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Dear Mr. and Mrs. Copernicus: We Regret to Inform You...

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There are certain unavoidable pitfalls that we are bound to stumble into if we accept the belief that giftedness can be defined by 3 to 5% of the normal curve. The first pitfall is the belief that giftedness and IQ are one and the same. (Please note that I said IQ rather than intelligence because most psychometric theorists believe that IQ tests measure only a limited part of the psychological construct called intelligence.) We can plot normal curves using IQ test scores, but let us not accept uncritically the conclusion that IQ tests truly measure all of the many factors that result in intelligent or gifted behavior. Whether we are willing to admit it or not, if we accept the 3 to 5% myth, then we will implicitly and operationally' also accept the equally unsupportable myth that giftedness and IQ are the same thing.

A second pitfall emanating from the 3 to 5% approach is that we are likely to view "the gifted" as a fixed population, one that always can be preselected for special services. This almost universal practice of preselection effectively closes the door to all other youngsters and says, in effect, that no matter what kinds of outstanding abilities a nonselected individual shows, we will refuse any special program assistance because the student is not one of the prechosen few. Such absolutism in our identification procedures is ironic for a field that prides itself on flexibility of thought and alternative approaches to the solution of problems.

Two Types of Giftedness

Anyone who reviews the vast number of research studies dealing with characteristics of gifted persons will inevitably conclude that there are really two types of giftedness. I will refer to the first type as "schoolhouse giftedness" and the second as "creative/productive giftedness." Before going on to describe each type, I want to emphasize that:

1. both types are equally important,
2. there is usually an interaction between the two types, and
3. special programs should make appropriate provisions for encouraging both types as well as the numerous occasions when the two types interact with one another.

Schoolhouse Giftedness

Schoolhouse giftedness might also be called test-taking or lesson-learning giftedness. It is the kind most easily measured by IQ or other cognitive ability tests, and for this reason it is also the type most often used for selecting students for entrance into special programs. The abilities people display on IQ and aptitude tests are exactly the kinds of abilities that are most valued in traditional school learning situations. In other words, the games people play on ability tests are similar in nature to the games that teachers

require in most lesson-learning situations. Research tells us that students who score high on IQ tests are also likely to get high grades in school. Research also has shown that these test-taking and lesson-learning abilities generally remain stable overtime. The results of this research should lead us to some very obvious conclusions about schoolhouse giftedness: it exists in varying degrees, it can be identified through appropriate assessment techniques, and we should therefore do everything in our power to make appropriate modifications for students who have the ability to cover regular curricular material at advanced rates and levels of understanding. Curriculum compacting and other acceleration techniques should represent an essential part of any school program that strives to respect the individual differences that are clearly evident from scores yielded by cognitive ability tests. But let us not forget that IQ scores correlate only from .40 to .60 with school grades. The tests, therefore, account for only 16 to 36% of the variance between these two indicators of potential. Many youngsters who are moderately below the top 3 to 5% in measured ability clearly have shown that they can do advanced level work. To deny them this opportunity would be analogous to forbidding a youngster from trying out for the basketball team because he or she missed the "cut-off height" by a few inches! Basketball coaches are not foolish enough to establish *inflexible* cutoff heights because they know that such an arbitrary practice will cause them to overlook the talents of youngsters who may overcome slight limitations in inches with other abilities such as drive, speed, team work, ball handling skills and perhaps even the ability and motivation to outjump taller persons who are trying out for the team. As educators of gifted and talented youth, we can undoubtedly take a few lessons about flexibility from coaches!

Creative/Productive Giftedness

If scores on IQ tests and other measures of cognitive ability only account for a limited proportion of the common variance with school grades, we can be equally certain that these measures do not tell the whole story when it comes to making predictions about creative/productive giftedness. Before defending this assertion with some research findings, let us briefly review what is meant by this second type of giftedness, the important role that it should play in programming, and therefore, the reasons we should attempt to assess it in our identification procedures—even if such assessment causes us to look below the top 3 to 5% on the normal curve.

