Chapter 10

Coping with Classes

Being Adolescent

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IN the lives of teenagers, the school vies with family as the most prominent adult institution. Part jail, part temple of learning, it takes up one full third of an adolescent's waking time. What happens during those long hours? Experts can tell how much English and math students learn in schools, how their IQ scores affect their performance, even how socially involved they are while in school. But this is only the tip of the iceberg. Reading and math scores are important, but more important yet are the psychological strengths and weaknesses nurtured or weeded out by formal learning. As more than one observer has noted, and most of us suspect from direct experience, "What is learned in high school, or for that matter anywhere at all, depends far less on what is taught than on what one actually experiences in the place" (Friedenberg 1966, p. 89).

If students felt, on the whole, that being in school advanced their goals, if they enjoyed the academic challenges, their selves would glow stronger as they learned. But schools are essentially machines for providing negative feedback. They are supposed to reduce deviance, to constrain the behavior and the minds of

adolescents within straight and narrow channels. Thus it is difficult for many young people to feel that schools provide negentropic experiences. In this chapter we shall see how different subject matters and different classroom activities are related to the quality of experience and see the effects of moving back and forth between classes and other settings. In addition, we shall explore the relationship between how students feel in class and what grades they get at the end of the term. It is important to begin finding out what the educational process does to the self as a whole, not just to its cognitive dimensions.

A community needs people who are self-confident, motivated to achieve yet respectful of others, who are adaptable, original, and at peace with their own selves, more than it needs students who score high on tests. Yet the former traits are difficult to measure while academic performance is easy; therefore, schools are evaluated in terms of what can be measured, while the rest is ignored. It is impossible to tell how much harm or good schools do until the total impact of formal education can be assessed, not only its most obvious cognitive results.

The lack of clear measures for evaluating psychological effects of formal education has not deterred scholars and laymen alike from passing judgment on what happens in schools. Some of the studies of high school life present a rather dismal picture (see, for example, Bowles and Gintis 1976; Coleman 1961; Friedenberg 1966; Havighurst 1948; Henry 1965; Hollingshead 1949; Holt 1967; Goodman 1964; Illich 1971). Based on sensitive observation, empathy, and common sense, they carry conviction—at least for those who share the observer's assumptions. Unfortunately, their divergent conclusions are often difficult to reconcile. Although most commentators agree that schooling is a powerful source of alienation among youth, the reasons proposed for this state of affairs are often diametrically opposed to one another (see Larkin 1979; Wynne 1980).

The Historical Mandate of High Schools

In the roughly five centuries of their existence, Western public schools have performed a variety of functions. In Europe, they first served to pass on the all but lost learning of classical antiquity and the lore of the Church. In the turmoil of the Middle Ages, the cathedral schools tried to maintain the symbolic patterns of a culture threatened by constant barbaric invasions. More specifically, they served to recruit and train the clergy, whose power depended on its access to an esoteric knowledge derived from the past. How important this purpose was is shown by the fact that the earliest schools of the West were often taught personally by a bishop, who in those times occupied one of the most powerful positions in society (Ariès 1962, p. 139).

With the decline of the Church and the emergence of strongly centralized nation-states, schools began to respond to different needs. Especially in France and England, the demands of a bureaucratic civil service dictated common standards of literacy and accounting procedures; thus school curricula began including such topics as modern grammar, arithmetic, and bookkeeping, to serve requirements of a broader segment of people.

Schools also began responding to emerging notions of personal development. The medieval belief had been that human character was a fixed, immutable entity, but enlightenment thought began to acknowledge the role of experience in molding adult personality. Jean Jacques Rousseau propounded a theory that the natural inclinations of the child had to be gently nurtured and protected from the corrupting influence of society, while others saw a need for schooling to subdue and domesticate the child's unruly instinctual tendencies. In both cases the implication was the same—an expanded role for schooling in the lives of young people.

In no place was this expanded role given more credence than in the newly founded United States, where dreams of a utopian

social democracy were based upon a belief that education could cultivate the best in human nature. Through universal schooling, America was to rise above the despotic patterns of life in the old world. Horace Mann, the fervent head of the Massachusetts school system, declared that society would be "cleared from the harpies, the wild beasts, and the foul creeping things which now dwell therein!" (1891, p. 215). Schools were to nurture desirable personal traits such as industry, obedience, and cleanliness, and to propagate the values of equality and cooperation.

