

# **3 How common and important are learning projects?**

The definition of a learning project presented in the previous chapter enables us to tackle the following question: how common and important are these sustained, highly deliberate efforts to learn, change, and grow? This chapter first describes our 1970 survey of learning projects in seven adult populations, and then presents some highlights from several other studies. After discussing people who learn an exceptional amount, the chapter ends with some speculation about the importance of learning projects compared to all other sorts of learning.

## **The 1970 Survey**

By 1970, several persons in the adult education department at the Ontario Institute for Studies in Education had intensively interviewed more than 200 men and women on a variety of questions, for several different research projects. Throughout all of the interviews, however, we were impressed by how enthusiastically and how often people set out to learn. As a result, in 1970, we decided to focus our attention more precisely on determining how common and important learning projects are.

We did not have enough interviewers or time to cover more than 60 or 70 persons. To spread our resources further, we decided to select small but careful samples from seven populations: blue-collar factory workers, women and men in jobs at the lower end of the white-collar scale, beginning elementary school teachers, municipal politicians, social science professors, and upper-middle-class women with preschool children.

Several individuals helped with the planning of this study and the development of the interview schedule: Jim Fair, Shirley Shipman, Vida Stanius, Cressy McCatty, and David Armstrong. The first three conducted the interviews.

The interviews were intensive and highly structured. Several probing questions and two handout sheets were developed to help people recall their learning efforts, because some self-planned learning efforts are especially hard to recall six or eleven months later. Few previous studies have probed adequately for them. The interviewers used the definition of a learning project outlined in the previous chapter, and were urged to omit any borderline learning efforts. The interview schedule was



a year at his learning projects, though the range was very large, from 0 to 2509 hours. Additional details are shown in Table 3.

Table 3 / How Many Hours Do Adults Spend at Learning Projects in One Year?

Number of hours	Number of persons	Number of hours	Number of persons	Number of hours	Number of persons
0-99	7	900-999	5	1800-1899	1
100-199	3	1000-1099	2	1900-1999	0
200-299	6	1100-1199	3	2000-2099	0
300-399	6	1200-1299	0	2100-2199	0
400-499	5	1300-1399	2	2200-2299	1
500-599	3	1400-1499	2	2300-2399	1
600-699	4	1500-1599	1	2400-2499	2
700-799	6	1600-1699	0	2500-2599	1
800-899	2	1700-1799	3		

We were also interested in the length of the typical project. For each person, we calculated the mean number of hours (during the past year) per learning project. If a person had spent 800 hours at 8 projects, for example, his average time per project was 100 hours. The mean of all these individual means was 104, and the median was 81. During a year, then, a representative interviewee spent roughly 90 hours at each of his learning projects.

About two-thirds of all learning projects were still current and active at the time of the interview; only one-third of the projects were completed or dormant. Our data do not include the many hours that would have been spent at some projects during the months after the interview, nor the hours spent more than 12 months before the interview. (Many projects last much longer than 12 months, as found by Tough, 1967.) A study of only *completed* learning projects would probably establish that they are generally much longer than 81 or 104 hours.

## Learning for credit

Less than 1% of all the learning projects uncovered by the interviews were undertaken for credit, which included "credit toward some degree or certificate or diploma, . . . toward passing a test or examination, completing an assignment for a course, or producing a thesis, . . . toward some license, or a driving test – or toward some requirement or examination or upgrading related to a job." If the desire for credit was even 30% of the total motivation for the learning project, it was counted as a credit project.

Despite the detailed questions and the subsequent probing, we found that only 0.7% of all the learning projects were for credit. Apparently learning for credit forms

only a small portion of all adult learning. One tends to agree with Johnstone and Rivera (1965) who concluded that "in the main, the earning of formal credit is not an important motive in the educational behavior of American adults [p. 68]." At the same time, one must realize that the actual number of adults taking courses for credit (including full-time students who are at least 21 years old) is rather impressive, even though the percentage is not.

### Some "soft" data

Many unsolicited statements and actions during interviews that convey enthusiasm and commitment confirm the quantitative data about the importance of learning projects. A strong determination to succeed, and perseverance despite difficulties, also indicate that many learning projects are very important to the person.

