

TALENTED TEENAGERS

The roots of success and failure

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Talented teenagers : the
roots of success and
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Cultivating talent throughout life

John Dewey, writing earlier in this century, understood clearly the connection between enjoyment and learning. In his book *Experience and Education* he wrote:

Everything depends upon the *quality* of experience which is had. The quality of any experience has two aspects. There is an immediate aspect of agreeableness or disagreeableness, and there is its influence upon later experiences. . . . Hence the central problem of an education based upon experience is to select the kind of present experiences that live fruitfully and creatively in subsequent experiences.¹

Thus Dewey based his educational philosophy upon a connection between momentary and future concerns. True education, according to Dewey, was a spiral and dialectical process. The task of the teacher consisted in stimulating enjoyable experiences in students in a learning context, so that they would want to repeat such experiences on their own:

It is part of the educator's responsibility to see equally two things: First, that the problem grows out of the conditions of the experience being had in the present, and that it is within the capacity of students; and, secondly, that it is such that it arouses in the learner an active quest for information and for production of new ideas. The new facts and new ideas thus obtained become the ground for further experiences in which new problems are presented. The process is a continual spiral.²

Yet Dewey's philosophy, although universally acclaimed for its insights, has provoked much controversy, most notably between those who endorse progressive views of education and those who endorse the traditional. Proponents of each ideological stance often misunderstand the flexibility needed for authentic education. Traditionalists want more classroom discipline and the teaching of basic skills, and progressives argue for free-

dom and sensitivity. One administrator who works at an elementary school in the Chicago area described the problem this way: "When you mention Dewey, most teachers think of putting kids in a large room with lots of toys, and letting them do whatever they want." Although Dewey saw this misguided debate brewing, his efforts were unable to prevent it.

A lack of appropriate methods for measuring the quality of experience is certainly one reason why these misunderstandings persist. The point that needs to be proven is that short-term enjoyment and long-term involvement are intimately related in the process of education and therefore in the development of a talent. The Experience Sampling Method (ESM) is a method that can be used to begin to test that assumption. This chapter explores these two dimensions from the perspective of teens working in their talent areas.

The contrast between short-term and long-term involvement is another manifestation of the dialectics of integration and differentiation. At this level of analysis, short-term, spontaneous, or momentary involvement corresponds to integration in consciousness. That is, students do not feel overwhelmed or alienated by the talent-related work at hand but rather experience themselves and their actions as a seamless whole; they are "into" whatever they are doing. Long-term, goal-directed involvement, on the other hand, indicates differentiation in consciousness. That is, students are aware that what they are doing at the moment is something new and challenging that has ramifications for their growth and for their futures. A state of consciousness that has both these dimensions would be complex; that is, students would feel that their talent activity – in addition to being a means for growth and change – is also an enjoyable end in itself. In our study we expected that the students who were the most committed to developing their talents would show such a complex state of consciousness more often.

EXPERIENCE AND TALENT DEVELOPMENT

As in previous discussions of personality and family context (e.g., chapters 6 and 8), the notion of complexity will be used here to represent the simultaneous presence of integrating and differentiating forces. A complex personality and a complex family context have been described as

optimal for growth because they are multidimensional, that is, oriented toward both stability and growth. In the present chapter this general dialectic will be applied to the quality of experience. A complex experience is one that is enjoyable yet related to future concerns and growth. In this sense a complex experience is one in which intrinsic and extrinsic motivation are fused and the immediate rewards of an activity are related to expectations of future rewards. To the extent that students' mode of engaging their talents is characterized by this dialectical tension, it is likely that their talents will grow.

As discussed in chapter 10, our study has partially confirmed these observations. For the sample as a whole, the ESM data predicted engagement with talent 2 years later. Students who had reported being open and excited when working on their talent were more likely to persevere, as were those who perceived what they were doing as being important to their overall goals. In other words, momentary interest and involvement and long-term goals were both linearly related to various dimensions of engagement. Apparently neither of these qualities can be ignored when we talk about talent development.

On the other hand, the results reported in chapter 10 tell us little about the synergistic relation between these variables. Is involvement enough to predict talent development? Or is awareness of the long-term importance of what one is doing enough to carry one successfully through the high school curriculum? It may be the case that those students who are most engaged will be simultaneously enjoying the present moment and also aware of the connection between their present activity and future goals.

The relationship of flow experience to talent development described in the preceding chapter suggests the same dynamic considerations. High skills can provide a platform for enjoyable and effortless involvement with new information, but if there is no perception of a challenge for growth it is unlikely that flow will occur. Thus another issue discussed in the present chapter is whether the most committed students demonstrate a synergistic relation between skills and challenges.

