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AUTHOR Feldhusen, John F.
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ABSTRACT

It is clear that highly talented, precocious youth who are motivated to develop their talents need teachers, curriculum, and peers who are able to operate educationally at advanced levels. They should be provided the educational challenge needed to sustain and encourage development of their talents to the highest levels of creative achievement or expertise. Definitions of terms and constructs are considered. A case is developed for special schools or classes for these students. Issues of identification of talented youth, teachers, and peer experiences are considered. Specific counseling services directed toward gifted and talented youth are also considered. A variety of learning experiences is consequently needed. Optimum development and motivation of talented students can best be realized when there is good personal, social, educational, and career planning with goal setting and effective metacognitive control and self-regulation on the part of talented youth. Counseling approaches to guide and support the developmental process are described which are designed to help youth identify and plan for their own optimum development. Contains 37 references. (Author/EMK)

Talent Development, Expertise, and Creative Achievement

John F. Feldhusen
Purdue University

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All scientific theories use metaphors to represent key, salient, or central concepts or theories (Sfard, 1998). Thus, our metaphor for learning as "knowledge" suggests an entity to be acquired or transmitted and we conceive of the human mind as a place to put or deposit knowledge. Sfard calls this the "acquisition metaphor." The field of gifted education also has its major metaphor in the concept of "gift," something given to some but not to all. Dweck (1986) refers to this as the "entity" concept of ability which contrasts with an "incremental" conception of ability as something that grows or is growing with effort. Our metaphors and their names lead to particular ways of thinking and activities that get locked in and block us from seeing the value of new and better concepts and perpetuate beliefs and values that are no longer viable.

So it is with the metaphor and terms "gift," "gifted," "giftedness," and "gifted education." It seemed to serve us well as an analog to Spearman's g during the years of Terman's test development and longitudinal research, the Marland study (1972), and during the early years of school-based development of programs for the gifted in the United States. However, a rising chorus of criticism of the metaphor and the programs (Cox, Daniel, Boston, 1985) as well as new research and theory suggesting a need for

reconceptualization (Bloom, 1985; Gardner, 1983, 1993; Csikszentmihalyi, Rathunde, & Whalen, 1993; Gagne, 1985, 1993; Feldhusen, 1996, 1997; Sternberg, 1986, 1981) give rise to a need to reexamine the "gift" metaphor and seek new direction and understanding of how superior ability arises, develops, and achieves fulfillment in youth. The metaphor I shall pursue, surely not a new one in the field of human abilities, is "talent" and "talent development."

I define "talent" as a complex of genetically influenced and environmentally-determined aptitudes, skills, and personal characteristics that are seen by the culture and tradition as valuable to society. I will also stress that "talent" is not an entity or gift that some have and others do not but rather an emergent complex of abilities that are learned and facilitated in their development by the culture and circumstances of life.

The term "talent" as a metaphor for our efforts on behalf of precocious youth has defined meanings that can serve us well. It is not an arbitrary word or designation. Humpty Dumpty asserted personal arbitrariness when he said "When I use a word it means just what I want it to mean--neither more nor less." Alice was right, of course, in replying that "The question is whether you can make words mean so many different things." My definition of talent, as given above, is neither arbitrary nor without meaning. It is a performance complex that is either emerging or full blown and a useful construct for our work with precocious youth, especially when we recognize that precocity is relevant to specific areas of performance or aptitude.

EDUCATING TALENTED YOUTH

Students who are academically or artistically talented need curricular and instructional experiences commensurate with the levels of their abilities. To be talented is to be precocious or advanced in abilities beyond what is normative for one's age. Talented youth have developed skills to an advanced level in part because of genetic endowment or the "gifts", as Gagne (1993) calls them, but mainly because they have had excellent nurturing opportunities at home and at school, as Ericcson (1996) forcefully tells us. Talents, aptitudes, skills, or abilities all emerge as an interaction between basic abilities and environmentally induced educational experiences.