In the early years of the nineteenth century, Mann and other reformers heralded universal *elementary* education as the key to the development of "the new race." But in the later part of the century, a succeeding generation of reformers turned to *secondary* education to realize the dream. The "comprehensive high school" was conceived as a miniature version of society that would refine civic responsibility and provide finishing touches on older students. Run as an ideal democratic community, it would play an embryonic role in promoting social evolution within the wider society (Krug 1964). Frightened by massive waves of immigrants not yet socialized to the system, other experts called bluntly for the use of the schools as a means of "social control," an instrument to tame these uncivilized newcomers, suppress their excessive "individualism," and teach conformity to American society (Ross 1901). In later years, in the 1930s and 1960s, high schools would again become the focus of major campaigns for societal reconstruction and reform.

Since these beginnings, schools have been conceived as a means to a social end. Whether that end involved passing on the classics, providing vocational training, taming the masses, or founding a social utopia, the role of schooling has been to prepare youth for a productive role in adult society. The objective was to reduce randomness within individuals so as to synchronize their goals with the social order, whether that was the existing one or an idealized social order envisioned for the future. Carrying out these social goals, however, presupposed that the school could engage the students' cooperation.

From the adolescents' point of view, the ends of schooling are

clearly external to their immediate interests. Schooling is not designed to appeal to what is familiar and instinctually interesting; rather it deals with the abstract, the complex, the unknown—with materials that are inherently difficult and alien: French, mathematics, literature, ancient history. In other contexts—with family, with friends, and in solitude—the activities and topics of thought are at least partially negotiable; there is some latitude to change the situation according to personal interests. But the activities of schoolwork are fixed by social purpose into a rigid institutional structure. Assignments and tests follow upon each other regardless of whether the students are ready or not. Hence, of all parts of an adolescent's life, this is the least responsive to spontaneous inclinations.

Put in these terms, the task of education is one of socializing through seduction. The success of the school depends on how effectively it can engage the students' minds toward its objectives. Can it generate interest, motivation, and focused attention directed toward the goal of creating conformity to its conception of an "educated" adult? The school in this study was one of the best in the Chicago area. The students' reports suggest how effectively a very good high school succeeds in achieving this goal.

The Pattern of Adolescents' Attention in School

In the 1950s a blue-ribbon commission recommended that the high school day be divided into at least seven class periods (Conant 1959); the school in this study had nine. An important result of this subdivision is that much of the time spent in school has nothing to do with learning, but is taken up by walking to and from classes, open periods, and lunchtime, most of which is spent with friends. Thus, in its very conception, the school day is set up as an emotional tug-of-war between classwork and friends. It is important to consider this noncurricular time to understand the school experience, but first we will focus on what happens during formal classes.

The domain of class self-reports is comprised of all times the students reported being in a school class. It includes shop classes, art classes, and gym, as well as mathematics, science, and English classes; it excludes study halls, passing between classes, and hanging out in the student center. It also does not include studying at home, which falls in the domain of either family or solitude.

During class, the students reported their main activity to be related to some form of academic activity for a remarkable 78 percent of the self-reports. Listening to the teacher, studying, and taking tests accounted for a much larger portion of time than did diversions like socializing, passing notes, or sleeping (Figure 10.1). However, the fact that students listed schoolwork as the activity they were doing does not mean they were giving it their undivided attention. In fact, they indicated schoolwork as their topic of thought for only 40 percent of all occasions in