Creative/productive giftedness describes those aspects of human activity and involvement where a premium is placed on the development of original material and/or products that are purposefully designed to have an impact upon one or more target audiences. Learning situations that are designed to promote creative/productive giftedness emphasize the use and application of information (content) and thinking processes in an integrated, inductive, and real-problem-oriented manner. The role of the student is transformed from that of a learner of prescribed lessons to one in which she or he uses the modus operandi of a firsthand inquirer. This approach is quite different from the development of lesson-learning giftedness which tends to emphasize deductive learning, structured training in the development of thinking processes and the acquisition, storage, and retrieval of information.

Why is creative/productive giftedness important enough for us to question the "tidy" and relatively easy approach that traditionally has been used to select the top 3 to 5%? Why

do some people want to rock the boat by challenging a conception of giftedness that can be conveniently defined and easily measured? The answers to these questions are simple and yet very compelling. History tells us that it has been the creative and productive people of the world, the producers rather than consumers of knowledge, the reconstructionists of thought in all areas of human endeavor, that have become recognized as “truly gifted” individuals. History does not remember persons who merely scored high on IQ tests and/or learned their lessons well.

If we could prove that all (or even most) creative producers scored in the top 3 to 5% on the normal curve there would be no justification for the argument being presented here. But let us examine what some of the research tells us about highly creative and productive people and perhaps we can make a case for (a) expanding the range of test scores used in identification and (b) including other forms of information in the identification process.

Cox (1926) conducted an extremely comprehensive study in which she and four other persons (including Lewis Terman) estimated the IQs of 282 well-known 19th century persons. Listed below are the names of only a few of the persons who would *not* have been included in a gifted program if we set the IQ cutoff score at 130:

Cervantes	Lavoisier	Jenner
Copernicus	DeFoe	Lincoln
Faraday	Fielding	Linnaeus
Raphael	Harvey	Locke
Rembrandt	Ben Johnson	Swift
Luther	Haydn	Madison
Goldsmith	Bach	LaFontaine

In a study of the relationship between the contributions of physicists and biologists (based on such criteria as patents granted and the number of publications), Harmon (1963) found that individuals receiving high ratings as professional scientists could not be predicted from any of the academic proficiency information. He also discovered that for nearly half of the correlations computed, the direction of the relationship between these traditional measures of academic success and professional accomplishments was negative. In two studies of professional mathematicians, Helson (1971), and Helson and Crutchfield (1970) found no significant IQ score differences between mathematicians judged by their peers as performing particularly good research and a control group of low productive mathematicians. There were, however, differences between the groups

on a variety of personality measures purporting to assess proclivities for creative behavior. Similar results have been reported in studies of chemists and mathematicians (Bloom, 1963), psychologists (Marston, 1971), research scientists (MacKinnon, 1968), artists (Barron, 1963), and architects (MacKinnon, 1968).

In an extremely comprehensive review of occupational studies dealing with traditional indicators of academic success and postcollege performance, Hoyt (1965) concluded that traditional assessments of academic success have at best a modest correlation with various indicators of success in the adult world. The review included forty-six studies in seven occupational areas including business, teaching, engineering, medicine, scientific research, journalism, government, and the ministry. The criteria for determining the level of accomplishment varied from salary level to numbers of publications to behavioral performance ratings. Hoyt asserted that sufficient evidence had been aggregated to warrant a conclusion that "there is good reason to believe that academic achievement (knowledge) and other types of educational growth and development are relatively independent of each other" (p. 73). Similar conclusions were reached in analogous studies conducted by Ghiselli (1973), Creagar and Harmon (1966), and Baird (undated paper).

A study conducted by the American College Testing (ACT) Program titled, *Varieties of Accomplishment After College: Perspectives on the Meaning of Academic Talent* (Munday & Davis, 1974), resulted in the following conclusion:

> The adult accomplishments were found to be uncorrelated with academic talent, including test scores, high school grades, and college grades. However, the adult accomplishments were related to comparable high school non-academic (extra curricular) accomplishments. This suggests that there are many kinds of talents related to later success which might be identified and nurtured by educational institutions (abstract).