My own interests lie not so much in the theoretical structures that underlie talent development but rather in the educational conditions that fosters talent development. It is clear, as I see it, that highly talented, precocious, youth who are motivated to develop their talents need teachers, curriculum, and peers who are able to operate educationally at advanced levels and provide the educational challenges that talented youth need to sustain and encourage the development of their talents to the highest levels of creative achievement or expertise. This means that they should be in special schools and/or special classes at accelerated levels of instruction. In such classes curriculum and instruction is fast paced, high level, more abstract or intellectual, and they afford more opportunities for in-depth study and discussion.

One method of opening doors to such classes is through the simple processes of acceleration. This means that students are allowed to enter school early, move forward in grade level earlier than would be typical for their age, or to take one or more advanced classes in subjects related to their talents while remaining in their other age-

determined grade level classes. Thus, a four year old may be admitted to school, an eight year old double-promoted in one year, an eleven year old admitted to high school early, or a fourteen year old admitted to college. Several of the above happened to the great founder and father of our field of gifted education, Lewis Terman. Thus, it was not surprising that later in his life in his study of gifted children he investigated their acceleration experiences in school and found that those who had been grade advanced achieved at higher levels in their life careers.

Identification

Selection of, or opening doors to, youth for advanced or accelerated learning experiences has been mismanaged in American schools by the use of identification processes that are used to determine which youth are or are not qualified for special educational programs, by labeling the youth as "gifted," and by offering bland, often useless enrichment educational experiences (Cox, Daniel, & Boston, 1985). The educational offering often is appropriately seen by American school critics as potentially good for students of all levels of ability, and therefore we conclude that they are not at an appropriately challenging level for so-called "gifted" students.

Labeling youth is generally abhorred in American education but perpetuated by devotees of "gifted education." I judge it immoral and ethically wrong and harmful to label some children who have supposedly inherited their abilities as "gifted" and thereby imply that all the rest have no "gifts." All human abilities are measured as continuous variables, not as dichotomous or present-absent.

There is also excess reliance on intelligence tests in the United States to identify or select youth for the special programs, but our major concern should be to identify youth's current achievement levels in specific talent areas as the Bloom talent development project (1985) and the more recent Csikszentmihalyi, Rathunde, and Whalen (1993) studies taught us so well. The terms "gifted" or "gifts" or "giftedness" should be abandoned since they have no explicit psychological validity. Instead, we can talk about "skills," "aptitudes," "abilities," and "talents" as our major concerns.

Assessment of "aptitudes," "abilities," "skills," and "talents" of precocious youth is best done with off-level achievement testing for academically talented youth and with portfolios or auditions for artistically talented youth. Rating scales are also useful in the hands of teachers who have had ample time to observe students' behaviors in challenging learning situations.

Selection of students for special honors, or accelerated classes; for International Baccalaureate programs; or for special schools should be guided by precocious students' achievement levels and academic needs, not by their general classification as "gifted." Abilities as revealed by tests, portfolios, or rating scales should guide the programming process with due attention to motivational factors as well as abilities (Pintrich & Schunk, 1996). Challenging academic or art classes demand high level motivation and metacognitive self management and self regulation skills that must be present as students enter or are evoked by teachers of these classes.

Teachers

Teachers in any of the services described so far need to be highly proficient or knowledgeable in their subject matters and in the nature and needs of precocious and talented youth. In many American states the education authorities have declared a need for special training to work with talented and precocious youth and a certification to teachers who have received the training. We conducted an extensive study of teachers who had and had not received such training in our program at Purdue University (Hansen & Feldhusen, 1994) and found that teachers who had been trained exhibited far superior and highly appropriate teaching behaviors in work with talented and precocious youth. The teachers were observed and rated by trained observers who did not know the teachers' training status and by academically talented students in their classes and both sets of data showed consistently superior and appropriate teaching by the trained teachers working with academically talented youth. Above all we found that the trained teachers engaged academically talented students in much more intellectual, abstract, creative, and problem solving activities while they were interacting with the subject matter, as compared with the untrained teachers.