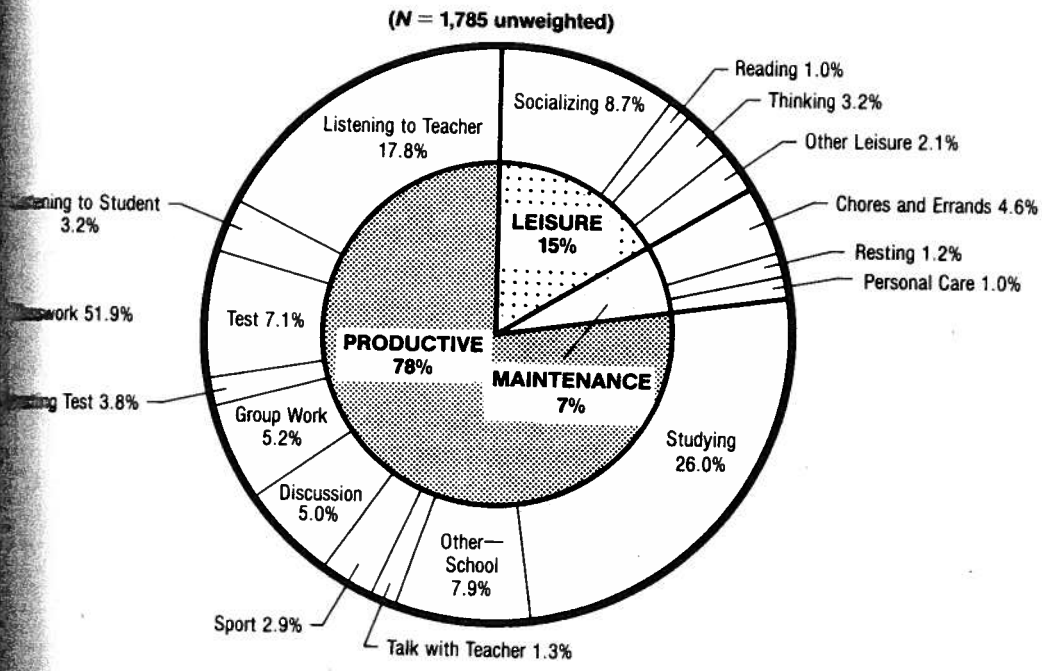

FIGURE 10.1
What Teenagers Do in Class

class. More important is the rather abysmal pattern of activation, cognitive efficiency, and intrinsic motivation shown in Figure 10.2.

Compared to other contexts in their lives, time in class is associated with lower-than-average states on nearly every self-report dimension. Most notably, students report feeling sad, irritable,

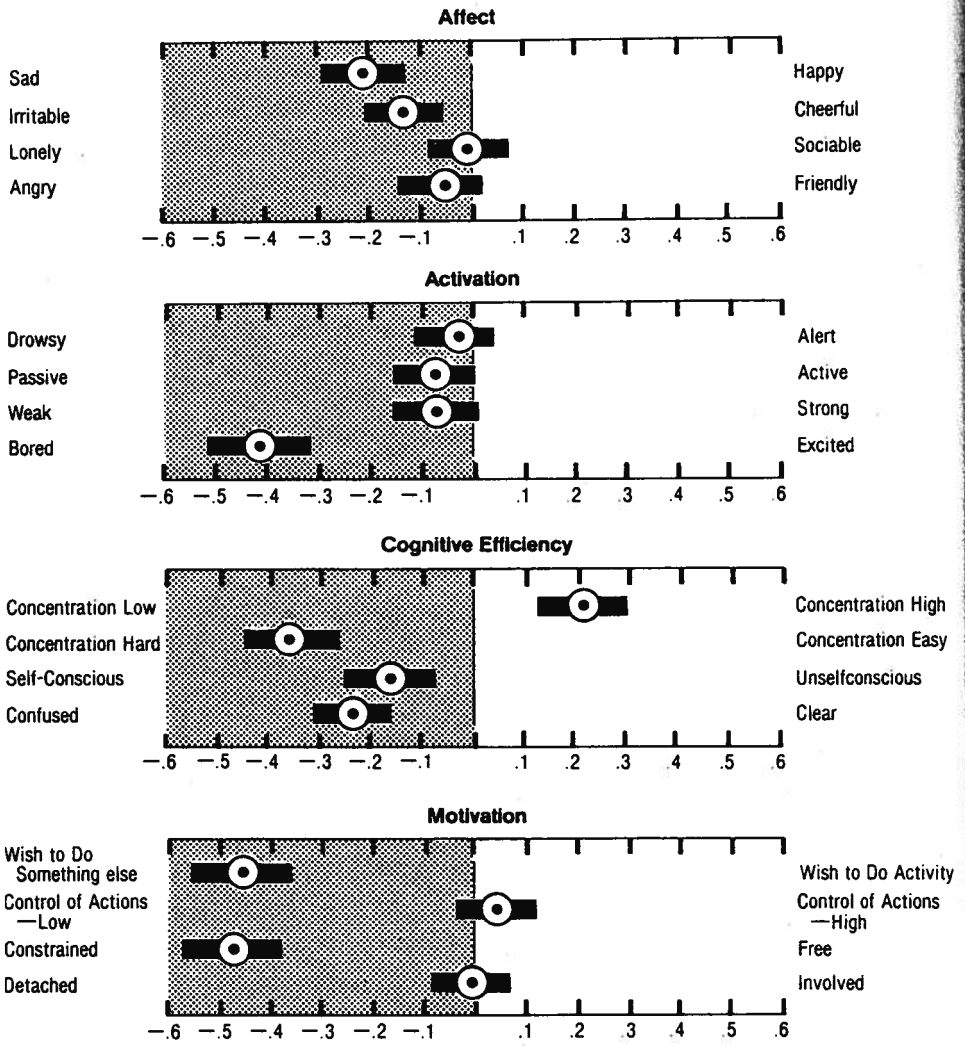

FIGURE 10.2
Quality of Experience in Class

and bored; concentration is difficult; they feel self-conscious and strongly wish they were doing something else. The only encouragement in this profile is their higher-than-average concentration. In spite of negative feelings and motivation, it appears they are able to tune into class for at least some of the time. Perhaps because school can motivate students extrinsically with immediate punishments and long-term rewards, it wins at least a portion of students' attention, although in conjunction with negative affective and motivational states.