People are eager to talk about their learning projects, partly because they rarely have a chance to describe them to an interested listener. On the one hand, trying to improve oneself – to gain new knowledge or become a better person in some way – is certainly an exciting part of one's life. On the other hand, for some reason, people do not usually discuss this topic at parties or the dinner table. This is unfortunate, because such a discussion can reveal a very positive aspect of a person that is not evident during other conversations. Several times, during an exploratory interview with a family member or friend whom I thought I knew very well, I have discovered an attractive but unsuspected side of the person. Sometimes this impressive new aspect is a goal or an interest, sometimes an earnestness or thoughtfulness, and sometimes an intelligent, aggressive striving to become a better person.

### Comparing populations

Now let us return to the data collected in our 1970 survey in order to compare the various populations. Table 4 compares the middle or average learner in the various groups by using two measures of central tendency. For each measure and group, Table 5 describes the highest and lowest individual.

Over a one-year period, the faculty members in psychology and sociology spent more time at learning than any other group we interviewed. The typical member of this group spent more than 1700 hours at his 11 or 12 learning projects; one spent 2500 hours. This group was a random sample of associate professors chosen from the psychology and sociology departments of three major universities in Ontario.

Politicians were second highest in total hours spent at learning. The typical politician spent about 1000 hours at his 7 learning projects; one spent 2400 hours. This group was composed of full-time elected politicians at the municipal level in two large cities, including the two mayors. All had been in office for more than one year, and their educational level ranged from Grade 8 to a bachelor's degree.

The lower-white-collar men constituted the next highest group in total hours devoted to learning. These men were a random sample from lower-level positions

**Table 4 / Comparing Populations: Means and Medians**

<b>Population</b>	<b>Total hours at all learning projects</b>	<b>Number of learning projects</b>	<b>Mean number of hours at each learning project</b>
Professors (N = 10)	1491 1745	12.0 11.5	117 97
Politicians (N = 10)	1189 908	6.7 7.0	190 135
Lower-white-collar men (N = 10)	907 827	9.1 8.5	111 114
Factory workers (N = 10)	800 799	5.5 5.5	146 116
Lower-white-collar women (N = 10)	430 425	8.2 8.5	48 44
Teachers (N = 6)	395 371	10.2 9.0	42 43
Mothers (N = 10)	331 273	7.2 6.5	47 46

**Note.** – Each cell describes the average or typical learner in the sample. The first figure in each cell is the mean; the figure below it is the median (the “middle” person).

(including a department store salesman, airline passenger agent, and clerk) in large companies. They had been working at least three years, had never attended college, and were earning less than \$7000 a year.

The blue-collar factory workers were a random sample from the receiving department of a tire and rubber plant. Their jobs did not require a high level of knowledge, training, mental skill, or interpersonal skill. Each man was between 25 and 45 years old, and had not gone beyond Grade 12 in school.

In this survey, the four groups spending the most time at learning were predominantly male. We turn now to the three groups, predominantly or entirely female, that were below average in time spent at learning, though not necessarily in their number of projects.

The group of lower-white-collar women consisted of typists, stenographers, and secretaries in two large companies. They did not have any children, had been working at least two years, and had never attended college. As Table 4 indicates, on the average they conducted eight learning projects, but spent only 430 hours doing so.

Elementary school teachers in one district in their first year of teaching were

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**Table 5 / Comparing Populations: Ranges**

<b>Population</b>	<b>Total hours at all learning projects</b>	<b>Number of learning projects</b>	<b>Mean number of hours at each learning project</b>
Professors	385-2509	6-18	64-209
Politicians	365-2403	4-9	54-464
Lower-white-collar men	452-1494	4-16	49-170
Factory workers	80-2205	1-10	32-433
Lower-white-collar women	30-919	2-15	15-100
Teachers	159-677	5-20	23-62
Mothers	0-1039	0-20	13-115

**Note.** - Each cell describes the interviewee who was lowest on the given measure, and the interviewee who was highest.

almost overwhelmed with problems on the job. They conducted a fairly large number of learning projects, but could not find much time for them.

The mothers interviewed were a representative sample of one upper-middle-class neighborhood. During the year before the interview, each woman's primary occupation was that of mother and homemaker. Each mother had at least one young child who was not yet attending school or nursery school.

Some clear differences were evident within each population, as well as between populations. That is, within each population a few individuals were marked by a great deal of learning, and a few by only a relatively small number of projects or hours spent at learning. Our populations were chosen by occupation, social class, age, sex, and educational level. Apparently many other factors also affect how often a person sets out to learn. These influential factors include the individual's past experiences, his current personality or psychological characteristics, the people around him, and certain characteristics of his community and society. Some detailed speculations about these influential factors are presented in Appendix B.