The Range of Instructional Services

Because youths' talents are diverse and the levels of talent vary a great deal, a diversity of educational options and services is needed. Schools and communities also differ a great deal in the availability of options, services, and resources for the education of talented youth as well as in the degree of support or opposition to such services. Thus, eclecticism (Feldhusen, 1998a & b) is often essential in developing

services and programs for talented youth. Treffinger (1998) and McCluskey, Treffinger, and Baker (1998) suggests that the concept of "levels of service" guide programming efforts so that some services are offered to all students while others are offered especially for very highly talented students. Feldhusen (1996) has proposed an eclectic model of service for elementary, middle, and high schools from which schools can select the best to meet the needs of their students. Feldhusen's service model is presented in Figure 1.

For highly academically talented youth the model of a special school such as the Pineview School at Sarasota, Florida is ideal. Pineview is a public school for highly able youth in grades 2-12. Similarly the Emerson School at Gary, Indiana offers full-time school assignments for artistically talented youth in grades six to twelve. The curriculum and levels of instruction in these schools fits well the capabilities and needs of talented and highly precocious youth.

Alternatively special full-time classes for highly talented youth can be offered at the elementary level embedded in an elementary school followed by special accelerated classes in middle and high school. In the middle and high school these classes, often called honors or Advanced Placements can be augmented to meet the needs of highly precocious and talented youth by letting them take advanced high school classes ahead of schedule or by arranging for high school students to take college or university courses in the areas of their special talents. Several states now allow students to count the credits from such courses toward high school graduation, and a number of states offer financial aid to pay the tuition of high school students who are enrolled in them.

The International Baccalaureate program (Poelzer & Feldhusen, 1997) offers another comprehensive model that can meet the needs of academically talented youth. The requirements of the program are rigorous and challenging for precocious youth. Less programmatic but also quite rigorous and challenging are the College Board Advanced Placement courses and tests. With proper planning, guidance, and an early start, talented students can be engaged in sound talent development experiences.

In communities where the schools offer no special classes or programs for academically or artistically talented youth, parents can look to area colleges or universities for early admission on a part- or full-time basis and/or to special Saturday or Summer programs (Feldhusen, 1991). In schools where negative peer pressure and school personnel are antagonistic to talent development programs, early college admission is especially desirable, especially if the student can attend a college close to home and live at home the first year or two. Otherwise, several colleges now offer admission to talented students after the sophomore year of high school. The Texas Academy of Math and Science at Denton, Texas is an example of such a program.

Finally, private schools such as the Sycamore School for The Gifted in Indianapolis, Indiana offer potentially good academic services for talented youth but the cost is prohibitive for many families. Some parents have even chosen to home-school their talented children to help them avoid negative peer pressures and to guide their learning in challenging and appropriate educational experiences. Hopefully one or another of the alternative educational routes will sustain the talent development

momentum already present in youth and evoke new levels of motivation and commitment that will lead them to personal and career fulfillment at a high level.

COUNSELING SERVICES

Optimum development and motivation of talented students can best be realized when there is good personal, social, educational, and career planning; goal setting; and effective metacognitive control and self regulation on the part of talented youth. While much of talent development may depend on chance factors as noted by Tannenbaum (1983) or the unpredictable "crystallizing" experiences described by Walters and Gardner (1986), it still seems safe to assert that purposeful efforts to guide and support the process will enhance the potential for long-range, high-level achievement and self-fulfillment.

Feldhusen and Wood reported (1997) a "Growth Plan" process that is best led by school counselors who are well trained in talent development and given time for meetings with talented youth (Figure 2). Groups of 12-20 youth meet one hour a week for three or four weeks in the spring each year and engage in inventorying their aptitude test scores, grades, honors and awards, interests, and learning styles. From the review of the inventory they move on to set short- and long-term educational, career, personal, and social goals. Then personal profiles are developed based on the information collected (Figure 3). With the inventory and goals as guides, they move on to select classes to take in the next school year, extracurricular activities, and other growth opportunities outside or beyond school (See Figure 1). The latter might include

enrollment in classes at a college or university, summer and Saturday programs, art and music lessons or classes at private facilities, tutoring, mentorships, or computer-based courses. The Growth Plan is then completed (Figure 3).