That the profile of average states in class is a strained, uneasy compromise of elements is evident when we look at the correlations among these various dimensions of consciousness. Concentration in class is both deeper and easier to achieve when students are in a favorable emotional and motivational state (Chapter 5). Feeling strong, active, and motivated is related to a more efficient cognitive state, suggesting that it is when students are intrinsically motivated that the school is successful in capturing their attention. Yet motivation in class is rarely intrinsic, hence concentration in class is achieved at the price of great effort and often results in feelings of confusion rather than clarity.

A number of researchers have come to similar conclusions using one-time assessments of experience (Moos 1979; Ugurolglu and Walberg 1979). Good moods and good grades go together in school; clearly, negentropic states of consciousness provide better conditions for learning. It is unfortunate, therefore, that the average student is usually bored, apathetic, and unfriendly to the situation.

The founders of the American high school undoubtedly envisioned rows of attentive students happily absorbing lesson after lesson. One hundred years later the reality is far from this vision. Even in a very good high school, such as the one studied here, students are neither attentive nor happy, and they are probably absorbing only a fraction of the information being presented. This picture varies somewhat, however, for different parts of the curriculum. Some academic subjects and some ways of learning appear to produce less psychic entropy than others.

How Class Content Relates to Attention

Do students tend to be as happy—or rather, as unhappy—in algebra as in gym? We looked at reported states according to type of class to see how students fared with different parts of the curriculum. Classic academic subjects such as mathematics, foreign language, and English showed the lowest levels of intrinsic motivation, coupled with low affect and activation (Appendix D. 16). These classes, which deal with highly structured abstract symbolic systems, appeared to produce the greatest entropy in students' consciousness. In comparison, classes that provide more concrete goals and require more than intellectual skills, such as industrial arts, physical education, and particularly music, were associated with more favorable motivation and with positive affect. These classes involve students in some form of physical and sensory participatory activity, whereas math, English, and languages are entirely cognitive.

The difference is particularly evident in the pattern for the item "ease of concentration." In English, foreign language, and history, the students report that it is substantially harder to concentrate ($z = -.36$ on the average) than in physical education, home economics, or music ($z = -.05$ on the average). Clearly, they experience the more academic topics as more difficult. To order complex symbolic systems requires more psychic energy. Many students may not have enough to cope with these challenges. It is tempting to attribute the low motivation of students in academic classes to some deficit in their moral fiber: "Kids today are spoiled and unwilling to take work seriously." However, it is also possible that many lack involvement, not because they will not work diligently, but because they cannot.

There is another factor to be taken into account. The quality of consciousness in class is also related to the type of learning activity that is taking place. Appendix D.17 shows that intrinsic motivation is relatively high in informal activities like group work and discussions. This is also when students are most happy and

active. Passive activities like listening to the teacher or to other students are much less pleasant. Ironically, while listening to other students might be "democratic," it is one of the least successful activities in getting students involved, except—as we will see in a moment—for the student who happens to be talking.

There is one activity that is a curious anomaly from the general pattern. When taking a test or doing a quiz, students report extremely low motivation and affect, but also extremely high concentration. This combination stands in marked contrast to the correlations between affect and cognition we discussed earlier. While it is generally more likely for concentration to occur in conjunction with positive affect and motivation, tests represent an opposite situation. The great majority of classroom involvement conforms to the paradigm of the carrot, but this is the stick: this is concentration inspired by the fear of an external punishment. And it seems likely that the coercive influence of tests accounts for at least some of the low states reported at other times.

The classroom provides largely negative feedback. It is opposite from the situation with friends where a wide range of novel, random, and crazy actions may be reinforced. The ratio of thirty to one provides the teacher with little opportunity to respond to each student in a supportive or personal way. His or her job is to see that students conform their behaviors to accepted definitions of being educated. This may be done through punishment, threat, or reward, but the basic thrust involves "deviation reduction," which is the technical definition of negative feedback. From the students' point of view it is easy to see why the experience is often unpleasant. Conforming requires more than simply being good, it requires attending to and learning complex information with which one is unfamiliar.

