

THE ROEPER SCHOOL ARCHIVES

“Learning and Creativity”

A Presentation in the 1962-63 Adult Education Series

Delivered December 11, 1962

By George A. Roeper, Headmaster, City and Country School

© Roeper City and Country School, Inc.

The Roeper School Archives, Bloomfield Hills, MI

ABSTRACT

George Roeper discusses the differences between “intelligence” and “creativity,” their different applications, and questions the validity of using an IQ test to gauge the capability of a student.

LEARNING AND CREATIVITY

by George A. Roeper

During the past five years the concept of “creativity” invaded the educational scene. This is noticeable in writings on education, in the work of teachers, on all levels from nursery through higher education. The concept even entered the business world with “brain storming sessions” and politics with developing the capacity to predict the “unthinkable”. The focus on “creativity” developed as an aftermath to the arrival of Sputnik in the heavenly skies. When everybody in the United States was shaken and scared by the scientific achievements of Soviet Russia, the scramble for means and ways to close the gap between Russia and America degenerated into terror-stricken panic. Public school education was blamed first and all of a sudden the gifted ones were to solve the vexations and harassing problem and close the gap. The question arose: how do we identify the gifted ones? The only instrument available to do this mammoth job on a national scale was the intelligence test, developed more than 50 years ago. Consequently IQ tests, that is group tests and individual tests, were given all across the nation to identify various levels of ability. Thinking in terms of mass production, the great American invention, one could predict statistically the outcome of the race with Soviet Russia if all gifted persons were identified and trained to their maximum capacity. It was thought of as a Panacea of the problems of our time. We went along using the intelligence tests for identification and tried to help those identified as gifted.

There was a good reason why one looked at intelligence tests as the single criterion for identifying the gifted. The reason being that it was generally believed that those who have a high IQ most likely also have imagination and originality. One did not bother very much to investigate sufficiently whether high intelligence is identical with imagination, originality and “thick-coming phantasy”. Rather, it was looked upon as all inclusive in one package. The definition of the gifted was simple. It was the child with an IQ of 130 and above and this still is universally accepted.

Experts took a closer look at the intelligence tests and began to wonder whether this test selects the people whom we want and need. This check on the intelligence test showed that the test measures memory, that is the knowledge of what is already known. It does not

measure the capacity of the individual for ways of finding out about the unknown. The test measures the ability for convergent thinking, that is giving only one answer as the most likely acceptable one. The test does not measure divergent thinking which is the ability to find various solutions to one problem or using different approaches to a solution. The test showed that it helps identifying the person who conforms to accepted standards and does not identify the person who has new and different ideas. It identifies the person who knows the unquestionably accepted answer, whose answer falls within the established norm. The test does not allow for the speculative, innovating, inventive answer. Recognizing the limitations of the IQ tests for the selection of the type of person we need and want to see grow, it became apparent that a very important quality of human functioning needed to be included in the criterion for identification in order to select the desirable person most capable to contribute to our society. This criterion turned out to be the concept of creativity. Creativity appeared to be the ingredient in addition to intelligence that will make up the personality capable of changing the world. Intelligence was not found to be sufficient guarantee for the solution of the vast problems of the world today. It was the creative thought that will bring about the change, close the gap and provide leadership. As Prometheus fashioned a man of clay and breathed into him the fire of life so we should breathe into man the creative thought.

Although Sputnik might have greatly accelerated the development of our attention to creativity as an important ingredient in human functioning, there is another situation which makes it perhaps imperative to include creativity in human activity to solve our future problems. Educators are faced with a task they have never met before in history. Looking back into history we have seen how it took hundreds of years to civilize nations or groups of peoples who either were out of communication with other parts of the world or who were at a primitive stage of cultural development. A recent trip to Africa brought many surprises to me. Perhaps the most outstanding one was the rapid change of the pattern of life and the quick adaptation to external influences coming from other civilizations. What before took hundreds of years to develop will now take only ten to twenty years. Clothing habits, eating habits became westernized in Africa in a matter of a few years. Western music is spreading like wild fire. Literacy will be completed in twenty years. All this took more than hundreds of years in previous times. Skyscrapers rise in every African city right in front of clay huts where many

people still sleep on the floor. A teacher who uses a textbook to teach about Africa will find his teaching about Africa obsolete because conditions change from year to year so quickly that a textbook designed for a number of years cannot keep up with it. Even more important is the rapid pace of change in our own country. The way you and I learned mathematics is already antiquated. Foreign languages are not taught any more the way it was done only ten years ago. What you and I learned in science about the atom as the smallest unit is not true anymore. A physicist told me, that the content of our science textbooks which just came out, is already obsolete. We know that a large part of the occupations of today did not exist twenty-five and fifty years ago. It is reasonable to assume that our children of today will have in twenty five years many occupations which do not exist today and of which we do not know what they are like. What kind of education shall we provide in this world where our knowledge of science, chemistry, technique, resources changes so rapidly that it appears useless to teach today what we believe are facts, and which are not facts tomorrow?