With a tentative plan in mind for the year ahead, they are then urged to take the plan home for discussion with and approval of parents and to review it with their regular counselor if that person was not the leader of the growth planning meetings. The major goals of the process are to develop planful approaches to talent development in youth, clarify or identify their specific talents, and encourage optimum use of school and community resources for talent development. Our research suggests that a typical middle school or high school student has three or four major talent strengths (Feldhusen, Wood, & Dai, 1998) but the range can be from only one or two up to eleven or twelve. The research also revealed that more than half of the sample studied (n=210) did not have a clear awareness or understanding of their own talent strengths and that they were bored in school much of the time, presumably because the school curriculum and instruction was low level and unchallenging in their areas of talent strengths.

This general approach to talent development moves far beyond the typical "gifted" program, both in the identification and the educational process. It strives to help youth identify their own specific talents and to plan for optimum development of their talents. "Gifted" programs usually carry the identification process no further than the labeling of the general condition of "giftedness" and prescription of all-purpose educational services that stress thinking skills and project work. Rarely do "gifted"

programs engage talented youth in high level, rigorous, and challenging study in their specific talent areas. Talent development programs do.

Peer Relations and Influences

Talented youth need interaction with other youth of similar talents. We completed a study recently of special schools for academically precocious youth in the United States and were impressed with the great power of peer relations among the students. They stimulate one another academically and provide an excellent buffer against the anti-academic influence that is omnipresent in American schools as Steinberg (1996) showed us. We have also seen this phenomenon repeatedly in the summer and Saturday programs at Purdue University for academically talented youth (Feldhusen & Clinkenbeard, 1982; Feldhusen, 1991). In their written evaluations at the end of the programs, students frequently reported the joy of being enrolled in challenging, high-level academic classes without the sarcastic put-down by peers who devalue academic learning experiences.

Talent, Creative Achievement, and Expertise

It seems reasonable or logical to expect that superior talent in youth could or should lead, with proper educational nurturance, parental support, and motivation to expertise or high-level creative achievement in adulthood. Bereiter and Scardamalia (1993) argue that the highest level of expertise in any field is creative achievement.

There is a large literature reporting research on expertise telling us the basic ingredients:

1) large knowledge bases, i.e., both declarative and procedural knowledge;

2) well-organized schema that facilitate knowledge retrieval in problem- or goal-oriented situations;

3) excellence in analyzing and conceptualizing problems, tasks, or goals to be achieved;

4) high rate of success in solving problems;

5) metacognitive efficiency in monitoring all phases of problem solving or goal attainment.

All of these elements of expertise are learned (Ericcson, 1996), but there is no doubt that humans differ in their potentials for learning, in the rate they acquire new knowledge, in the complexity of the cognitive schema they construct, and in how far or high they can carry on the learning process. Spearman's g (1927), recently revalidated by John Carroll in one of the largest factor analyses ever done, underlies fluid intelligence or general thinking skills and is probably a major genetic component of talent that facilitates learning of procedural knowledge. But we must be clear in recognizing that all of talent, expertise, and creative achievement are based on learned knowledge. They are not gifts.

Programs for "gifted" youth often fail to envision long-term goals, creative achievements, and expertise as possible ends of special educational efforts. Quite to the contrary, talent development educational programs, parental support, and

counseling should envision creative excellence, expertise, and high-level achievements as their ends or goals. All instruction along the way must be in Vygotsky's (1978) "zone of proximal development" or beyond current achievement levels but attainable. Feldhusen and Klausmeier (1959) showed empirically that the zone can be ascertained with appropriate testing, and instruction at the next higher and challenging level leads to successful learning.

Sternberg (1998) recently set forth a new model of the cognitive processes that lead to expertise or high-level creative achievement. While first acknowledging that the learning and development process is undergirded by genetic determiners, he asserts that the abilities nevertheless are learned or acquired. They include, in his model, the metacognitive processes of planning and evaluation, learning skills, critical and creative thinking, motivations, and a knowledge base that is both declarative and procedural. All combined can lead to the level of expertise or creative achievement. All are learned (Ericcson, 1996), but as I noted earlier, there are large differences in our capacity and motivation to learn. The overall process from childhood on to adulthood is continuous development of talents or abilities. All tests, as Sternberg notes (1998), be they for intelligence or achievement, are measures of things learned. Both measure levels of learning, but intelligence and aptitude tests are often used to infer aptitude or ability and to predict future achievements.