### **Other populations**

Our 1970 interview schedule was used or adapted in four recent unpublished studies. In each one, the findings tend to confirm the general picture presented earlier in this chapter.

Cressy McCatty, in a Ph.D. study that is still in progress, has interviewed 54 men in engineering, medicine, and other professions. Chosen at random from the

assessment rolls of a large suburb, these men spent an average of 1240 hours per year at 11.1 learning projects.

Alex Drdul interviewed 12 successful IBM salesmen. They spent a mean of 1113 hours a year (lowest man: 630) at 13 learning projects; the medians were 1013 hours and 12.5 projects. Approximately two-thirds of the learning was job-related.

David Armstrong, in a current Ph.D. project, interviewed 40 men enrolled as full-time students in an academic upgrading program designed to provide sufficient skills for employment. The 40 men were selected by their instructors: 20 of them because they spent a great deal of time at learning, and the other 20 because they spent an average amount. The higher group, during the year before the interview, spent a mean of 1340 hours at class-related learning and another 1121 hours (13.9 projects) at nonschool learning. The lower group spent 1177 hours at school learning, and conducted 3.4 projects (100 hours altogether) at noncredit learning.

Elementary school teachers approaching the end of their first year of teaching are being interviewed by Jim Fair for his Ph.D. study. His data include only learning that is intended primarily to improve the person's professional performance and that occurred during the first seven months of the school year. The 35 teachers he has interviewed spent a mean of 500 hours at 9 projects.

## **Children and Adolescents**

In our 1970 survey, to provide an interesting comparison with adults, we interviewed 16-year-old boys and 10-year-old children. The same interviewers and basic interview procedures were used, but a few minor changes were made in the details of the interview schedule. Only out-of-school learning was included; we did not include any learning projects designed to please the teacher or to get credit toward passing the year at school.

The 16-year-old boys who were interviewed were suggested by the interviewer's friends. She asked her friends to suggest acquaintances who were a little more energetic, busy, and active than average 16-year-olds, and who were reasonably well liked by others. In short, she tried to obtain boys who were above average in activity, but normal in other ways.

About half of the 10-year-olds were chosen randomly from the same neighborhood as the group of upper-middle-class mothers. The others were obtained through a lower-middle-class school. There were equal numbers of boys and girls.

The data indicate that the out-of-school learning projects of young learners are fairly similar to adult projects. Indeed, the 16-year-olds conducted more learning projects than most of the adult groups, but spent only 70 hours at the average project. Further details are provided by Tables 6 and 7.

Several differences between the learning efforts of 10-year-olds and of adults emerged from the interviews. First, a child learns a far greater variety of knowledge

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**Table 6 / Youth Out-of-School Learning: Means and Medians**

<b>Population</b>	<b>Total hours at all learning projects</b>	<b>Number of learning projects</b>	<b>Mean number of hours at each learning project</b>
16-year-olds (N = 10)	609	9.4	66
	680	9.5	72
10-year-olds (N = 10)	139	6.2	23
	113	5.5	18

Note. – Each cell describes the average or typical learner in the sample. The first figure in each cell is the mean; the figure below it is the median (the “middle” person).

**Table 7 / Youth Out-of-School Learning: Ranges**

<b>Population</b>	<b>Total hours at all learning projects</b>	<b>Number of learning projects</b>	<b>Mean number of hours at each learning project</b>
16-year-olds	140–922	4–14	32–102
10-year-olds	14–432	2–13	7–61

Note. – Each cell describes the interviewee who was lowest on the given measure, and the interviewee who was highest.

and skill than the adult. This occurs partly because the adult no longer needs to learn anything further on certain topics, and partly because he has become more selective in his areas of interest. The child, in contrast, has a great deal to learn, and has interests that are scattered rather than focused.

Second, most of the child's learning episodes are relatively short. The child asks a few questions or reflects briefly when his interest is aroused by some remark or phenomenon. Or he reads about some topic for 15 minutes, or watches a 30-minute television program. His learning episodes are rarely longer than one hour, except when taking part in some sort of visit or expedition, or perhaps when practicing a sport.

Third, the total number of hours spent at these learning episodes often does not total seven hours over a half-year period. As one interviewer reported, “Many learning efforts are too short in time to fit our definition. Children tend to flit from one interest to another without devoting a great deal of time to any one area.”