Doctor, Engineer, Builder, Bookkeeper, Artists, Architects. If it is true that the teaching of content, that is accepted knowledge, things we know, is only of limited value because of the rapid change in our times, how can we prepare youngsters for a world of tomorrow? It appears that one answer is the development of the concept of creativity. It is possible that creativity has come into the focus of our intention because it may be one way of meeting the problems of tomorrow. Why creativity more than the thorough study of the past, of history? Why creativity more than the learning of as many laws of physics as possible? Because we have to train our children in this time of rapid change, to constantly placing things in new perspectives, see things in new combinations as it is emphasized in a modern mathematics program. We may look at creativity as an attitude and it is this attitude we have to foster in children so that they are ready to accept productions of novelty, either their own or of others. It is an attitude of open mindedness which is the best preparation for a changing world, that permits easy detachment from existing concepts and yet it requires definite commitment to a "deep need to understand something, to master a technique, to render a meaning" as J. S. Bruner says in his new book On Knowing. Experiments have shown that "alertness depends on a constant regimen of dealing with environmental diversity of exposure", that is, academic

learning, art, science, sports, dance, dramatics, creative writing and all this at an early age, seem to be conditions favoring creativity.

There is still another reason why creativity is gaining widespread attention. The reason is that a new approach has given us, in a more systematic fashion and in much greater depth, insight into the working of creativity. This is the psychoanalytic approach which in Getzels and Jackson's words (the authors of Creativity and Intelligence) is considered the most influential one to creative thinking in the psychological literature and steadily gaining in preeminence. The psychoanalytic approach helps us to analyze the powers that produce creativity since the origins of creativity lie in the unconscious or preconscious.

Most recent research has given convincing evidence why creativity is a paramount importance in the learning process. Of course, this is of particular interest to us educators. The research I wish to refer to is conducted by Getzels and Jackson and published in the book Creativity and Intelligence mentioned before. They state the question briefly formulated: can a person make up through creative ability what he is lacking in intelligence? I repeat in other words; can the highly creative person match the more intelligent person in terms of achievement? If this should be so, we definitely will not look only for the person with high IQ to save mankind or to make our country superior, we will have to look with equal urgency for the person with the high CQ, the high creative quotient. Let us see what Getzels and Jackson found out in answer to this question. They established two different groups of adolescents for their study. The one group was selected according to those students who wish to learn the known things, learn things that are already predetermined, learn problems already solved, learn given answers to questions. The other group was composed of those who wish to revise the known, explore what is not known and construct possible new forms. The person of the first group tends toward the usual and expected, the person of the second groups tends toward the novel and the speculative. The first favors certainty, the second favors risk. The first group favors intellectual acquisitiveness and conformity, the other favors intellectual inventiveness and innovation. The first focuses on knowing what is already discovered, the other on discovering what is yet to be known.

It is not the issue here whether the one is better or worse, whether the one is more desirable or less desirable. Both have their place, both are needed. We are agreed on that.

Getzels and Jackson set up one group high in intelligence as per IQ tests and not as high in creativity as per creativity tests. The other group was high in creativity but not as high in intelligence. To be specific, the high intelligence group was made up of the top 20% of the IQ group but below the 20% in the creativity group. (Chart on blackboard). The creative group was made up of the top 20% of the creativity test but below the top 20% in the IQ group. The comparison of the two groups produced surprising results. Both groups were exposed to the same achievement test and both groups were compared in regard to the results of the achievement test. The comparison showed that the high IQ group was significantly above the average of the total school population in academic performance according to the standard achievement tests. This was not surprising. However, the high creative group also was significantly superior and above average of the total school population and this is surprising. This group happens to be below the average in IQ of the total school population. (Chic. Univ. high intell. group mean 150 IQ, mean of creative group 127, mean of total school 132.) The high IQ group was 23 points above the creatives in IQ, yet the achievement scores of both groups were equally superior to the achievement scores of the total school population as a whole. In other words, the creative group was achievement-wise just as superior above the average as the high IQ group. This answers the question stated a while ago: can a person make up through creative ability what he is lacking in intelligence? Can the highly creative person match the mere intelligent person in terms of achievement? The answer appears to be yes according to this research. (However, it does not mean that a low IQ, or below average IQ person who is highly creative can match the high IQ achievement-wise. 100 IQ person can not. Cut off point probably between 115 and 120 IQ.)