In line with Dewey's insight, talent development is conceived in this study as a dialectical or spiral process marked by a certain mode of engaging experience. The metaphor is *a path with a heart*,³ or the feeling of approaching a destination while enjoying the journey as an end in itself. To measure momentary involvement, the combined ESM scores of the

variables "involved," "open," and "excited" were used; long-term goals were measured with the single item "How important is this activity in relation to your overall goals?" An experience was classified as complex when a student responding to a particular pager signal indicated both high involvement and high importance to future goals (i.e., *above average* on each variable). In addition, three other modes were distinguished: high involvement and low importance, high goal importance and low involvement, and low involvement and low importance (see also chapters 6 and 8). Committed students were expected to indicate the simultaneous presence of involvement and importance more often than the uncommitted.

The flow model⁴ provided a second way to explore a complex experiential mode. Again four types of experience were considered: high skills and challenges (the best condition for flow experiences), high skills and low challenges (potential boredom), high challenges and low skills (potential anxiety), and low skills and challenges (apathy). We expected that high talent engagement would be characterized by the "productive tension" of high skills and challenges.

*Undivided attention: The experiential mode
of committed students*

Immersion in the task at hand is not all a teacher asks for when requesting students' undivided attention. If it were, the point of the lesson might not go beyond the classroom door, being forgotten as soon as the bell rings and the students leave. What the teacher truly desires is that students' attention not be divided between wanting to learn just enough material to get decent grades and at the same time using every bit of attention left over to fantasize about the next date or the next game.

To explore the questions of how short-term enjoyment and involvement in long-term goals interacted with talent commitment, we first selected a committed group of students in each talent area, students who by the end of high school exemplified ongoing engagement with talent. The criteria were simple and straightforward. Using two questions from the Subjective Engagement scale (see chapters 2 and 10), we classified students as committed if they (*a*) were doing talent-related activities every day and (*b*) planned to major in their talent area in college. In other words, committed students were defined as those who at the end of high school

were still investing much energy in their talent and were planning to invest much energy in the future. Together these two components seemed to provide a good measure of commitment even if they did not indicate level of achievement (i.e., grades, ratings, and so on). Based on this method of selection, we classified as committed 31 students who also had sufficient paper responses in their talent area. Of these, 5 were committed in more than one domain of talent. This resulted in 12 students committed to math, 6 to science, 11 to music, 2 to athletics, and 5 to art. Because of the small sample in athletics, we excluded it from some of the analyses across talent areas.

Students in the committed group had impressive profiles of talent involvement. Kyra, who "always had a dream of going to Juilliard," typifies the kind of student selected. Her week – both at home and at school – was structured around devotion to music. Unabashedly she said, "I have to give up everything else just so I can make it my life." She performed with the high school orchestra and was accepted in two others outside school. She traveled to downtown Chicago for private music lessons, spent a good deal of her time practicing, and at the time of her interview was preparing an audition tape for a prestigious summer program of studies. She said she put so much energy into music because "I can hear myself getting better and better. . . . I've come this far, I can't stop. I don't want to, but [even if I did] I just can't."

Despite overwhelming levels of dedication, however, the students in this group did not differ from the uncommitted students in important ways. Their family incomes were about equal, their mothers and fathers had attained comparable levels of education, and their scholastic aptitude (as measured by the Preliminary Scholastic Aptitude Test) was not significantly different (committed group = 101.08; uncommitted = 98.50). Neither were the two groups of students different in terms of the prestige of their fathers' occupation, their position in the order of siblings (i.e., first or only child vs. not), the size of their family (one or two vs. two or more), the marital status of their parents (married or divorced), or their sex.

Quality of experience and commitment to talent

Before proceeding to the main question of whether or not such committed students were characterized 2 years earlier by a more complex experi-

ential mode, we first compared the committed and uncommitted students on the ESM measures of quality of experience in their talent areas. These comparisons confirmed the relationship between positive experience and talent development suggested in the preceding chapter, and showed that when the most committed students are compared with the rest, these relationships become even stronger. For instance, significant differences ($p < .05$, one-tailed) were observed for the following variables: happy, cheerful, strong, active, sociable, proud, involved, excited, open, skilled, succeeding, wish to be doing, important to overall goals, and unself-conscious. Figures 11.1–3 represent these trends, using the composite ESM variables Affect and Potency and the motivational variable "wish to be doing." The figures also compare students across talent areas.

