

VS.

SCHOOLING



selecting the exceptionally accomplished individuals were developed after considerable consultation with authorities in each field. We conducted lengthy interviews with approximately 25 talented individuals in each field, their parents, and some of their outstanding teachers. All of the data on pianists, swimmers, and mathematicians have been collected and it is these data we report here.

The individuals we studied represent the most capable Americans we could find who have reached an international level of accomplishment in one of the selected fields. In the majority of cases the individual became highly involved in the field at a relatively early age, usually before age 12. Many positive factors explain why he or she developed this early commitment, continued to work and study for many years, and then reached an exceptionally high level of development.

In spite of the extreme selection of these talented individuals, we believe the contrast of their learning and developmental processes with the learning and developmental procedures used in the schools may provide a useful perspective on both types of development. We will review some of the major contrasts between schooling and talent development, beginning with early learning in the home.

Early Learning and the Role of the Home

In the majority of our cases one or more of the parents (sometimes a sibling or relative) had a personal interest in the talent area and gave the talented individual great support and encouragement for his or her development in the specific talent field. Some of the parents were above average in the talent area. Most of the parents provided a model, at least in

* This article is adapted from a forthcoming book, *Teaching and Learning Conditions for Extreme Levels of Talent Development*. © 1982, Benjamin S. Bloom.

the beginning, of a person who valued the talent area and who exemplified some of the special qualities and lifestyle of a person committed to music, sports, or intellectual activities. In some instances the interest and commitment of a parent was so strong that all members of the family were expected to participate in the area to some extent from an early age. It is hard to see how a young member of such families could resist becoming somewhat involved.

Especially in the early years of three to seven, many of these children were encouraged to explore the field, to participate in home activities in the field, and to join other members of the family in the activity in or out of the home. Small signs of interest and capability in the talent field by any of the children in these homes were encouraged and much rewarded by the parents.

There is great parallel between early learning of some aspects of the talent field and early learning of the mother tongue. In many ways the home is very effective in the development of the language—at least to the forms and patterns used by the adults in that home. While there is some deliberate teaching and correcting of the language, much of it is learned from the parents and older siblings who are the models and users of the language. The language is learned by the child at an optimal time for this development, and the learning is strengthened by the child's need to interact and communicate with other members of the family.

The families in our study of talented individuals take for granted that their children will learn *both* the language and the talent. Parents are models and users of language and they are also models and teachers of the rudiments of the talent field. The child who wishes to be a fully participating member of the family learns both language and the talent field with little or no questions about it being right to do so. Almost never are young children consulted about whether they wish to learn their

mother tongue, and in many of these homes it was also assumed that the children would wish to learn the talent emphasized by the parents.

Beginning Instruction in the Home and the School

The curriculum of the home consists of a language, a special talent area (at least for the individuals we have studied), a set of expected behaviors, and a set of values or a lifestyle. In part, the values and lifestyle reflect the family's involvement and membership in a particular ethnic group, religion, or cultural group. These are all taught to the child by modeling, direct teaching, and by various means of reinforcing some behaviors while punishing or at least not rewarding other behaviors. For the most part these are taught and learned on a schedule and to a standard that seem to the family to be appropriate for the individual child at his or her stage of development.

Teaching and learning in the home is informal and occurs in a great variety of ways. The learning may be initiated by the child or others in the family whenever they consider it to be appropriate. Quite frequently, and especially in the talent areas, much of the early learning is exploratory and is much like play.

In contrast, much of school learning is highly formalized, even in the early grades. There are written guidelines for what is to be learned and when it is to be learned. Clear roles are defined for teachers as well as for students. Learning is seen as a serious task to be accomplished on a set schedule and is clearly differentiated from play or exploratory activities.

The school schedule and standards are largely determined by the age of the child. The curriculum and learning experiences are presumably appropriate to most students at that age or grade. While there may be some adjustments for different rates of progress and some adjustment of standards for individuals within a grade or classroom, each individual is instructed as a member of a group

with some notion that all are to get as nearly equal treatment as the teacher and the instructional material can supply.¹

A child who deviates considerably from the rest of the class may be given special psychological or academic examinations. If warranted, the child may be placed in a special class or group to be treated differently from the other children. Such special examinations and treatments are most often for those who are doing poorly and only rarely for children who appear to be at the other end of the achievement distribution.