However, the purpose of schooling is not immediate gratification, but rather psychic change toward adult goals—thus the justification for coercive techniques to capture and restructure the students' attention. Unfortunately, the result is that the average student pays little attention to the goals of the classroom, and does so without enthusiasm or pleasure.

A Case Study: Freud, Marx, and Darwin versus Boy Friends and Fire Drills

There is another story to be told, represented not by *average* states in class, but by the *variability* in consciousness that takes place therein. Eight adolescents from the study happened to be in the same world history class, all responding to pagers during the same week. The sequence of their self-reports provides a good illustration of how the subjective picture of a classroom fluctuates.

It was an advanced level course for freshmen and sophomores, a class students generally liked. It was small, with only seventeen students, and the teacher lived in the neighborhood, and thus was well known. The students also knew each other pretty well and apparently got into lively discussions. "Everyone has a good sense of humor," we were told. The presence of pagers, therefore, was cause for some joking, but the students appear to have been quite candid nonetheless.

The week was one in which the students themselves were running the class. Each had prepared a report on a major nineteenth-century personality and had to present it to the group. What happens in such circumstances is particularly interesting, given that the situation combines peer interactions, normally fun, with the usually unenjoyable, task-oriented goals of the class.

Monday's report is one on the theories of Freud, by a bright and sensitive student we shall call Andrea (see Figure 10.3). She is successful in motivating the class: All four students who are carrying pagers are paying attention, and they report high activation. Andrea's activation is the highest; as she leads the discussion, she is very excited, alert, and strong. Perhaps it is her involvement that keeps the other students attentive.

The story is different on Tuesday. Now seven students are carrying pagers and their self-reports show a wide range of moods, and only four are paying attention. Either Darwin is not

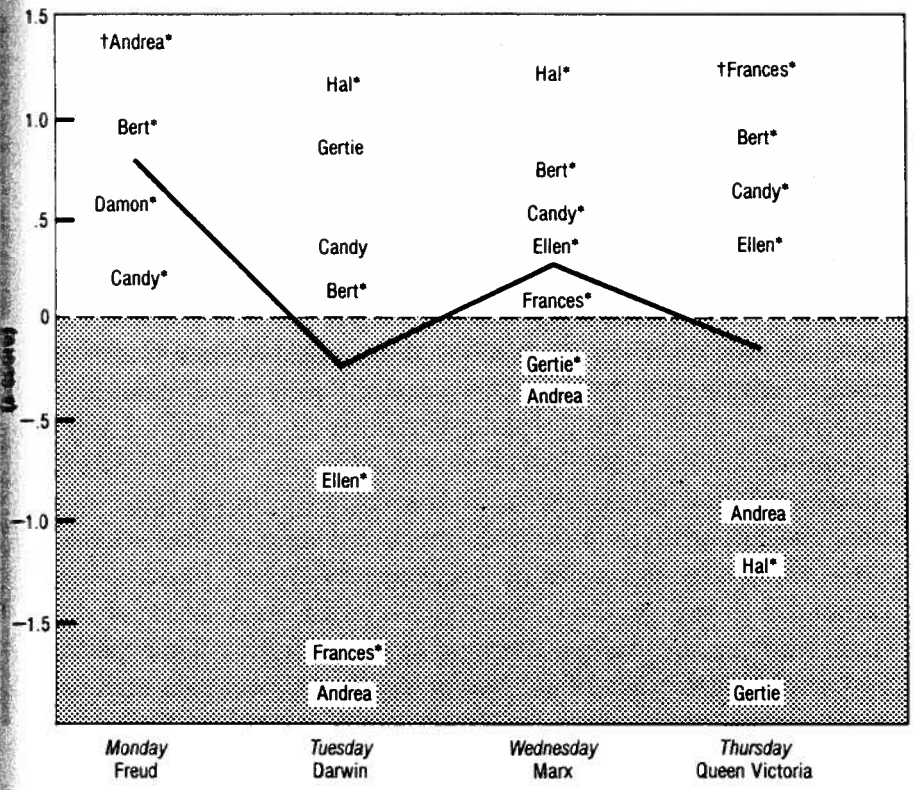

FIGURE 10.3
A Profile of Activation Levels in Four History Classes
The dark line shows the average for each class session.
† Indicates student who is giving the presentation
* Students who report paying attention

as interesting as Freud or the presenter is doing a poorer job. Bert feels the latter is true and is arguing with the presenter about what he is saying. Gertie and Candy are talking to each other, and one comments sarcastically that the speaker is making a fool of himself. Andrea, having given her report already, has her mind on other matters. Preoccupied with a boy she has a crush on but does not know, she is watching her hands shake and tries to calm herself down. She also comments that, "the guy next to me is drawing the neatest airplane," and attempts to duplicate it on the pager sheet.