Committed students in math, science, music, and art were feeling more positive affect, greater potency, and stronger intrinsic motivation while they were engaged in their talents. These figures also show consistency across talent areas. This means that there is no interaction between quality of experience, commitment, and type of talent. Thus the positive correlations reported in the last chapter cannot be explained as an artifact of talent area. It was not, for example, that music or art students were primarily responsible for the positive relationship between engagement and quality of experience; the same pattern held also for students in science and mathematics. Even though music and art students tended to report higher levels of affect, potency, and intrinsic motivation overall while working in their talent areas, committed math and science students were comparable to students in the other domains.

Complex experience and talent development

Exciting moments unrelated to plans of action and purposeful but unpleasant moments represent two failed sides of a vital link in education. Thus we might expect that students who are committed to the development of their talents would less often experience these two modes. Instead, committed students should report a more complex experiential mode, that is, one characterized by both short- and long-term interest, one playful and serious at the same time.⁵ Dewey certainly used the concept of interest in this way, carefully avoiding the association of interest with purely momentary excitement and stimulation. And current research on the concept of interest and its importance to educational

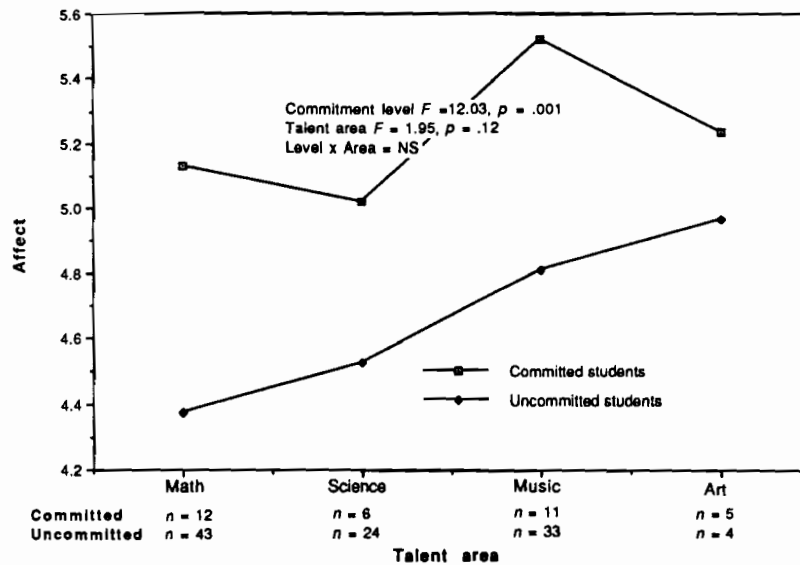


Figure 11.1. Affect of committed and uncommitted students while engaging in talent-related activities.

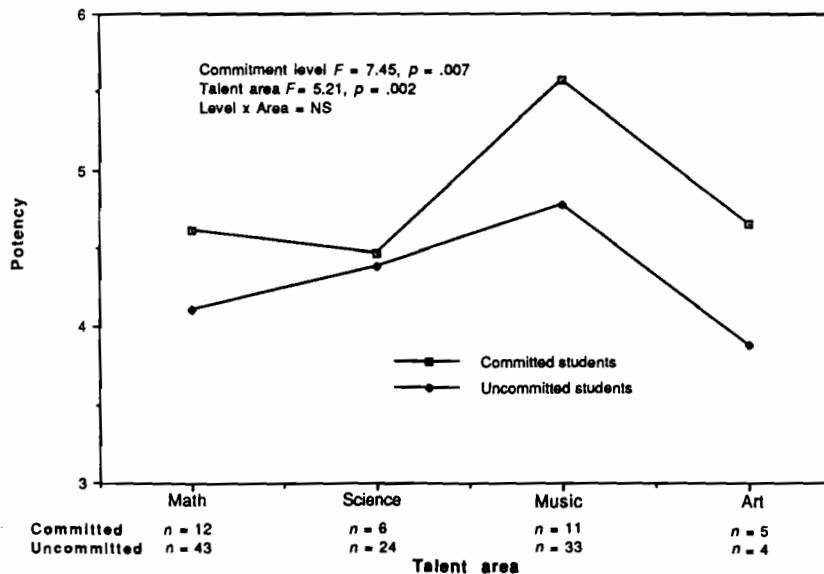


Figure 11.2. Potency of committed and uncommitted students while engaging in talent-related activities.