What conclusions can we draw from this? We may realize that the highly creative, but lower IQ student will not be a drawback in the class of highly intelligent ones (IQ wise), because there is evidence that he can achieve just as high. The comparison also shows that the abilities assessed and measured as to creativity account for the superiority in academic achievement in the creative group. In other words, the capacity to innovate, to construct, to differ from accepted patterns, makes up for the lack in IQ when it comes to academic

achievement. Or we can also say, in order to achieve, creativity helps you just as much as intelligence does, provided you are not below a certain intelligence level.

I think this is an extremely important finding and will change our concepts of selection of able people. Once creativity tests are perfected, it might very well change admission policy to a school like ours, to colleges, change the design of examinations and admission tests. I know that this has already occurred at several institutions of higher learning. At present certain distinctions are missing in the selection of the “right” person: he who has great knowledge may not be a great discoverer of knowledge; he who has phenomenal memory appears to be brilliant but not be capable of an original thought. In our efforts to recognize the importance of creativity, certain distinctions seem to emerge. The distinction between systematic, accumulated academic knowledge and disorderly, divergent creativity; the distinction between the ability to reproduce ideas and to originate them. In fact, we would like to see as criteria for the selection of the most able person a combination of the IQ and the CQ. An IQ test should include elements or characteristics of creative ability.

There are a few other results of the same research by Getzels and Jackson which may be of interest to you:

- A) Is it possible that the high creative ones were more motivated than the high IQ ones because they achieved as well? Answer: no, motivation was not a factor that would explain the result. High creative ones were not more motivated.
- B) In spite of the fact that the high creative ones were less favored by the teachers than the high IQ ones, they achieved as well as the high IQs.
- C) The high creative ones value other things higher than those that lead to success. They were not success oriented, while the high IQs were.

What does creativity look like? How does it manifest itself? I will give you a few illustrations. First from Getzels and Jackson and then from our own laboratory, our own school. (Getzels: page 101 and 100, then our own illustrations.)

Can creativity be taught? Certainly not, in a sense. We cannot teach the passion of an inspiration, not the intuitive quality of creativity. We can not teach the instinctive impulse

leading to a creative thought, much less can we arrange for the conflict in the unconscious which is the source of creativity, according to Freud.

What can we do as teachers and parents to bring out creativity in the educative process? How can we encourage and nurture creative ability? How can we foster the ability of enterprising, daring thinking? In the first place, we can set a favorable climate toward curiosity, originality and the joy of discovery; we can emphasize constructive, innovating thinking as well as acquisitive thinking. Learning, school learning and creativity are not mutually exclusive. Learning and creativity are compatible. (Elaborate)

At what age do we start with a climate for creativity? In early childhood, play and creativity may be almost identical. All psychological investigations in creativity go back to early childhood because the ways of childhood play bear the characteristics of creativity. Toys are used as extensions of dreams, fairy tales spur the imagination for the unlikely, the fancy; dolls can be transfigured to anything fantasy requires. There must be time for free play and exploration at almost any age, time to read a fairytale, time to read and write a poem. If a child is in early childhood deprived of play, deprived of the pleasure of moving toys, putting together and pulling apart, building up blocks and have them tumble down, mixing colors and to draw, to move fast on a tricycle, and to swing back and forth on a swing, watch water turn to ice, discover that fire needs air; if a child is deprived of all this, the urge to discover, to find answers to questions is wilted and deteriorated. It is for this reason that progressive education emphasized early play activities in the nursery and kindergarten with a minimum of interference by teachers in terms of learning. Progressive education did not go beyond the play activities. Now, today we know that directed learning activities can give the same satisfactions as play does without depriving the child of the ordinary play activities. Directed learning in combination with play broadens the base on which the child develops curiosity, incentive, aspirations and hence creative ability. It appears that the combination of free play activity and directed, structured learning on the nursery and kindergarten level provides for a climate of creativity.

A certain climate in the educational environment can promote creative expression and perhaps produce creative performance. Brainstorm sessions were one effort in organized

production of creativity. It is questionable whether the creative thought, the inspiration, can be produced in an organized fashion in an artificial setting. However, a climate that allows for bold thinking, free rising ideas, unconfined imagination is certainly conducive to creativity.