Wednesday, students again are more involved, though we get discrepant reports on the topic. Average activation is higher than the day before, and six of seven report paying attention: however, two say the topic is Hegel, while four say it is Marx, perhaps an understandable lack of consensus that suggests the breadth of what is being covered and the cause of confusion reported by Gertie. Andrea is daydreaming about Bob Dylan.

On Thursday the class discussion once more is engaging. The presenter, Frances, reports appropriately high levels of activation, but afterward she concedes that she is dissatisfied with her performance and feels her notes were not quite good enough to pull things together. Only four of the other six students are paying attention, and one of these is "very bored." Gertie is daydreaming about fire drills, and Andrea is trying to figure out how she can arrange to run into this adorable guy after school.

On the whole, this week of world history class is positive—as compared to the profile of average states in class. Most of the time, students are paying attention to what the teacher expects, and activation is fairly high. Two of the four classes rate high on involvement. But what is striking across the week is the enormous variability, ranging from two standard deviations below mean activation to almost two above. And each student except Bert and Candy show substantial variations within their own reports. Numerous explained and unexplained fluctuations in state occur.

Even within each day, these students underwent dramatic changes in state before, during, and after world history class. For example, on Tuesday, Frances's activation level increases by four units following her torpor in class. At 3:15 P.M., listening to the Darwin presentation, she is extremely bored, passive, and weak, but at 5:15 P.M., she is at home playing a Beethoven sonata and is in top form. Meanwhile, Gertie, who was inspired by the Darwin presentation, registers a drop of three units between 3:15 and 5:15 P.M.

Perhaps what is most significant about school is not that the typical states are so entropic, but that the general pattern is so chaotic. To someone observing this class, it might have appeared an orderly epitome of good, democratic, high-school education:

students engaged in lively discussion about four of the great figures of the last century. Yet what was taking place in the students' minds was clearly a different story. Competing goals often directed the students to focus on information that was completely irrelevant to the stated goals of the course. Emotions derived from the ups and downs of their personal concerns kept disrupting their precarious concentration on the teacher's agenda.

Emotional variability has a great impact on the process of schooling. The cognitive activity required by class must find its place in a kaleidoscope of changing emotional states. Thus the success of class in catching students' attention is a highly uncertain matter. This uncertainty defines the amount of social entropy present in the class, which must be reckoned with in addition to the psychic entropy caused in the consciousness of students.

Mood Fluctuations in the Typical School Day

Following students' moods across a school day shows how they experience the variability. It also allows us to examine the competition between class and friends for their attention. The constant switching back and forth between classes and hallways, gyms, and lunchrooms keeps scrambling their moods—concentration dissipates as they leave class, but positive affect improves. The opposite happens as they walk back into the classroom. It is amid this alternation of emotions that learning is supposed to take place. The sequence of excitement versus boredom each day is presented in Figure 10.4.

Not unlike adults, adolescents get up in the morning with little excitement. In the preschool hours between 7:00 A.M. and 8:20 A.M., few of them are enthusiastic about facing the day. On the full range of mood items from excited-bored to happy-sad, they rate their emotions as negative. It is clear that early morning hours are among those difficult times with family when positive moods are eclipsed by practical maintenance needs. There are conflicts over use of bathrooms and hostility across the breakfast