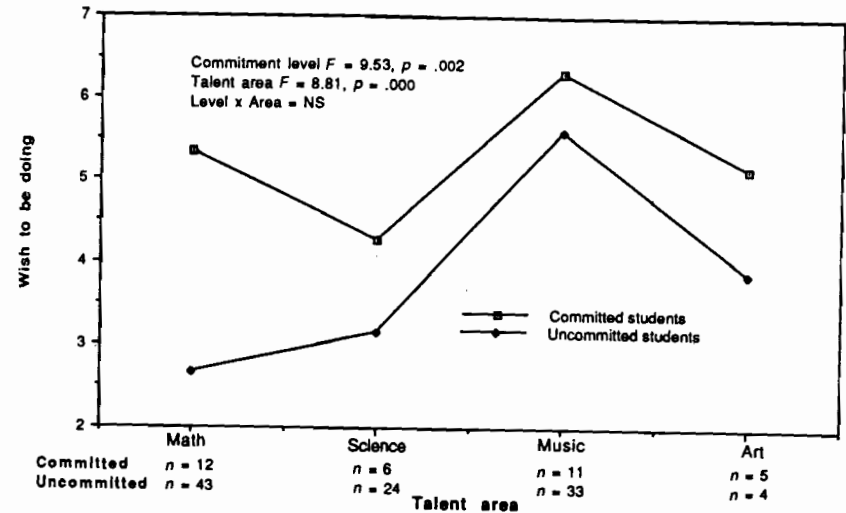


Figure 11.3. Motivation of committed and uncommitted students while engaging in talent-related activities.

theory⁶ emphasizes both positive emotional involvement and intrinsic motivation as well as the cognitive importance given to future goals.

As mentioned above, momentary involvement was measured by adding the ESM items "open," "involved," and "excited." The relationship between experience and long-term goals was measured by the single ESM item "How important is this activity to your overall goals?" On the basis of median splits on the distributions of these two variables, we classified all of the talent-related pager signals into one of four quadrants: high momentary involvement/high importance to goals, high involvement/low importance, low involvement/high importance, and low involvement/low importance. Then each student's ESM signal responses were aggregated, yielding a percentage score for each of the four quadrants. In other words, if a particular music student responded to four talent-related signals while in music class, and one fell in each quadrant, then the corresponding percentage in each would equal 25.

Figure 11.4 presents the comparison of committed and uncommitted students, using the method just described. As expected, committed students reported being significantly more often in situations characterized

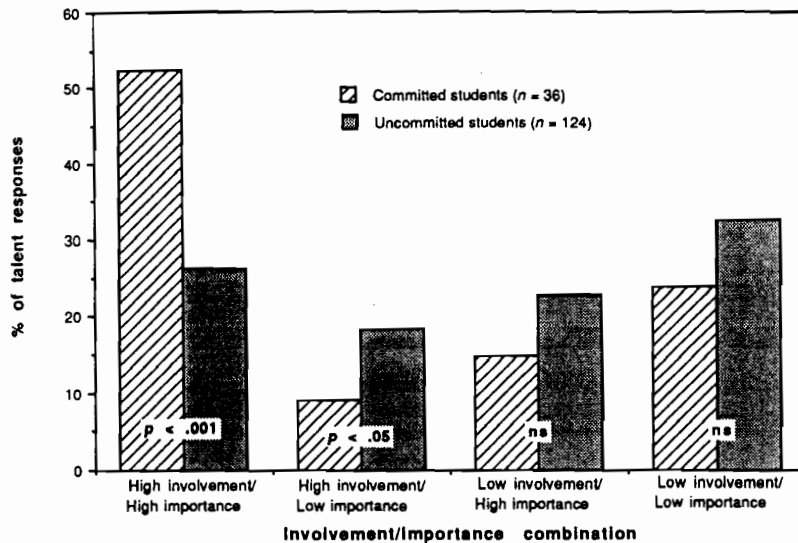


Figure 11.4. Comparison of committed and uncommitted students on levels of momentary involvement and importance to goals.

by momentary enjoyment plus importance given to long-term goals. This manner of dealing with their talents characterized their experience over 50% of the time (twice as much as the uncommitted students), and it was by far their predominant mode of operation. In contrast, the primary mode of talent engagement for the uncommitted students was low involvement/low importance of goals, which characterized their talent engagement over 30% of the time. These relationships held across each talent area; that is, committed math, science, music, and art students all had higher percentages in the high/high mode.

The other significant difference between the two groups was that the uncommitted students tended to be more often in situations where they were momentarily interested in their talents but did not feel them to be relevant to their long-term goals. It may be that some of the uncommitted students still enjoyed talent-related tasks – perhaps because they were good at them – but they had stopped thinking of them as offering important opportunities for the future.