An important point of difference between home and school is that in the home each of the children (except in the case of twins) is at a different age and level of development. As such, each child is treated with the uniqueness that befits his or her differences from other children in the family. The family model is in some ways similar to the one-room schoolhouse of an earlier day, in that children at different stages of physical, social, and intellectual development were treated differently *within* the same classroom.

Teaching and Learning in Talent Development vs. Schooling

Part or all of the instruction the talented individual received was on a one-to-one basis. The pianists had weekly or twice weekly private lessons. In master classes a teacher would work with one pianist in front of a group of pianists who were expected to benefit from observing. The swimmers worked with many other swimmers in the pool, but the instruction was individualized and personalized. Again, other swimmers might benefit from observing the instruction of their poolmates but for each the instruction was individualized. The mathematicians had much less systematic instruction in the early years, but they almost always learned alone or with one adult or peer.

Some of the instruction each week was provided by a teacher (tutor) who diagnosed what was needed, set



learning objectives, and provided instruction with frequent feedback and correctives. The teacher also suggested appropriate practice, emphasizing specific points or problems to be solved, and set a time by which the individual was expected to attain the objectives to a particular standard. At the end of the set time, the child performed and the teacher noted the gains and what had still to be accomplished, gave corrective instruction, and then gave further instruction for new material and procedures. The teacher praised and encouraged the child for his or her accomplishments, and when the standard was attained, set a new task and further objectives and standards. The cycle of learning tasks, objectives, standards, and motivation was repeated over and over as the child progressed.

In talent development, each child was seen as unique and the teacher (tutor) set appropriate learning tasks for the child, gave rewards which the child valued or responded to, and set the pace of learning believed to be appropriate for the individual child. The child's learning was central and there was continual adjustment to *the child learning the talent*. The objectives and standards set by the teacher were always in terms of specific tasks to be accomplished in particular ways by the individual child. While the child was frequently judged in comparison with other children, emphasis was on the accomplishment or mastery of the particular learning tasks set for the individual.

Classroom instruction in schools emphasizes group learning.² The group is taught as a whole or as subgroups. There is a cycle of teacher explanations and demonstrations and student response and practice. The teacher's explanations are expected to be equally good for all students in the class and the types of rewards and reinforcements offered by the teacher tend to be similar for all. The cues and explanations, the amount of participation and practice, and the rewards are not *consciously* varied for each of the children in the class.

While teachers do vary, it is clear that the group is central in the school learning process and only minimal adjustments are made for individual children. If the group as a whole has difficulty, the teacher will reteach the task or skill until some portion of the group has learned it. But generally, all the children are not expected to learn a task or skill to the same level and little is done with the use of feedback-corrective procedures to bring all children to the same standard of accomplishment. Since it is not expected that each child will learn to the same standard or level, *relative standards* are emphasized, but the tasks are the same. Certain children are expected to learn a task to a high level while others are expected to learn it only to a much lower level. As a result, the children who have learned to the higher standards develop a positive view of their own learning progress while other children develop a sense of inadequacy about their learning.

In general, school learning emphasizes group learning and the subject or skills to be learned. Talent development typically emphasizes the individual and his or her progress in a particular activity. In school group learning, little is done to help each individual solve his or her special learning problems,³ while in talent learning the instruction is regarded as good, at least by the parents, *only* if it helps the individual make clear progress, overcome learning difficulties, and move to higher and higher standards of attainment. In schools, children sometimes learn poorly or fail. We find in our study of talent development that when the child is learning poorly it is assumed that the teacher is at fault and the parents seek another teacher.

Role of the Home in Support of Talent Development and Classroom Instruction

In the early years of talent development, at the end of each lesson the



teacher provides instructions to the child as to what is to be done at home before the next meeting. The amount of time to be devoted to practice is specified, as well as a detailed list of the tasks to be accomplished before the next session. In most cases, at least in the early stages, one of the parents receives some instruction as to what is to be done at home during the week. Parents then observe the child during practice, insist that the child put in the appropriate amount of practice time, and when necessary refer the child to the procedures suggested by the teacher. When the child has done something especially well or attained the standard of performance set by the teacher, the parents reward and approve of the child's progress.