Getzels and Jackson mention certain distinctions which can be made to further creativity.

1. A distinction should be made between intelligent thinking and creative thinking. Creative persons are intelligent, yet the person must not be highly intelligent in order to be creative.
2. Distinction needs to be made between independence and unruliness, between individuality and rebelliousness. We have seen that teachers preferred high IQ children over the highly creative ones. This may be explained by the assumption that the teachers thought that their behavior may have its source in malice rather than in independence of thought. Their wit may be seen as threatening and perceived as hostility. While teachers would not be annoyed when a student gives an original answer which differs from what is expected, it upsets the whole grading system; marking the answer wrong would not be fair and marking it right seems odd to the teachers. Anyway, the teacher himself has to start thinking all over again and that is annoying too. Peers feel the same way and are quickly ready to label the unusual answer “crazy” and “silly”. If we wish to nurture curiosity, a zest for discovery, we will have to allow for greater self-determination; give credit to a nonconforming idea.
3. Distinction has to be made between healthy solitude and morbid withdrawal, between preferred separateness and compulsive isolation as Getzels and Jackson said. With this distinction we enter the child psychology and an astute teacher will be able to observe whether withdrawal occurs because time for reflection in solitude is needed for constructive thinking or whether it is just an escape from challenges the child cannot face for reasons of neurotic anxiety. Some children need to be apart from the group to formulate their own questions, to produce creative answers, need to go ahead at their own pace, need to have their own way in dealing with ideas (Elaborate on “togetherness” and “groupiness”)
4. Distinction has to be made between tolerance for uncertainty and vacillation, between ability to delay a choice and indecisiveness. Since creative persons might find many

answers to one question, many solutions to one problem, they may not be certain with immediacy, [or] need time to make a choice. It must not reflect irresolution nor indecisiveness.

5. Distinction should be made between remembering and discovering, between memory and knowledge, between the quiz-kid and the original thinker. Of course, we have to provide an educational environment in which both is possible: opportunities for discovering as well as for remembering; provisions need to be made in the curriculum for playing with facts and ideas as well as for repeating them.
6. Distinction should be made between an unattainable goal and a difficult goal. We have heard Dr. Wattenberg two weeks ago dwelling on this question in relation to the self-concept of the child. He pointed out that wherever the self-concept is unrealistically distorted either in the direction of lack of confidence or over-confidence, learning is in one form or another inhibited. This also pertains to the creative child. If the problem presented to the child is too difficult to solve, it may lead to discontent and resignation, while a difficult but attainable goal leads to aspiration and exertion, which was also pointed out by Dr. Wattenberg. A goal attained with effort is more rewarding than without effort. Creativity is involved when the task requires the mind to stretch for achievement. And we heard from Dr. Tourkow last week that frustration is a necessary link in the learning process. This is also true in the creative process. It often happens when we are troubled by a problem, feel frustrated by it, that the inspiration for a new solution comes.

We cannot teach the creative inspiration, we cannot teach creativity as such. If that were true, we could make out of every person a writer, an artist, an inventor. We can, however promote creativity by setting a climate, which reflects attitudes of teachers as well as of children such as open-mindedness, of accepting the unusual independent thought, of tolerating the venturesome mind. I would not want to conclude without referring to certain pitfalls in the efforts for providing a climate for creativity. This pitfall is permissiveness. Creativity must not be a disguise for permissiveness, "letting the child do what he wants" must not be allowed in the name of creativity. It is easy to confuse the issues and we must not fall back into the mistakes of progressive education which too readily mistook impulse

satisfaction for creative action. Creativity is a commitment, a deeply felt, sincere need to understand something, a commitment to mastery of a technique that helps to solve a problem, an undeterred striving for an answer, rendering meaningfulness to play undiminished by infantilism. Creativity requires respect for materials, for the form of achievement, for mastery. Creativity requires ego strength for commitment, for independence, for nonconformity in a mature way. As soon as we recognize that a certain activity serves in the name of creativity infantile, immature, hostile purposes, we have to deal with it on an entirely different level which has nothing to do with creativity.

I hope my remarks have contributed to the clarification of present and future needs. In a fast changing world it is the creative mind which is more adapted to deal with it. In a titanic race between nations it seems to be the inventive, original, independent thinkers who may decide the race. These are the reasons why nurturing and promoting creativity is an important preparation for the future of our youth.