Whereas the coincidence of short- and long-term interest is important

for commitment in each domain of talent, as discussed in chapter 6, we expected that committed and uncommitted students might have different profiles in the high involvement/low importance mode and in the low involvement/high importance mode, depending upon whether or not they were involved with the arts (i.e., music, athletics, or art) or the sciences (i.e., math or science). We found in our study that in general students working in the sciences more often perceived the importance to their long-term goals of what they were doing while feeling low momentary interest; in contrast, those in the arts were more often feeling involved at the moment while not seeing the future importance of their talent-related tasks.⁷

Students who became committed to their domain of talent were able to compensate for the temporary lack of relevance or enjoyment. Table 11.1 shows how students who became committed to the sciences were more able to enjoy themselves at the moment, whereas those in the arts learned more often to relate what they were doing at the moment to their long-term goals. Thus those in each committed group were distinguished from their uncommitted peers significantly by their greater percentages in the high/high mode, and this mode characterized their talent activities most often. It is, however, important to keep in mind the variability between the committed young scientists and artists: In the former group, only 46% reported high involvement and high importance to goals, compared with 59% for the latter group. Thus even among committed students, math and science compared unfavorably with music, athletics, and art in terms of the opportunities each provided for optimal experience (see chapter 6 for an extended discussion).

We expected that those students whose interest remained divided, who weren't able to add the dimension that was lacking in their domain, would be less likely to develop their talents. In other words, science students who couldn't enjoy the day-to-day work and students in the arts who couldn't see in their work any future were the ones most likely to remain uncommitted. Table 11.1 confirms these expectations. Uncommitted science students were three times more likely to see the importance of what they were doing than to enjoy it. Uncommitted students in music, athletics, and art were more than three times as likely to be enjoying what they were doing in school than to be able to relate it to their future goals. Clearly the major obstacle to the development of talent in the sciences is

Table 11.1. Comparison of students talented in arts and sciences on levels of momentary involvement and importance to future goals (percentage of time working in talent area)

	Math and science students				
	High involvement/ high importance	High involvement/ low importance	Low involvement/ high importance	Low involvement/ low importance	
Committed ($n = 18$)	45.5	11.6	11.6	31.3	$p < .01$
Uncommitted ($n = 67$)	20.2	14.7	32.4	32.7	
					NS
Music, athletics, and art students					
Committed ($n = 18$)	59.3	6.5	18.1	16.2	$p < .01$
Uncommitted ($n = 57$)	33.4	22.6	11.4	32.6	
					NS

lack of enjoyment, whereas the major obstacle in the arts is lack of viable future prospects. This finding underscores the need for teachers and parents to help students correct the imbalance of conditions that inhibit full interest and involvement and hence the possibility of growth.

Flow and commitment to talent

The perception of high skills and challenges provides the psychological preconditions for flow experiences. The productive tension between high skills and high challenges is another manifestation of integrated and differentiated modes of experience. A highly skilled science student is likely to find new material understandable and stimulating. However, if the material does not, in Dewey's words, "[arouse] in the learner an active quest for information and production of new ideas" (i.e., if it does not challenge the student), the student is unlikely either to enjoy or to learn the material. Conversely, if a science student is constantly bombarded with new information yet feels alienated from the work, the connection between experience and education is subverted. The focused flow of attention is likely to occur only when the interaction of challenges and skills creates a balanced tension. This tension sets up the dialectical movement between order and change that stimulates development.

To determine when students perceived themselves to be in a high skill, high challenge state, two flow measures were computed from the ESM data. The first was based on the percentage of a student's talent-related signals for which he or she reported perceiving challenges and skills higher than his or her *own* weekly average. For example, if a student was paged four times and reported above-average challenges and skills on two of these occasions, the flow percentage would be 50. The second flow measure was similar, but it computed percentage of flow by the perception of above-average challenges and skills compared with the *group's* weekly average. In other words, a flow response according to the latter measure would indicate a student's perception of higher challenges and skills than was typically perceived by her or his classmates. By the first measure, every student was likely to have at least some flow experiences; by the second, it would be possible for one student to be always in flow (i.e., above the group's average in challenges and skills) and for another to be always in boredom or in apathy.