The home plays a very important role in supporting the child in the talent development, in monitoring the practice, and in encouraging and even correcting the child, especially in the early years. In most cases, the parent role in this was in large part under the control of the teacher. Where there were special difficulties, this might be the subject of a meeting between the parents and the teacher. Although there were exceptions, the child's learning and practice were *consistent* in both the weekly sessions with the teacher and in the home between these sessions.

In general, where the school teaches the same subject or skill that parents emphasize, learning is likely to be very great—unless there are conflicts between the home and the teacher about the way to teach it. Thus, when the home emphasizes reading as an important activity for members of the family, the child typi-

“. . . the influence of the home lessens in the middle and later years.”

cally learns to read in both the home and the school and these two complement and reinforce each other. However, when homes and schools conflict with each other, the learning is likely to be very poor. For example, when the home teaches one dialect and the school teaches a different one, the child usually has difficulty separating the home language from the school language, especially when he or she is penalized by the home (or the school) for learning or using the dialect emphasized by the other.

The major part of the school curriculum is usually taught by the school *without* much involvement or support from the family. While families would like their children to “do well in school,” only a small proportion of homes give as much support and encouragement for school learning as those in our study did for a particular talent. Except for special difficulties, many homes are likely to pay little attention to what goes on in the school and what the home can do to aid, encourage, and emphasize the child's school learning. At best, most homes support instruction in the school and ensure that the child's homework is done on time.

The homes we studied were typically much involved in the talent homework and practice during the early years. The home activities are centered on the child's development of the talent while in the case of school learning many of these homes



“The home plays a very important role in supporting the child. . . .”

only keep informed about the child's development in the school. Much of the school curriculum and instruction is regarded even by these parents as something required but not as something to be enthusiastically encouraged for their children.

In the later years of talent development the role of the home changes and there is less of a partnership between parents and the talent teachers. This is especially true when the teacher is a renowned specialist and the talented individual has already developed a practice routine, a set of standards, and a level of self-criticism that approximates that of the teacher. It is also likely that few of the parents are able to follow the complexities of the talent development at the later stages. But even in the later stages of development, the family supplies encouragement and resources, provides special outside help if needed, and helps the individual consider options for the future.

In both talent development and school learning, the influence of the home lessens in the middle and later years. As the child spends more and more time out of the home, and as he or she moves through physiological and psychological stages of development, different influences come to bear on his or her life. In relatively few instances can the home play a large role in enforcing practice, homework, and maintenance of standards of work for modern adolescents if

these have not become a part of the child's habitual behavior before this age.

Spurs to Learning Provided by Public Events

In each talent field there are frequent events (recitals, contests, concerts) in which the child's special capabilities are displayed publicly, and there are significant rewards and approval for meritorious accomplishments. The child is spurred to greater learning efforts *in anticipation* of the public event and he or she strives, with the aid of teachers, parents, and others, to prepare adequately for each event. These periodic events form benchmarks of the child's progress. There is a heightened level of learning and emotion not only at the time of the event but in anticipation of it as well. Success at the event is much praised and rewarded while lack of success is typically a spur to renewed effort to overcome difficulties before the next event.

These public events are a means of making the child's progress and development real and important. They also bring the participants into direct contact with one another, providing opportunities to exchange experiences and to observe and get to know outstanding peer and adult models of the talent.

Undoubtedly, these events are so striking that some individuals who don't succeed may give up the talent area if their failure leads to a great sense of hopelessness and inadequacy. In our talent development groups, the sense of adequacy was typically very great. Even when they did not “win,” these talented individuals

drew comfort from their sense of improvement over previous events, and used the events to identify problems they still had to solve. For most of our talent group there were many such public or semi-public events, perhaps as many as a half-dozen or more each year from age ten on.

In the schools (with the major exception of extracurricular activities like athletics and group musical activities) there are very few public events at which the individual's capabilities in the academic curriculum are exhibited. At an earlier time in the history of the schools there were more public events and contests relating to academic learning such as spelling contests, writing contests, mathematical, scientific, oratorical, and debating contests. In general, schools have become work places where individuals are given instruction and assignments and are called on to answer questions or give their point of view, but these are largely classroom activities with a familiar group of peers.