Fourth, many other episodes result in a great deal of actual knowledge and skill, but the intent to learn is not especially strong. The 10-year-old tends to choose an activity, hobby, or sport because it will be interesting or fun, not consciously because it will produce certain knowledge and skill or help him become a better person.

Perhaps he simply does not think often about the future, and has no thought of how he will change during the next few months or years.

Several of these characteristics of the 10-year-olds are also typical of the out-of-school learning of younger children. By the time a person reaches the age of 16, though, some clear changes have occurred. During his hours away from school and homework, the 16-year-old spends far more time at sustained learning efforts than he did at an earlier age. These efforts are marked more clearly and strongly by the intent to learn. Also, he learns more often in order to handle effectively his new responsibilities and the major problems and decisions that are not faced by a 10-year-old. In many ways the 16-year-old is closer to the adult than he is to the 10-year-old. At the same time, though, much of his learning continues to be devoted to athletic skills, musical instruments, and topics of general interest about which he is curious.

Some clues about new roles for school teachers emerged from interviewing the 10-year-olds. Their out-of-school ("noncredit") learning was often influenced by their teachers. Many learning projects, especially for the girls, grew out of an activity or topic at school, or a question or book suggested by the teacher. The interviewer, Jim Fair, has also suggested that schools can help the child develop the wide range of learning skills and the familiarity with various resources that are necessary for effective self-planned learning. It also became evident in the interviews that the human and physical environment, at home and school, has an enormous impact on the 10-year-old's learning.

## **Needed Research**

Our 1970 study has provided an estimate of the frequency and importance of learning projects in various populations. Its strengths included a carefully developed interview schedule with sufficient probing, and interviewers who became thoroughly familiar with the background and definitions of the study. The samples were very small, however, and not all of them were chosen on a completely random basis from a large population. Despite the inadequacies of the samples, the data are encouraging enough to indicate that further research could be very valuable.

There is an obvious need for a study of a very large adult population. The ideal would be a large-scale survey using sophisticated sampling techniques to draw a representative sample of the total adult population in several countries. As part of that study, or before it, several smaller populations might be interviewed. In our 1970 study, we did not reach the highest-level corporation president, the top politicians in a country, the unemployed, the functionally illiterate, the criminal, the very old and the very young, and recent immigrants. In addition, we overlooked student radicals, graduates from schools that emphasize various innovations, and

10-year-olds who have never attended school. And our knowledge about the differences between the self-planned, out-of-school learning efforts of children and adults is very primitive.

A researcher with a fresh approach could probably improve the interview schedule used in our study. The interviewers felt several learners were not recalling or revealing all their learning projects, especially their self-planned efforts. We could not think of any other means, however, of stimulating recall or of reducing the person's hesitation to mention a personal, mundane, or offbeat project. Recall might be improved by interviewing the person every three or four months, instead of hoping he can remember an entire 12-month period.

### Earlier Studies

Several studies during the 1960s, and even earlier, have noted that many adults make highly deliberate efforts to learn. Some of the studies are primarily concerned with adult education programs, others with adult reading.

### Adult education programs

Some of the studies of adult education programs have measured the number of adults in various classes and in other programs sponsored by certain institutions, but have omitted the 70% or so of all highly deliberate adult learning that is self-planned. Although most of these surveys find thousands of adults in educational programs, these numbers constitute a disappointingly small proportion of the total adult population.

Dramatic increases have already occurred, and will continue to occur, in enrollments in organized courses for adults. Moses (1969), who calls this sort of education "the educational periphery," estimates its total enrollment in the United States as 22 million in 1950, 28 million in 1960, and 82 million in 1975. Cohen (1967) provides some interesting estimates of the total "learning force," which is defined as the total number of learners in schools and colleges as well as in the educational periphery. He compared the size of the learning force and of the labor force in the United States, and estimated this ratio at about 83 to 100 in 1940 and 1950. By 1965, the ratio had shifted dramatically to 127 to 100; the learning force was, by 1965, greater than the total labor force. Cohen's projected ratio for 1974 is 159 to 100.

At least three studies have included learning projects that were self-planned as well as those sponsored by adult education institutions. Depending on the procedures and definitions used during the interviews conducted in the different studies, the

percentage of the total adult population that had recently conducted a learning project was 25 (Johnstone & Rivera, 1965), 71 (Blackburn, 1968), and 82 (Blackburn, 1967).