I conclude that talents are learned abilities that reflect practical or occupational skills, and at high levels indicate precocity or advanced levels of ability. They emerge and develop in youth through tutelage, parental support and nurturance, and a diversity

of experiences in the broad environment in which a child lives. Motivation as evoked by people, events, and things in the environment has a powerful impact on the development of youth talents as does the rise of intrinsic motivation, self-regulation skills, and a sense of self efficacy in youth. Only a relatively small number of youth will combine all these cognitive and connative elements and strive for or attain high-level expertise or creative achievement.

Educational programs for talented youth should help them discover and understand their special talents and the processes that lead to high-level expertise and creative achievement. Counselors and parents can also help them set short- and long-term goals related to the development of their talents, and mentors can provide models of expertise and creative achievement that they may choose to emulate.

Conclusion

Talented youth have the potential to become experts, creative producers, artistic, world-class achievers. Their expertise grows from childhood onward (Sternberg, 1998) and culminates in creative achievements in adulthood (Bereiter & Scardamalia, 1993). Their specific talents are defined in large part by precocity in specific areas of human performance or endeavor. Precocity indicates rapid, advanced development which is best sustained and/or augmented by challenging, high-level learning experiences in the talent areas (Sternberg, Ferrari, Clinkenbeard, & Grigorenko, 1996). Such high-level, fast-paced instruction is often called "acceleration" but Feldhusen, Van Winkle, and Ehle (1996) argue that it is really just

appropriate instruction. Talented youth need knowledgeable and well-trained teachers, supportive parents (Feldman, 1986) and peers whose talents are similar to their own. A variety of advanced learning experiences are needed to meet the diverse needs of talented youth. They should be engaged in analysis of their own talents, learning styles, interests, and motivations; setting short- and long-term personal, social, educational, and career goals; and planning for and organizing their in- and out-of-school learning and growth experiences (Feldhusen & Wood, 1997). Ultimately, talented youth who strive for the highest levels of achievement and self-fulfillment must make a long-term commitment to attain their personal and career goals.

References

Bereiter, C., & Scardamalia, M. (1993). Surpassing ourselves: An inquiry into the nature and implications of expertise. Chicago: Open Court.

Bloom, B. S. (1985). Developing talent in young people. New York: Ballantine Books.

Carroll, L. (1993). Human cognitive abilities: A survey of factor-analytic studies. New York: Cambridge University Press.

Cox, J., Daniel, N., & Boston, B. O. (1985). Educating able learners: Programs promising practices. Austin, TX: University of Texas Press.

Csikszentmihalyi, M., Rathunde, K., & Whalen, S. (1993). Talented teenagers: The roots of success and failure. New York: Cambridge University Press.

Dweck, C. S. (In press). Student theories about their intelligence: Implications for talent and achievement. In R. Friedman (Ed.), The psychological development of the gifted child: The emotional price of excellence. Washington, DC: American Psychological Association.

Ericsson, A. (1996). The road to excellence. Mahwah, NJ: Erlbaum.

Feldhusen, J. F. (1991). Saturday and summer programs. In N. Colangelo & G. A. Davis (Eds.), Handbook of Gifted Education (pp. 197-208). Boston, MA: Allyn & Bacon.

Feldhusen, J. F. (1996). Talent as an alternative conception of giftedness. Gifted Education International, 11(3), 4-7.

Feldhusen, J. F. (1997). Secondary services, opportunities, and activities for talented youth. In N. Colangelo & G. A. Davis (Eds.), Handbook of gifted education (pp. 547-552). Boston, MA: Allyn & Bacon.

Feldhusen, J. F. (1998a). A conception of talent and talent development. In R. C. Friedman & K. B. Rogers (Eds.), Talent in context: Historical and social perspectives (pp. 193-209). Washington, DC: American Psychological Association.

Feldhusen, J. F. (1998b). Developing student talents. In D. J. Treffinger & K. W. McCluskey (Eds.), Teaching for talent development (pp. 27-34). Sarasota, FL: Center for Creative Learning.

Feldhusen, J. F., & Clinkenbeard, P. M. (1982). Summer programs for the gifted: Purdue's residential programs for high achievers. Journal for the Education of the Gifted, 5, 178-184.