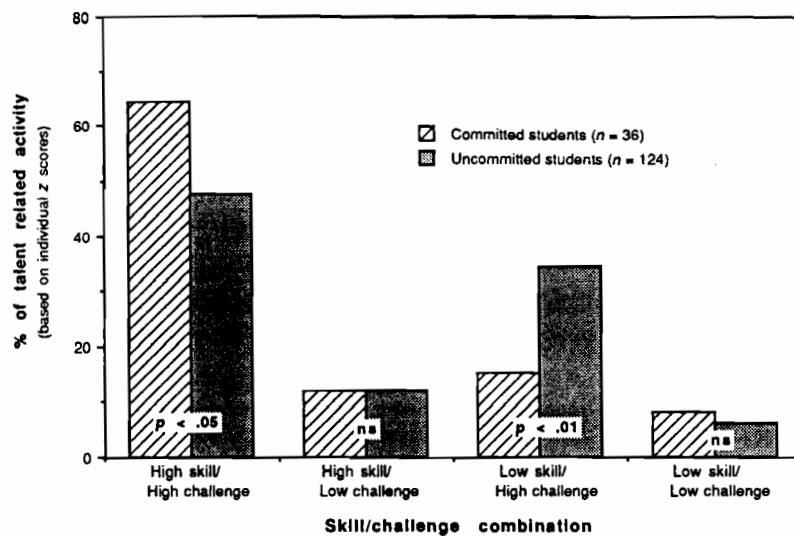


Figure 11.5. Comparison of committed and uncommitted students on levels of skills and challenges in talent work.

Figure 11.5 again suggests that optimal experience is associated with commitment to talent and that the committed students' predominant mode of engaging their talents is more complex. Collected 2 and 3 years before the commitment information, these measures reflect the students' natural way of experiencing their talents. Teens in the committed group reported high skill and challenge 65% of the time when they were doing talent-related work. This means that, compared with their average weekly perceptions of challenges and skills, working in the talent area fairly consistently generated the dynamic conditions for flow. In contrast, less than half (48%) of the uncommitted group's talent-related signals were flow responses. And these relationships held across talent areas; that is, committed students in both arts and sciences had similar proportions of flow when working in their respective talent areas.

Whereas committed students more often experienced the conditions for flow when engaged with their talents, the uncommitted were more often in the low skill, high challenge context that tends to produce anxiety. This finding replicates previous studies with different groups of talented

students⁸ and suggests one reason why some students disengage from their talent. The major obstacle to momentary involvement seems to be the feeling of anxiety – a fact that is important for educators to keep in mind.

When group averages were used to construct the flow quadrants, the results were virtually identical, with significant differences between the committed and uncommitted groups for the flow and anxiety quadrants. This similarity of results is important because it indicates that when students in the committed group reported relatively high challenges and skills (compared with their own average), such perceptions were also high by absolute group standards. Thus, using either method of measurement, the committed students were more likely than uncommitted students to perceive high challenges and skills while working in their talent areas.

THE LONG-TERM EFFECTS OF POSITIVE EXPERIENCE

We have argued that integration and differentiation are important components of social and personality systems. As characteristics of a person's social environment or as relatively stable personal dispositions, these qualities facilitate optimal experiences. A complex family or personality system both is stable and contains opportunities for growth. Such families and personalities are related positively to talent development.

Not all teenagers, of course, have such supportive social environments and personal habits. Can enjoyable experience in a domain of talent compensate for their absence? This is the question addressed through the case of a student whom we call Ron Schwartz. The troubling information he provided about his family and personality would have led us to believe that Ron would give up on his musical talent, but this turned out not to be the case.

The case of Ron Schwartz

Ron is a saxophonist who prefers the freedom of playing show music, blues, and jazz to the structured forms of classical music. He describes himself as serious, moody, capable of emotional extremes (which he feels

is typical of artists), accepting, and friendly but also demanding. Ron more than adequately demonstrates the dedication and the accomplishments to justify his inclusion in the committed category. He devotes a tremendous amount of time to music, which he considers an "essential part of life" and the only "pure form of communication." By his own estimate, he spends over 60 hours a week involved with music, playing for the school choir, in a jazz band, and in a blues band as well as playing for several local and professional theater groups outside school. He is an instrumentalist and occasional musical director for the theater groups, where he is in charge of musicians who are sometimes twice his age. His precocity has been noted by many, including the community newspapers.

Music is, in his own words, the force that keeps him together. He does not play for money, which he says he hates from the bottom of his heart because it's a bother and "destroys all your dreams" but rather because he feels compelled to reach the goals he has set for himself. This goal-directedness not only allows him to focus attention enjoyably but also directs his attention away from a host of other problems. Here is a telling passage from his interview:

All my life I've always set goals, I mean one goal after the next after the next. . . . And I just work and work and work. I like that. It makes me feel good when I can reach goals, but now they're getting bigger and bigger. . . . My whole life is goals. I could really sit down and think about my family and get so screwed up. So I've just completely shut out my family. . . . You know, *it's shutting off all realization that my family exists*. It would be nice if they could just wait a couple of years until I'm out of high school to have their difficulties, and then I just could worry about that. But now when I have 10 million other things to worry about along with this, I have to shut out some stuff.