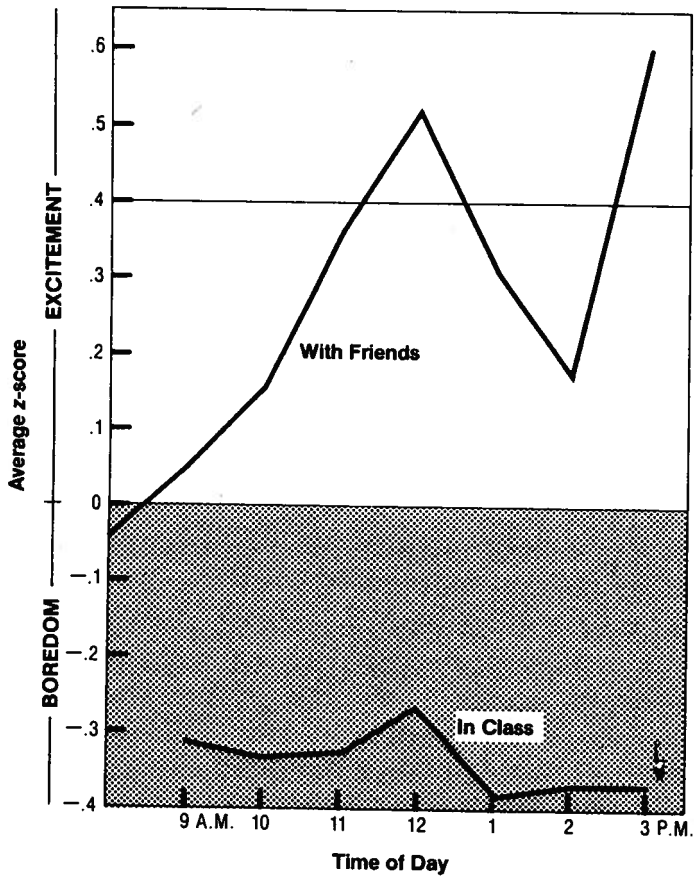

FIGURE 10.4
Excitement and Boredom during the School Day

table. Even with friends at this time of day, moods are relatively negative.

When they get to class, some of their emotions improve, but others remain at the same low level. The average reported state is boredom and wishing to be doing something else. Only around noontime, when students take lunch with friends, does excitement rise considerably. In fact, some of the best interactions with friends are reported during noonhour conversations and joking around the cafeteria table. After lunch, however, the emotional baseline dips again as students return to class. The average state in class is generally negative, regardless of the

hour. Only after school do average moods improve again. In sum, the school day could be pictured as two valleys of negative experience separated by one peak at lunchtime.

Contact with friends occurs most often during lunch hours, but it also takes place between classes and during free periods. The quality of experience when with friends is about the same in school as it is outside of school: Students feel happy and motivated.[1] Thus, when they shift from being in class to being with friends, their moods register a dramatic improvement, as can be seen in Appendix D.18. Average moods improve by one half a standard deviation or more. Conversely, when they return to class, when they make the transition back from friends to schoolwork, their moods show an equally drastic decline. Class appears to have an almost instantaneous entropic effect on consciousness. The two halves of Appendix D.18 are almost a mirror image of each other. The greatest changes occur in two of the intrinsic motivation variables: The experience of freedom and the wish to be doing the activity are the most severely affected.

Clearly, one source of variability in the school experience is due to the repeated contact with friends. Whether this variability helps or hinders the educational process is not clear.

To begin answering this question, we looked at the moment-to-moment continuity of states within the two contexts of class and friends, and in the transition from one to the other. Appendix D.19 shows the correlations of contiguous self-reports on the various dimensions of experience.

When staying in the same class or when going from one class to another, moods remain stable. Almost every variable is correlated from one time to the next. There is also a similar, if less pronounced, stability when the two consecutive self-reports are filled out in the company of friends in school. But when crossing between the two contexts, psychological states are completely discontinuous. In statistical terms, there is no predictability from one time to the next. In other words, friends disrupt the pattern of consciousness from the previous class. Thus, if a student be-

1. Research of Kelly and associates (1979) suggests that there may be a great deal of variability from school to school in the kinds of experience students have while they are outside of class but still inside the building.

comes deeply involved in a class, the interactions with friends are almost sure to disturb that concentration. Repeated contacts with friends during the school day appear to prevent engrossment in serious scholarship.

At the same time, however, friends bring order to the entropic states an adolescent might encounter in class. While they erase positive involvement, they also bring an end to negative states. In fact, this latter effect could be the more important one because there is a tendency for concentration to wane the longer a student is in class. When filling out reports in class two times in a row, concentration drops significantly, and the wish to be doing something else increases (Appendix D.18). Contact with friends appears to check these losses in cognitive efficiency and motivation. Friends apparently revitalize a student and increase his or her capacity to concentrate on class work.

Thus, contacts with friends play both a negative and positive role, disrupting positive attention, but also reviving students whose attention has waned. On the one hand, they stand in the way of serious, prolonged concentration, but on the other hand, without them concentration might be even more rare. The effect of peer interaction in school is that of a randomizer—it scrambles a student's attention. It provides a dose of positive, deviation-amplifying feedback to counter the negative, deviation-reducing feedback of the class. After being with friends, an adolescent will be in a different state, possibly one more receptive to learning, possibly one less receptive. On the average, there seems to be a slight relative gain. But the really significant impact of friends is probably not this slight gain, but the variability that is introduced into the school day.

Teacher's Dilemma

The great fluctuation in their students' consciousness presents a serious predicament to the teachers. They are confronted with twenty or more teenagers whose minds are usually elsewhere.