## **Reading**

Several American surveys of adult reading point up the widespread use of this method for learning. Parker and Paisley (1966), for example, found that most adults read at least one newspaper each day. They found that 40% spend at least one hour a day doing so, which works out to more than 300 hours a year. Three-quarters of the interviewees mentioned information for practical use as their first reason for reading the newspaper, with only 12% mentioning relaxation or habit.

Magazines turned out to be an important source of knowledge for adults (Smith, 1963). All but 18% of the adults in the Parker and Paisley study read a news or general magazine, a woman's or home magazine, or some other magazine, such as a hobby or travel magazine.

The average executive spends four hours a day reading business reports and correspondence, business magazines, and other business material. He devotes another 10 hours a week to newspapers, newsmagazines, general magazines, and non business books such as histories and biographies. "All in all," reported Strong (1957), "he spends at least a quarter of his waking hours with eyes glued to the printed – or typewritten – page [p. 60]."

Books, too, are an important source of learning for at least some adults (Campbell & Metzner, 1950; Parker & Paisley, 1966; Porcella, 1964). Some nonfiction books become best sellers even though written in a technical style, and even though originally written for an audience of specialists. Such books include the following: *Secular City*, *Games People Play*, *Human Sexual Inadequacy*, and *Honest to God*. Their popularity suggests that many people are interested in advanced thinking about such fields as social problems, psychology, sex, and theology.

Let us look for a moment at the person who writes the book, not the one who reads it. Some nonfiction writers conduct enormous learning projects in order to write one book. Vance Packard, for example, took four years to write *The Sexual Wilderness*; he talked or corresponded with 400 authorities, traveled to 10 countries and 130 campuses, read thousands of reports, and read many questionnaire responses. Another example is provided by John Pearson. In order to write a book about Ian Fleming, he traveled more than 100,000 miles, interviewed about 150 people, and made an extensive study of Fleming's private papers.

## **An economist's view**

A noted economist, Fritz Machlup, had already written a dozen books when he decided to turn his attention to estimating the production and distribution of

knowledge in the United States. The resulting book (Machlup, 1962) is so sweeping and comprehensive in scope that it is almost breathtaking, especially if read through rapidly at one sitting.

After outlining his meaning of "the production of knowledge," Machlup carefully estimated the number of dollars and workers in more than 30 knowledge industries in the United States. He estimated the amounts of money spent on (1) the education of youth and adults in schools and colleges, on the job and in the armed services, in the home, and in the church; (2) basic and applied research and development; (3) newspapers, periodicals, and books; (4) conventions; (5) other media of communication (radio, television, telephone, and so on); (6) a variety of information machines and instruments; and (7) information services provided by lawyers, doctors, engineers, insurance agents, and governments.

The grand total expenditure for the production and distribution of knowledge was a surprisingly high proportion of the Gross National Product, as adjusted by Machlup: about 29%. Moreover, Machlup estimated that expenditures on knowledge production have been increasing rapidly for some time: by 8.8% a year over a short period and by 10.6% a year over an 11-year period. If knowledge production really constitutes 28.7% of the GNP, Machlup argues, then the production of *other* goods and services included in the GNP increased by only 3.7% (or 4.1% over the longer period).

The number of individuals in occupations that produce and transmit knowledge has also been increasing dramatically. In 1959, Machlup calculates, 21,754,000 persons (32% of the civilian labor force) worked in such occupations. That is, an astounding one-third of all persons who worked spent their time producing, transforming, or transmitting knowledge and information rather than producing something else or performing some other service. No doubt the figures today are even larger: Machlup's figures show a consistent increase throughout the past seven decades.

## High Learners

Some men and women learn to an extraordinary degree. They are the individuals who spend 2,000 hours a year at learning and who complete 15 or 20 different projects in one year. In their lives, learning is a central activity; such individuals are marked by extraordinary growth.

Several social scientists have detected and studied adult populations marked by especially high achievement, learning, or affective growth. Examples include gifted adults who are also high achievers (Terman & Oden, 1947), the self-actualizing adults studied by Maslow (1954), the outstanding creative scientists interviewed by Roe (1953), men and women conspicuously engaged in continuing learning (Houle,

1961), and the fully functioning person (Rogers, 1961). Describing "the beautiful and noble person," Landsman (1969) said that the same kind of person is also sometimes called productive, efficient, self-fulfilled, self-realized, or a super-person. Maslow (1969 b) has added these phrases: the Good Person, the self-evolving person, the responsible-for-himself-and-his-own-evolution person, the fully awakened man, and the fully human person.

