itself cannot possibly be the key to true creativity.

He then outlined implicit assumptions about creativity. First, creativity is not only an innate capacity. "Poets are not necessarily to be made, but born." Second, creativity is not necessarily a capacity of geniuses. Anyone interested in considering creativity as a proper goal for education must ask about the concept of creativity he is employing and what he considers the essential functions of education to be. For example, many who speak of creativity are often referring to producing creative, the capacity to produce new amounts of research or ideas. Rothenberg insisted that creativity and productivity are very distinct capacities. Creative people may produce only one or two works in a lifetime, whereas productive people may produce much research of a very common nature.

As another example, Rothenberg gave research showing that there is no clear correlation between spontaneity in the expression of one's feelings and creativity. Yet, the application of this notion, as a method for increasing creativity, has resulted in pre-school movements, T-groups, and the tendency for some university classes to focus on talking about themselves rather than subject matter.

A final example of the misconception of creativity is that, in Russia, the idea of applying scientific creativity meant the training of artists and other talents through Pavlovian conditioning.

Thus, the question of whether or not creativity is a proper goal for education depends on what the concept of creativity is, and on the function of education. Rothenberg then explained his limitations on his "yes" answer to the question as a method for discussing his own research.

He focused on the thought processes of proven creators, actively engaged in the creative process. He did assume in advance that creativity, as in great works of art, is necessarily continuous with that of the general population. Therefore, his research does apply general notions of creativity, the simple productive, unusual behavior, or the ability to find alternate solutions to problems, but it goes beyond creativity and genius.

One of the thought processes he found to be operating in creative thought, Rothenberg called "Janusian thinking," after the Roman god, Janus, whose many faces were seen as different directions. Janusian thinking is "the capacity to conceive and utilize two or more opposite or contradictory concepts, images, or ideas, simultaneously."

It is the process of using more opposites of contradictions can be used to conceive two or more discrete entities to be equally true at the same time is actively postulated in the creator's mind, and leads to integrated concepts, images, and creations. This type of thinking plays a constant role in the creative process, and seems to be unique to creative people. Examples of human creativity involving integrated contradictions are: Yin and Yang (Eastern philosophy), Man and Superman, God and the Devil, Dionysus and Apollonius, and the dualism of everything. Rothenberg cited two examples of this Janusian thinking in scientific creativity. The first of these was the discovery by War- son of the double helix structure for DNA. Watson's description of the discovery make clear that the actual breakthrough consisted of conceiving simultaneously identical but specially opposed forms. This breakthrough was not the complete answer, and a whole set of reac-tions had to be worked out to give it validity, but it was the creation that enabled the final concept.

Another example was Ein-stein's general theory of relativity. His Janusian concept was outlined in a 1919 letter. He focused on the thought processes of proven creators, actively engaged in the creative process. He did assume in advance that creativity, as in great works of art, is necessarily continuous with that of the general population. Therefore, his research does apply general notions of creativity, the simple productive, unusual behavior, or the ability to find alternate solutions to problems, but it goes beyond creativity and genius.

Another process of these processes is "homospacial thinking," and another new concept in creativity, productivision or creativity, productivity, or creativity and the traditional concept of genius. The present notion of creativity can treat other implicit values and assumptions, such as the educational upheaval of the 1930s. "Progressive" education, with its emphasis on freedom and spontaneity in class, was developed at this time. Creativity replaced progressivism as an acceptable goal, but the emphasis remained on freedom and sp-ontaneity.

Another aspect of these pro-cesses is the emotional nature, which again should not be over-looked in education.

Consequently, a focus on structure and discipline is important. School which again should not be overlooked, and which again should not be overlooked. and which again should not be overlooked. and which again should not be overlooked. Rothenberg is not at all sure that the general population is capable of Janusian and homo-spacial thought, because all of his subjects were proven crea-tors, geniuses. He concluded that we must design our educational system so that students with these capacities will flourish. In this way, many minds of thought can be used as models for education, and their respective emphasis on analytical and holistic processes that encourage patience of discovery, and do not discourage the emotional aspect of thinking, encourage people to be creative.

A focus on structure "involves a rigourous, disciplined approach to the subject matter of a fact, as a means to understand the underlyng patterns of thought." It also involves ex-ecution of the function of an educational system. Rothenberg has taught highly successful courses at Yale which have emphasized these two facets.

In closing, he stressed that the basic approach toward facilitating educational creativity is good problem solving, and its opposite, emotional and visual learning, but "rigor, intellectual discipline, and hard work are vitally important for the creative person, the potentially creative student, and the good problem solver."