Their job is to engage the students' attention with information that is not about sex or violence, that is not related to the students' immediate personal lives, and, furthermore, may be difficult for them to learn. They have before them a group of highly moody, distractable teenagers, generally unaccustomed to concentrating on anything for more than 15 minutes. How can they step into the flux of their lives and reshape their attentional processes?

The example of the world history class reported earlier shows that how the class is conducted does make a difference. Some of the students who took the teacher's role were effective in engaging their peers. During the Darwin presentation, five of the seven students showed a drop in emotional states compared to their prior self-reports. In contrast, the discussion of Marx and dialectics was associated with an elevation in mood for six of the seven students. It is clear that there are ways of presenting information that are more effective in attracting students' attention (Csikszentmihalyi 1982b; Plihal 1982).

Teachers in the high school we studied had developed many different styles and strategies to insure that students paid attention to them. Often these were dramatic theatrical devices. One teacher had been known to pull a dead fish out of his desk drawer in the middle of a lesson. Another was notorious for tongue-lashing students who were even two seconds late to class. Some flamboyant teachers were greatly loved and basked in almost magical awe. Others, perhaps not as skillful, were seen as crazy or unreliable, especially when their unpredictability extended to the way they graded students.

Some teachers made their classes like a TV show, full of entertainment. One teacher did this quite literally; if he had three points he wanted to get across, for example, he would switch an imaginary channel between each one so that each was its own separate show. And to provide relief he would make up advertisements appropriate to the topic of the moment, or improvise comical monologues on "the misunderstood comma," or a new book.

The most impressive approaches were ones that directly pulled students into the subject matter itself. A sociology teacher

teaching sexual relations had discovered in *Seventeen* magazine a series of "lines" guys often give girls in trying to coax them into sexual involvement. Skillfully he confronted the class with each one, pressing the girls to generate an array of clever responses, and shaming the boys lest they ever try making advances with this kind of manipulative rhetoric.

High school teachers are rarely given credit for their cleverness in generating interest in the subject, yet this is a prerequisite for any kind of learning. It is true that even more effective than clever stunts borrowed from the world of entertainment is the teacher's genuine interest in the subject he or she is supposed to teach (McCormack 1984). When a person is intrinsically motivated in what he does, chances are that the curiosity of others will be aroused. They will want to know, why is this person so interested in this boring subject. Once curiosity is caught, the teacher's job is made much more easy.

What is unfortunate is that all of this seduction must be done at a group level—with each student participating remotely as another face in an audience. Within a year a teacher rarely gets a chance to learn more than a student's name. Boys and girls advance through the grades, having never experienced education in a personal way. Teachers can offset the pain of their negative feedback with group classroom techniques, but rarely does a student reap the rewards of personal attention and support. Schools are designed to maximize students' acquisition of knowledge as a cold and anonymous affair.

School in the Economy of Adolescents' Lives

The rallying cry of reformers at the turn of the century was education for "social efficiency" (Krug 1964), a term that suggests schools should operate with the utilitarian calculus of Henry Ford's assembly lines. William Bagley, the education professor who first used the term, wrote:

> Social efficiency is the standard by which all forces of education must select the experiences that are impressed upon the individual. Each subject of instruction, every item of knowledge, every form of reaction, every detail of habit, must be measured by this yardstick [1905, p. 60].

Almost eighty years later, after decades of classroom research, we have little realistic conception of what efficient education might entail. It is apparent from the data just considered that students are less malleable than most educational theorists suspected. It is quite a difficult task to "impress" experiences on their consciousness against their will. But perhaps learning to tolerate the boredom, the variability, and the emotional disorder experienced in class is actually part of the "social curriculum" of the school. Through sitting in class they may learn to endure the complexities of life and the challenge of emotional growth in a hostile and competitive society. Conversely, the abrupt shifts in emotional states, the impersonality, the internal chaos might constitute an obstruction to serious learning. Efficient preparation for adulthood might require long periods of stable, patient attention focused on structured topics.

These are questions to which there are as yet no answers. Educational research provides no wisdom as to what balance of booklearning versus emotional experience, structured attention versus spontaneous curiosity, extrinsically versus intrinsically motivated work, is related to adult negentropic outcomes.

With friends the most important task adolescents have to master is learning how to build behavioral boundaries, and how to generate negative feedback while continuing to have a good time. In class the requirement is opposite: to learn how to deal with external boundaries and negative feedback without feeling overwhelmed by them. In an adolescent's life, friends represent enjoyment, school represents preparation for the future, and family and solitude lie somewhere between these poles. Growth, as we shall discuss in the final part of the book, involves learning to synthesize the opposition presented by these extremes.