Perhaps the major point is that talent development is encouraged and rewarded by events that take place outside of the home or instructional setting. These events give public recognition to the development of the talent, note the special progress of individuals, and encourage the individuals to prepare intensively so that they may do the best that they are capable of. Modern school settings rarely provide for this except in the case of extracurricular activities. As a result, much school learning is seen by students and others as something restricted to the school and in many ways divorced from the larger society.

Students in school may work very hard in preparation for final examinations, but these examinations do not have the quality of a public event where the individual rises to the highest level or stage of learning that is possible for him or her. One has only to compare school athletic contests with final examinations to see this phenomenon in terms of the enthu-

siasm, sense of despair or triumph, and quality of preparation each evokes.

While we have emphasized the role of public recognition as a source of motivation and major rewards, this is not the fundamental point. It is the means of making progress and development real and significant for the individual and the society which is at issue. This appears to be much more central in talent development than it is for academic school learning.

Single vs. Multiple Study and Aims

In some ways, our comparison of talent development and school learning may seem unfair. The major purpose of school learning is to give all students a general education as a basis for later specialization and further learning in or out of school. In contrast, talent development places emphasis on learning and development in a particular field. School learning is for all students while talent development emphasizes the learning of selected students. Also, school learning typically emphasizes the learning of a group of students while talent development emphasizes the learning of individuals. Having conceded these differences, we still believe that much may be gained by noting major differences in the process and the results.

At least from age ten on, the talented individuals were intensely involved in their talent development, while other activities were given only a subordinate role. These children attended school and learned what the school had to teach, but rarely was this central in their lives. The talent field was central and much was done to prepare for the next lesson, the next public event, and other related activities such as contests, concerts, or demonstrations and models to observe as a way of learning. They read much about the records and highlights of the greats in the field, and talked about the various aspects of the field with their friends and companions who shared this interest.

During adolescence these individuals devoted 15 to 25 hours a week to lessons, practice, and other related activities in the field. In most cases after age 12, they gave as much time to their talent field as they did to all of their school and related activities. But, time is not the sole index. They lived and breathed their talent development. It determined their companions and the activities they would or would not engage in (such as dates, sports, extracurricular activities, and so on). Activities were judged according to whether or not they would interfere with the talent development in terms of time requirements, potential injuries, or distractions from the learning tasks and the energy and concentration required for the talent field.

Their aspirations for their future in the talent field ruled much of their lives. They viewed themselves as members of a special group. They strived for perfection through practice, strengthening parts of the body, study, suffering pain, isolation, following the regime set by the teacher, and so on. Everything else was to be done in moderation as long as it did not interfere with the requirements and tasks in the talent field.

The school curriculum is intended to give all students a well rounded education. The student who does very well in one subject but less well in others is chided for this differential in achievement. He or she is supposed to do equally well in all school subjects. Also, each of the subjects is allotted a number of classroom hours each week and only rarely is any one able to change this schedule, at least for the first eight to ten years of schooling. While students may find some aspects of school more interesting and rewarding than others, they are rarely permitted to put much of their efforts into what they like most if it interferes with the learning of things they like less well.

The major point is that in the talent field the individual becomes fully engaged. There is a major commitment to learning and development in

one field, while other activities are given lower priority. In school, the individual is expected to put equal effort and time into the different academic and other major activities. An individual who becomes too preoccupied with some aspect of the school is persuaded to do it in a more moderate way. The school does not encourage or permit many students to become fully involved in any one part of the curriculum.

Longitudinal vs. Cross-sectional Teaching and Learning

In our study of talent development the individual typically is instructed by a series of teachers on a one-to-one basis. Each of the teachers stays with the individual an average of five years. The child is taught one or more times each week and the individual child and his or her long term development are the central concerns of the teacher. The child is believed to be unique and special and each phase of his or her development is viewed as the necessary prerequisite to the next.

In piano, for example, the basic skills, strengthening of fingers, phrasing and timing, and a sense of music are taught as a prelude to the next stage of musical development. (This is paralleled by other sequential series in each of the other talent fields). The teacher has a sequential curriculum in mind and each instructional session is seen in its own right as well as how it contributes to the child's long term development. Problems are encountered and "solved" and over several years the teacher helps the child move from one phase to the subsequent phases or stages. The timing of these stages may be very different for each child and the teacher may, if all goes well, shorten or even omit particular phases. If there are special difficulties, the teacher tries to overcome them or stays with a phase until the child is deemed ready for the next one.