In summary, there is a substantial body of evidence which suggests that measures of intellectual or academic potential be used only for initial screening purposes or to establish minimum performance levels, and that greater use be made of indicators of creative thinking, ratings of past accomplishments, and ratings of creative production. Wallach (1976) strongly supported placing more emphasis on work samples as evidence of creative productivity. Hoyt (1965) suggested that greater reliance be placed on "profiles of student growth and development" rather than traditional means of determining academic success. His plea is not to lower standards but to individualize them more by developing checklists of accomplishments that can be indications of a number of things which students can do, and do frequently to demonstrate their potential.

The studies reported also raise some basic questions about the use of tests in making selection decisions. McClelland (1973) has pointed out that tests have tremendous power over the lives of young people and they have been especially efficient devices for screening out Black, Spanish speaking, and other minority group members. To quote McClelland:

> Why should intelligence or aptitude tests have all this power? What justifies the use of such tests in selecting applicants for college entrance or jobs? On what assumptions is the movement based? They deserve careful examination before we go on rather blindly promoting the use of tests as instruments of power in the lives of many Americans. (p. 1)

These studies represent only a small part of a large body of research that has been summarized elsewhere (See Renzulli, Reis, & Smith, 1981). The full range of research addresses a question that helps to clarify the issue: if IQ or ability scores cannot by themselves account for high levels of creative/productive giftedness, what other factors must be taken into account? The research tells us that creativity and task commitment are equally important characteristics in the making of a gifted person; and that these two additional types of abilities can be identified effectively when included in a more flexible identification system. What is even more important from an educational programming perspective is that high levels of creativity and task commitment can be developed in students who fall somewhat below the sanctimonious 3 to 5%. To deny youngsters opportunity to develop high levels of interest, involvement, expressiveness, and advanced level productivity because they missed an arbitrary and indefensible cutoff point nothing short of educational hypocrisy.

As was the case with schoolhouse giftedness, the research leads us to some obvious conclusions about creative/ productive giftedness: it exists in varying degrees, it can identified through appropriate assessment techniques, and we should therefore do everything in our power to make appropriate modifications for students who have the ability to engage in high levels of creative and productive endeavor. And let us not forget that the greatest payoff for both the individual and for society has come from persons who rather realized. their potential in creative/productive ways rather than through mere lesson learning.

Pay Off Research

In a series of research studies recently completed at the University of Connecticut (Reis, 1981) the quality of student productivity between two groups was compared. One group consisted of subjects that scored in the top 5%, as traditionally measured by tests of academic ability. The second group consisted of students who scored in the top 15 to 20 below the top 5%. This second group would not ordinarily have been eligible for services; however, they were allowed to participate in the gifted program (on an equal basis with the first group) due to the greater flexibility allowed by the Revolving Door Identification Model. The results of the research showed that there were no significant differences between the two groups on 15 measures of product quality. The most obvious conclusions that can be drawn from this research is that high levels of creative productivity can[1] achieved by students below the top 5% if we use a more flexible identification process and if we emphasize creative/productive giftedness as well as schoolhouse giftedness our programming models.

[1] By operationally, I mean that we will use IQ tests not only to define giftedness, but also to make decisions about who is accepted and rejected for programs that are designed to develop gifted behaviors in young people.

Let us end our discussion about the 3 to 5% myth on more positive note. The abilities that cause youngsters to fall into the highest ranges of the normal curve are important, and by including these students in our gifted pro grams we have been serving an appropriate part of the gifted population. But the evidence clearly tells us that there are other youngsters who are equally capable of high levels accomplishment in both types of giftedness. Research experience, and plain old common sense also tell us something that is undeniably important about students who are well above average in ability. *The greatest gift of all is the person's desire to create and produce. It is what we as teachers do to help stimulate and fulfill this desire that ultimately will determine if we are really worthy of being called teachers of the gifted.*

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