These populations are marked by learning, by efforts to achieve their inherent potential, and by curiosity and *joie de vivre*. Yet, at the same time, these people like their present job, understand and accept their own characteristics, and are not strongly dissatisfied with their present self. They have the confidence and courage to reveal their real self. They have clearly directed interests: they choose their own career and activities and are not pushed by external forces. They have a strong but realistic commitment to some mission in life. They strive to achieve certain major goals, are spurred on rather than blocked by obstacles, and are productive and successful. Their relationship with at least a few people tends to be compassionate, loving, frank, and effective.

What proportion of the total adult population are we talking about? Perhaps it is the top 10% or even 20%. Or perhaps it is only 1% or 5%. Even these estimates may be too high. Let us suppose, as a very low estimate, that only one adult in a thousand is included. That would still be a fairly large number of persons in any one country: about 110,000 in the United States, 35,000 in the United Kingdom, or 11,000 in Canada, for example.

Behavioral scientists will make many important contributions to knowledge as they continue to study these populations of high learners. The members of this group are especially competent, efficient, and successful at learning. They probably set clear action goals, choose appropriate knowledge and skill, plan their learning episodes fairly easily, and learn without undue effort or frustration. These characteristics make them excellent subjects for studies of effective learning. They are the "growing tip" described by Maslow (1969 a). How can more of these persons be produced? How can other adults gain some of their effectiveness and happiness?

## **Comparing Other Sorts of Learning**

In trying to determine how common and important adult learning projects are, we have discussed such factors as number of hours, number of projects per person, amount of money, and proportion of the labor force. One may also approach the question by asking how much of the change in a person occurs through his highly deliberate, sustained efforts to learn, and how much through all the other ways we have just listed.

A small but intensive study in 1966 provided a tentative answer. After listing the

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most important things they had learned since finishing secondary school, 20 educators listed the most important activities that had produced those changes. More than *half* of all their choices were learning projects (mostly self-planned learning and courses). Clearly, though, much more research is needed before we feel very confident about this answer.

Learning projects may be especially important for certain persons. If a man or woman spends 1,000 hours a year trying to grow in certain ways, these learning projects will probably change him greatly. The person who conducts only one brief learning project a year, however, is probably affected much more by other activities and factors.

Certain sorts of changes may typically occur through learning projects, and other sorts of changes through other activities. In what ways does a person learn about sex and marriage, raising children, human nature, political issues, his job? What develops his appreciation, sensitivity, mental health, concern for others, self-understanding, self-acceptance? A research or theory-building project might aim to produce a two-dimensional chart: various clusters of knowledge, skill, attitudes, and so on would be on one dimension; various sorts of episodes and factors that produce changes would form the other dimension. It would probably become evident that certain sorts of major changes tend to result from certain sorts of episodes.

The following are some of the forces and activities, aside from learning projects, that produce changes in people.

1. Conversations, newspapers, books, periodicals, television, radio, movies, drama, and travel greatly influence the person's information and attitudes. Although these resources and activities are sometimes part of a learning project, they are often motivated by immediate pleasure, habit, sociability, or a desire for relaxation and entertainment.
2. Sometimes a person learns by observing the world around him, even when the *intent* to learn is not as strong as his other motivation – his curiosity or his desire for immediate enjoyment, for example. The world he observes might include a construction project, art display, sports event, zoo, factory, or trade show. More often, though, he learns through alert observation of human behavior and other common events in his everyday environment, and through thoughtful reflection on what he sees and hears.
3. Often the acquired knowledge and skill is a by-product of some task or responsibility. A person's primary or sole motivation might be to successfully finish a home repair project, chair a meeting, or supervise children. In addition, though, these activities may add to his information or skill, or change his attitudes or awareness.
4. Sometimes a person chooses a job, task, or responsibility because he thinks it will produce some desirable changes in him, or will be "a valuable experience." Other choices, too, are sometimes made primarily because of the beneficial

changes they will produce: choosing a marriage partner, a group to join, or a neighborhood.