While the teacher may compare the child with other children in the same talent field, he or she empha-

sizes the child's progress from lesson to lesson with the child's stage at one time as the benchmark for noting progress or gains. Also, the child's sense of the talent and dedication to it are some of the long term developments that the teacher notes. The teacher is concerned with the child's growth and progress toward what is possible at the highest level. This stems from the likelihood that the teacher will remain with the child over a number of years and also from the teacher's long term view of what is possible for the particular child.

In contrast, the schools are arranged by courses. Although the curriculum in a particular subject may extend over a period of ten or more years, each teacher has the child only for a term, year, or course. And, the teacher is responsible only for what happens during that period of time. The teacher judges each child in terms of how well he or she is doing in comparison with other children at that grade level or in that class. Each teacher at a particular grade level is primarily concerned with the teaching and learning appropriate to that grade. Little attention is paid to what the child has already learned, or to what each child will need to effectively enter the next grade or course.

The teacher is bound by time and numbers of children to a particular portion of the long term curriculum and in most cases does not have a full appreciation of how the things to be learned at a particular level fit into and are a prerequisite to much of the later learning. In some ways, the schools are like assembly lines with each student and teacher concentrating on only a particular part of the educational assembly line.

While talent development also involves sequential learning, the learning tasks emphasized by the teacher are constantly integrated with respect to long term goals for the particular child. There is always a larger view of the entire learning process and what it means to have "learned" something. Where it is deemed appropriate, the teacher takes advantage

of what is happening currently in the talent field. Concerts, competitions, and other relevant events are used to provide models for the individual and to stress particular examples of the talent and what they can mean for the individual student. There is a constant effort to relate the current student learning of talent to *long term goals* as well as to *current life* outside of the teaching and practice situation.

In contrast, the learning in the classroom is often presented as a series of isolated tasks. Seldom are these linked to each other in a clear way, rarely are they related to the learning going on in other subject fields, and only occasionally are they related to current events. There is a kind of tunnel vision in which each learning task is learned as a separate entity. Each task is allotted a set amount of time and is to be learned on a given schedule. The goal of the teacher is to cover the set content of the curriculum with only rare attempts to look for the larger view of the subject or to explore by-ways which might give greater meaning to the learning enterprise.

Talent Development and the Role of the School

In the preceding sections of this paper we have presented some of the major differences between talent development and schooling. In this section we will describe some of the relations between elementary and secondary schooling and talent development for the persons in our study.

Schools can and do influence talent development, sometimes positively and sometimes negatively. All of the individuals we studied attended elementary and secondary schools and college or beyond. These individuals had remarkably different school experiences through high school. Some were straight *A* students while others barely met the requirements for graduation. Some were involved in many extracurricular activities, but others rushed to get

out of school each day and away from an unhappy situation in their lives. We find three broad categories of relationships *between* talent development and schooling for our sample of students.

For one portion of our sample, talent development and schooling were almost two separate spheres of their life. Both made great demands on the individual, but with minor adjustments the individual was able to meet both sets of demands. Usually the student made the adjustments, resolving the conflict by doing all that was a part of schooling and then finding the additional time, energy, and resources for talent development. Pianists and swimmers practiced before and after school, getting up very early in the morning and working late into the evening. They devoted their weekends to additional practice, talent education, and special events. Mathematicians found and worked through special books and engaged in special projects and programs outside of school.

Sometimes the schools or particular teachers made minor adjustments to dissipate the conflict. Mathematicians were sometimes excused from a class they were too advanced for and allowed to work on their own in the library. Sometimes they were accelerated one grade as a concession to their outside learning. Pianists or swimmers might be allowed to leave school a little early to practice. A school requirement might be altered when an individual had an important event to attend.

Whether the individual or the school made the adjustments, it was clear that these adjustments minimized conflict but did little to assist in talent development. The individual was able to work at both schooling and talent development, although with minimum interaction. The learning the pianists, swimmers, and mathematicians were doing outside of school was seldom discussed in school. And the learning they were doing in school had little impact on their life out of school. Talent devel-

opment and schooling were isolated from one another. Schooling did not assist in talent development, but in these instances it did not interfere with talent development.