Music is Ron's shield, a protection from the psychic entropy that would result if he spent time worrying about his family problems, particularly the divorce that his parents are going through. "It's to the point now where I don't do anything with my family," he comments. "It would be nice to come home to people who were really happy." There is little doubt that Ron's devotion to music is in part the result of the narrowed concentration he achieves in order to avoid unhappiness. His motivation thus appears to be an unusual blend of intrinsic and extrinsic reasons: In part, it is escapism and the need to get away; in part, it is the joy of playing music. Ron is well aware of the highs that emerge from successful performances

and the good feelings that come from reaching goals and doing "better and better and better." In this sense, his mode of engagement is complex: enjoying the activity as an end in itself and as a means to an end.

Ron's ESM responses also provided a dramatic example of how his deep interest in music helps him to rise above other problems. One evening during a rehearsal for a local production he answered four ESM signals over a 3-hour period. The first came at 5:15 p.m. when Ron was carrying his saxophone into a theater and getting ready to rehearse a show's music. He saw that his fellow band members (whom he was responsible for) had not yet arrived, so he decided to cram in some homework while waiting. He commented on the self-report form, "Why can't a day be 36 hours." At this time, he was feeling a bit tense, but his moods were not particularly negative.

Approximately 15 to 20 minutes later a second signal arrived, and the members of his band had still not shown up. Now he was clearly worried and reported feeling self-conscious, not in control of the situation, very irritable, ashamed, and tense. The third signal came at 7:00 p.m.; he was still alone, wandering around the theater and thinking about "why and how people can be so cruel." Apparently his friends had finally shown up for rehearsal, but he felt that they didn't care about him and he was wondering, "Am I that shitty of a person?" His mood had grown much worse: He was now having difficulty concentrating and was feeling "lonely" and "closed" in addition to the tension and sense of shame he was still feeling.

These negative feelings were partly the result of the importance Ron placed on his friends in music. He maintained close relationships with teachers, some of whom were quite a bit older, and he enjoyed the company of the members of the band. Because relations with his parents were so poor, the time he spent with these friends seemed to have added importance. Perhaps because of his insecure family situation, he was susceptible to self-doubt and depression concerning his value to others. By the time the third ESM signal came at rehearsal, he was lost in one of his moody introspections (a scenario that was repeated on other nights when he was with his friends). His mood had sunk so low that his ESM report at 7:10 represented his worst mood of the entire week.

Yet miraculously, at 8:30 he responded to the pager signal with the best mood of the week. What had made such a profound difference and turned

black depression into elation? He was playing the saxophone for the show and was apparently having a flow experience. He reported perceiving high skills and high challenges (9 on each scale, the highest possible response) and was very much in control, *quite* happy, cheerful, sociable, open, relaxed, alert, clear, concentrated, intrinsically motivated, involved, and feeling that what he was doing was important to his overall goals. Once again we can see the crucial role of music for Ron. It provided him with opportunities to involve himself in something enjoyable and important to his future as well as with a way in which to avoid “falling apart” because of personal problems. As long as he could keep himself together until he could get his hands on his instrument, and if he could listen to music while showering and doing other mundane things that might allow his mind to wander, then he was happy and had a sense of satisfaction.

Ron’s life illustrates the point that whereas it is *more likely* that commitment to talent will be associated with complex families and healthy personalities, a high quality of optimal experience during talent-related activities can help a young person overcome stress that might otherwise be overwhelming. The overcoming of personal troubles is a familiar story to those who study the development of creative talent. Numerous biographers and researchers have interpreted negative events as providing the initial impetus toward remarkable accomplishment. The point we wish to make here is the similarity between courses of development stimulated by negative and by positive events. In other words, what is essential to talent development – regardless of whether positive or negative factors are involved – is that relevant problems in a domain of talent are a high focus of attention over long periods of time. We have argued how the complexity of fields, domains, families, teachers, and personalities can help in focusing attention, which is necessary for talent development insofar as these factors facilitate a student’s need to grow through the processes of integration and differentiation. However, as the case study just described shows, other factors can also motivate concentration.

It would be a mistake, though, to overstate the importance of negative factors, which are all too often romanticized in our culture. We tend not to believe such revered figures as T. S. Eliot, who commented near the end of his life that he had given up too much for his poetry. For every Ron who is successful in shutting off the “realization that his family exists,” there are probably many others who are immobilized by their personal prob-

lems. Furthermore the foundations of a talent that rests on such “negative” motivations may be precarious.