5. Sometimes episodes that no one intended to occur can greatly influence future behavior. After a traffic accident, for example, the driver may alter some aspect of his future driving in order to avoid having another similar accident. After a child has a fall or burn, his parents may change their behavior in order to prevent a recurrence. Embarrassing moments and frightening experiences also affect the person a great deal.
6. A pervasive, sometimes subtle, influence on the person is summed up in the word *environment*. This includes the people with whom he interacts (usually people of the same social class, neighborhood, age, sex, or occupation), the appearance and resources of his city or town, the political climate of his country, the expectations and norms of his society and employer.
7. The person's brain may be influenced directly by a chemical or by electricity. Psychedelic drugs can produce expanded consciousness, and certain sensations and images. Some experimental chemical compounds may strengthen memory. Electricity transmitted through electrodes implanted in the brain has made shy women flirtatious, and other people happy or talkative. Brain surgery, or the removal of a gland, can also change a person's typical responses or mood.
8. At least some persons receive information through certain means beyond the normal, well-understood channels. Evidence suggests that some especially sensitive persons can see an object in another room, foresee a distant or future event, or communicate with a dead person. A few individuals can perceive the electrochemical force field around another person's body; in this way they can diagnose his medical problem, know his current mood, or evaluate him for a responsible position.
9. Sometimes a major insight comes from the unconscious mind. After intensive disciplined work at some problem, for example, the solution may suddenly jump into the person's mind while he is sleeping or golfing. Dreams also help us work out emotional conflicts and develop new insights.

## **All Ways of Learning and Changing are Important**

All of these ways of learning, changing, and growing add up to a rapidly changing individual. The changes that occur over a 10-year span in most men and women are enormous. It is clear that the adult can change very quickly in basic characteristics and insights, knowledge, skills, beliefs, and attitudes.

Changes in adults are a necessary part of social change: the major problems of society cannot be solved without certain changes in people. Without an emphasis on helping people to learn or change, how can we move toward peace, economic

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development, productivity, zero population growth, more effective government, better cities, widespread physical and mental health, satisfactory race relations – and away from poverty, crime, urban problems, and pollution?

The importance to society of adult learning efforts can perhaps best be grasped by imagining what would happen to our society if all learning projects ceased. What would happen to industrial firms, business corporations, and government departments if the executives made all decisions as soon as they were told of a problem or issue, without bothering to learn anything more about it? Suppose new employees, or those recently promoted, did not bother trying to learn how to handle their new responsibilities. What would happen eventually to our health if all medical personnel refused to make any effort to keep up with new drugs, procedures, and knowledge in medicine? Actually, there would not be many new drugs and procedures in medicine; after all, no researchers would be trying to learn. What would eventually happen in our society if no parents read about child care, if no one attended sensitivity training groups, if no one went to counselors and lawyers for help? What if no leader or citizen tried hard to learn about history, philosophy, religion, evolution, alternative futures, social problems, recreational activities, or the arts?

It is also hard to imagine that one could serve usefully in certain occupations without frequent efforts to learn. The medical doctor and college teacher, for example, must continue learning in order to keep abreast of changes in their fields of expertise. Without spending at least a day or two at learning, a journalist could not write a comprehensive article, an actor could not undertake a new part, a lawyer could not handle a complex case, a political leader could not make a difficult decision, a researcher could not plan a new research project.

It is clear, then, that adult learning and change are important to society and to the individual himself. As a result, many fields of practice and research are concerned with understanding or producing changes in men and women. These fields include personality theory, behavior modification, developmental psychology, adult education, humanistic psychology, organization development, communications and mass media, social psychology and attitude change, learning theory, psychotherapy and psychoanalysis, rehabilitation, manager development, counseling, manpower training, and agricultural extension. Realizing the importance of practice and theory in these areas, foundations and governments as well as universities have supported research and development efforts aimed at understanding how to encourage and facilitate certain changes in adults. Such research and development efforts should continue to encompass the entire range of activities that produce changes in the person's knowledge, skills, attitudes, behavior, and awareness.

At the same time, though, it is becoming evident that learning projects have been a relatively neglected area for comprehensive research and development efforts. Learning projects are far more common and important than anyone realized a few years ago. Studies in this area could make a very high contribution if additional

*How common and important are learning projects?*

researchers and support were found. Focusing on the person's *efforts* to learn may be a highly fruitful line of research or innovation: only when he has the *intent* to learn will the adult seek new sorts of help and resources that might be developed for him.