For a second portion of our sample, school experiences were a negative influence on their talent development. For these individuals the conflicting requirements of talent development and schooling could rarely be resolved. Schooling was truly something to be suffered through. These individuals found that their efforts in the talent field were not well received by teachers, principals, or peers. They were frequently urged to pay more attention to what the school expected from them. They were told in a variety of ways that what they were doing in their talent field was not valued by the school and for their own sake they ought to spend less time on the talent and more time on schoolwork and related activities.

These students were outsiders in their schools. They were labeled by the other students as different in a pejorative sense. They could find few friends and few school activities that captured their interest. The vital part of their lives was in their field of talent development.

For the third portion of our sample we find the most encouraging role of the schools in talent development. School experiences became a major source of support, encouragement, motivation, and reward for the development of talent. These school experiences expanded the individual's interests, made the development of the talent real and important, and helped the individual feel worthwhile and valuable.

Several of the mathematicians and athletes were fortunate to work with some unusual teachers, sometimes in very exciting programs. When a teacher got involved in a new program or method of instruction or coaching related to the talent field, he or she was able to make the subject very stimulating. The teacher's energy, commitment, and seriousness were contagious. The people we interviewed felt that these teachers did much to stimulate and encourage them at a very critical point in their development.

Some individuals found private support for their development of talent from teachers or principals. These teachers or principals noticed the

child's special development and recognized the quality of his or her work. They went out of their way to talk with the individual and to provide extra help or encouragement. They recognized the student's seriousness and shared with the student an eagerness for working toward very high standards and a commitment to excellence.

Some students found special support from peers in their schools. Peers involved in the same activity helped the individuals confirm their belief that what they were doing was important and this reaffirmed their commitment to the activity. They competed with one another, stimulated one another, and provided a shelter in a world where few people shared their interest and the intensity of their involvement.

Finally, some of these individuals found public events in the schools that made their work real and important, and gave them chances to demonstrate their achievement. A few of the pianists played in a large number of school programs. They played solo recitals and they played for choruses or musical plays. They were made to feel necessary and important. The swimmers and mathematicians received special awards at assemblies. They won recognition for their schools through their achievements, and they won recognition for themselves.

In Brief

We have been studying the learning and developmental processes found in the most extreme cases of talent development in artistic, psychomotor, and cognitive fields. In this paper we have summarized some of the major contrasts between talent development and elementary-secondary schooling. No doubt many of our readers will regard such contrasts as unfair because talent development and schooling have such different values, purposes, and functions—and they are right.

Nevertheless, one might expect our school-oriented readers to ponder some of the differences we report. They may ask themselves whether they know many schools in which teaching and learning conditions are very different from those we describe. They may also ask themselves whether the schooling conditions we describe are really essential to fulfill

the major purposes and functions of the school.

We report very few instances in which talent development and schooling function to enhance each other. We hope our readers will find more instances, outside of sports, where these relate well to each other. Finally, the reader may ask whether the findings we report from our study of talent development provide new insights and questions about what is needed to make teaching and learning most effective.

Perhaps a concluding note will provoke further thought: after age 12 our talented individuals spent as much time on their talent field each week as their average peer spent watching television. Why are some individuals so highly committed to learning while so many others find and need frequent distractions? ■

¹ At the preschool level, teachers may give greater attention to each individual's needs and progress. More adjustment may be made for individual differences, in part because the curriculum is less clearly defined and also because of the higher ratio of adults to children in the classroom.

² There are some exceptions to this, such as "open schools," and some special school programs that place great emphasis on individualized instruction.

³ A special case of school learning is the Mastery Learning approach where there is a periodic check on each student's progress, a corrective process in which the student is to do certain practice and study (usually with prescribed material and some help from the teacher, aides, or other students), followed by a further check to determine whether the corrective procedures have been effective and to demonstrate to the student when he or she has mastered the task. As a result of the Mastery Learning procedures, most of the students are able to correct their learning difficulties and move on to the next learning task with greater confidence in their own ability to learn and with fewer and fewer learning difficulties as they proceed throughout the course.

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