For instance, seeds of later problems may already be planted in Ron, even though music is still masking their existence. His ESM responses show flirtation with drugs and alcohol when music is not available to provide an emotional outlet. These alternative paths of escape could someday compete with music for his attention disastrously. In addition, success in shutting out his family problems may only be temporary. Ron lives with contradictions. At one point in the interview he suggested that he wanted to make a lot of money in music so his parents could quit their jobs. By removing their everyday burdens (financial and otherwise) he hopes to make them less miserable. Thus two of his nemeses – money and family – become entwined in his fantasy to help everyone live happily ever after.

One thing is certain at this crucial point in Ron’s development: He enjoys music. It provides a way for him to live enjoyably in the moment and to look to the future – to set goals and to maintain the discipline needed in order to bring these goals to fruition. As is typical of others in the committed group, Ron’s experience with talent is complex and not easily classified as either hedonistic enjoyment or hard work. These gifted youngsters are open and involved with what they are doing, and they are aware that it is important to their long-term goals. They feel highly skilled and highly challenged and thus seem able to maintain the tension between the need for continuity and the need for change.

CONCLUSIONS

There are many reasons why it is important to understand better the connection between experience and education,⁹ not the least of which is to resolve the ideological differences that plague many families and schools. There are often two seemingly antagonistic educational philosophies at work in modern society. One group of parents and teachers is convinced that a stronger emphasis should be placed on impulse control, discipline, and hard work; another group sees true education as hinging upon students’ enjoying and being excited about learning. Thus some parents are “serious” about educational matters, and some stress playful

freedom and self-initiative; some teachers strive for a reputation of enforcing strict discipline and teaching "by the book," and others see themselves as liberated, "fun," and interesting. The more conservative group is afraid that too much playful interest will undermine the work ethic, and the more liberal group is afraid that an emphasis on discipline will restrict the joy of inquiry.

The results presented in this chapter suggest that such entrenched positions are based upon an inadequate understanding of the relationship between experience and education. The profile of committed students indicates that it is erroneous to believe that serious goal-directedness cannot be united with a sense of enjoyment and excitement over the task at hand. The fact that adolescent talent development was predicted by the presence of high momentary involvement and high importance given to goals, high skills, and high challenges (as well as being associated with complex families and personalities) suggests why an either-or philosophy of education won't work. The very nature of complexity defies such reasoning, and perhaps the function of complexity in these various systems is to defy the obstacles to growth that such one-sidedness entails.

This chapter has provided empirical support for the importance of dialectical models in the study of talent development, or development in general. Despite the difficulty in measuring integration and differentiation, and despite the attraction of supporting either the side of play or that of seriousness, what is gained in terms of insight into development makes it worth the effort to keep the tension between these alternatives alive.

The committed students in our study defy easy description. They enjoyed their talent work, but they were not hedonists who avoided hardships and discipline. Indeed, they worked very hard, but they were not anxious and pressured while doing so. Although they were an elite subsample of an already elite group of young students, and although some researchers may object to trying to understand development from such a perspective, Maslow was probably correct in claiming that the study of health is at least as important as the study of pathology.¹⁰ We can learn much about average development by examining positive extremes.

Even Ron Schwartz has much to teach us about talent development. Despite any other weaknesses he may possess, or perhaps because of them, he has found a way to let music turn disorder into order. In previous studies we borrowed the term "dissipative structures" from the field

of biology to help explain how living systems are able to exploit chaos and make use of dispersing energy to create order.¹¹ Psychic dissipative structures are attentional habits that exploit conflicting information to create order in experience.¹² Ron seems to use involvement with music to order his life. Whether in time it will become a genuine dissipative structure and help Ron transform his problems and not just avoid them, it is too early to tell. However, his story speaks about the power of human consciousness to turn disadvantage into advantage.

If the enjoyment of complex experience is central to the work of the most engaged high school students, it is useful to ask how often it is missing from the average student's day. To help all young people fulfill their potential, it seems urgent to place a higher value on the importance of enhancing the quality of educational experience for *all* students. If parents and educators acted to implement this knowledge, much waste of gifts could be avoided.

NOTES

- 1 Dewey, 1938, p. 27.
- 2 Ibid., p. 79.
- 3 The phrase "a path with a heart" is adopted from Castaneda (1971); it was used by the Yaqui sorcerer Don Juan to describe a life based on personal choices.
- 4 Csikszentmihalyi 1975, 1990a.
- 5 Rathunde, 1991a, in press.
- 6 See Schiefele, 1991.
- 7 See also Rathunde, in press.
- 8 Nakamura, 1988.
- 9 Dewey, 1938.
- 10 Maslow, 1968.
- 11 Csikszentmihalyi, 1978; Prigogine, 1980.
- 12 Csikszentmihalyi & Larson, 1984.