Feldhusen, J. F., & Klausmeier, H. J. (1959). Achievement in counting and addition. The Elementary School Journal, 59(6), 388-93.

Feldhusen, J. F., & Moon, S. M. (1995). The educational continuum and delivery of services. In J. L. Genschaft, M. Birely, & C. L. Hollinger (Eds.), Serving gifted and talented students (pp. 103-121). Austin, TX: Pro-Ed.

Feldhusen, J. F., & Wood, B. K. (1997). Developing growth plans for gifted students. Gifted Child Today, 20(6), 24-26 and 48-49.

Feldhusen, J. F., Van Winkle, L., & Ehle, D. (1996). Is it acceleration or simply appropriate instruction for precocious youth? Teaching Exceptional Children, 28(3), 48-51.

Feldhusen, J. F., Wood, B. K., & Dai, D. Y. (1998). Gifted students' perceptions of their talents. Gifted and Talented International, 12(1), 42-45.

Feldman, D. H. (1986). Nature's gambit: Child prodigies and the development of human potential. New York, NY: Basic Books.

Gagne, F. (1985). Giftedness and talent: Reexamining a reexamination of the definition. Gifted Child Quarterly, 29(3), 103-112.

Gagne, F. (1993). Constructs and models pertaining to exceptional human abilities. In K. A. Heller, F. J. Monks, & A. H. Passow (Eds.), International handbook of research and development of giftedness and talent (pp. 69-87). New York: Pergamon Press.

Gardner, H. (1983). Frames of mind: The theory of multiple intelligences. New York: Basic Books.

Hansen, J. B., & Feldhusen, J. F. (1994). A comparison of trained and untrained teachers of gifted students. Gifted Child Quarterly, 38(3), 115-123.

Marland, S. (1972). Education of the gifted and talented: Report to the Congress. Washington, DC: U.S. Government Printing Office (Document 72-5020).

McCluskey, K. W., Treffinger, D. J., & Baker, P. A. (1998). The amphitheater model: An approach to talent recognition and development. In Treffinger, D.

J. & McCluskey, K. W. (Eds.). Teaching for talent development: Current and expanding perspectives. Sarasota, FL: Center for Creative Learning.

Pintrich, P. R., & Schunk, D. H. (1996). Motivation in education. Englewood Cliffs, NJ: Prentice Hall.

Sfard, A. (1998). On two metaphors for learning and the dangers of choosing just one. Educational Researcher, 27(2), 4-13.

Spearman, C. (1927). The abilities of man: Their nature and measurement. New York: Teachers College Press.

Steinberg, L. (1996). Beyond the classroom. New York: Simon & Schuster.

Sternberg, R. J. (1986). Conceptions of giftedness. New York: Cambridge University Press.

Sternberg, R. J. (1991). Giftedness according to the triarchic theory of human intelligence. In N. Colangelo and G. A. Davis (Eds.), Handbook of gifted education (pp. 45-54). Boston, MA: Allyn & Bacon.

Sternberg, R. J. (1998). Abilities are forms of developing expertise. Educational Researcher, 27(3), 11-20.

Sternberg, R. J., Ferrari, M., Clinkenbeard, P. M., & Grigorenko, E. I. (1996). Identification, instruction, and assessment of gifted children: A construct validation of a triarchic model. Gifted Child Quarterly, 40(3), 129-137.

Tannenbaum, A. J. (1983). Gifted children: Psychological and educational perspectives. New York: Macmillan.

Treffinger, D. J. (1998). From gifted education to programming for talent development. Phi Delta Kappan, 79(10), 752-755.

Vygotsky, L. S. (1978). Mind in society: The development of higher psychological processes. Cambridge, MA: Harvard University Press.

Walters, J., & Gardner, H. (1986). The crystallizing experience: Discovering an intellectual gift. In R. J. Sternberg & J. E. Davidson (Eds.), Conceptions of giftedness (pp. 306-331). New York: Cambridge University Press.

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Organization/Address: Purdue University

Telephone: 941-351-8814

FAX:

E-Mail Address: jff@purdue.edu

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