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THE IMPACT OF EXPERIENTIAL EDUCATION ON ADOLESCENT DEVELOPMENT

Daniel Conrad
Diane Hedin

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ABSTRACT. This article summarizes the findings of a national study of 27 varied programs and concludes that experience-based educational programs can have a significant positive impact on the social, psychological, and intellectual development of adolescents.

Background

During the 1970s experiential education became an increasingly significant feature of the rhetoric and practice of American education. Blue ribbon panels called for a better balance between "passive" and "active" learning. At the same time, experience-based programs by the hundreds sprang up in secondary schools and youth-serving agencies. Yet little hard evidence on the impact of these innovations emerged from either the panel reports or the narrative descriptions of program models. There was not, in fact, even such precision regarding what the impact should be. Little effort was made to test the assumptions underlying the practices systematically, and even less to investigate empirically which specific forms of experiential programs may be the most effective in realizing the asserted benefits. Toward the end of the decade, it became clear that a more precise and comprehensive investigation was needed.

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The Evaluation of Experiential Learning Project was undertaken to begin to fill this gap—to measure quantitatively the impact of experiential education programs on the social, psychological, and intellectual development of secondary students and to identify empirically the program variables which are most effective in facilitating such development.

The project was initiated by the Commission on Educational Issues and cosponsored by the National Association of Independent Schools, the National Association of Secondary School Principals, and the National Catholic Education Association. During the 1978-1979 school year, it examined nearly 30 experiential learning programs in a wide range of schools and settings around the country. Funding for the project was provided by the Spencer and Rockefeller Family Foundations and by the General Mills Foundation. The Center for Youth Development and Research of the University of Minnesota was the base for the research effort. The article summarizes the findings of this project.

Defining Experiential Education

Most experiential learning programs are strictly home-grown. Unlike the massive curriculum writing efforts of the sixties, which were generously financed and based in universities or other educational centers, these are mostly local inventions dreamed up by adults and kids in local communities with little or no outside support. Often these practitioners are unaware, at least at first, that they are part of a significant national movement.

Among the consequences of this fact is that the term "experiential education" has evaded precise definition and is used to describe activities as disparate as flipping burgers at McDonald or rappelling down a Colorado mountainside. While this imprecision makes little difference to program leaders, and none whatsoever to kids, it is a problem to researchers attempting to achieve some focus and precision in their investigation.

For purposes of this study, experiential education programs were defined as "educational programs offered as an integral part of the general school curriculum, but taking place outside of the conventional classroom, where students are in new roles featuring significant tasks with real consequences, and where the emphasis is on learning by doing with associated reflection."

The most critical elements of this definition are "integral part of the *general* school curriculum" and "new roles featuring significant

tasks." With such a focus we eliminated worthy efforts such as work-study and vocational programs as being outside the general curriculum, and such programs as travel and off-campus observation and research as not involving youth in significant tasks in nonstudent roles. Within such restrictions, the study encompasses virtually all forms of experiential education with the one further exception of Experience-Based Career Education Programs. These were being investigated by others, including Tom Owens of the Northwest Regional Lab; this work is reported elsewhere in this Journal.

Selection of Programs

The programs included in the study are of four major types: volunteer community service; career internships; community study/political action; and adventure education (patterned after Outward Bound). Again the indigenous quality of experiential programs required that these labels be rather arbitrarily applied in some cases where a variety of experiences were featured within the same program.

Within each program type, individual programs differ in terms of: *length*—from 4 weeks to 9 months; *intensity*—from 1 hour per day to full-time; *nature of the reflective component*—from none to a daily class related to the field experience; *characteristics of students*—from low-income, alienated inner-city youth to upper-class prep-school students, ranging in age from 12 to 19; its *voluntary or compulsory nature*—with all but three of the programs being elective (recognizing the ambiguity of the term "elective" in a system of required school attendance).

The school programs included in the study were not randomly selected, but were chosen because of a reputation for excellence—and as representative of the major variables we wished to examine. It seemed prudent to study only the most well-conceptualized and established programs to discover the effects, if any, of the practice of experiential education.

The Research Process

Solution of Issues

In contrast to much educational research, this evaluation effort was committed to an approach which was practical, understandable, and applicable to everyday life in schools. Thus, a "Panel of Practitioners" (the educators who ran the programs being studied), along with

educational evaluators, were responsible for defining the issues to be studied, for helping to select and develop assessment tools, for implementing the research design, and for helping to interpret the data collected.

The first step of the research process was to survey the directors of 30 experiential programs. They were asked what they believed to be the actual effects of their programs on students. They were not asked "What should happen?" but what they had experienced, seen, and heard.

A striking feature of this "testimony of concerned observers" was the near unanimity of their reports. They described a core set of outcomes which each of them had observed: greater sense of responsibility, more willingness to help others, increase in self-esteem, more tolerance for persons different from themselves, clearer career focus, and so on. Very similar lists came from programs in small towns and large cities; from programs for ghetto youth and the privileged; and from programs featuring different activities such as internships, community service, and political action. The clear implication was that there were some common threads in experiential programs which may be generic to the practice. It suggested that these common threads could provide the focus for the study.

Among the observed effects reported by the directors were 24 which appeared with high regularity. This list was redrawn as a questionnaire and in May 1978 was administered to all students in each of the programs ($N = 4,000$). The students were asked which, if any, of the outcomes listed represented what they had personally learned from their programs. A summary of the results of this survey is presented in Table 1. On over half (14) of the items, there was an average agreement level among the students of over 80% across all programs. The most frequently cited outcomes fit into three major categories: *social*, *psychological*, and *intellectual* growth. These became, then, the major areas of investigation for the project itself.

The Research Questions

In regard to *social development*, the research questions were as follows: To what extent do experiential programs have a positive impact on the students' (a) level of personal and social responsibility; (b) attitudes toward others, both adults and the persons with whom they were

Table 1

What Students Learn in Experiential Learning

Composite Profile of Students Responses from 30 Experiential Programs (N=4,000)
The first 10 and last 4 of 24 items

ITEM (in rank order)	PERCENTAGE OF RESPONSES		
	Agree*	Disagree*	Don't Know
1. Concern for fellow human beings	93	4	3
2. Ability to get things done and to work smoothly with others	93	4	3
3. Realistic attitudes toward other people such as the elderly, handicapped, or government officials	88	4	8
4. Self-motivation to learn, participate, achieve	88	7	5
5. Self-concept (sense of confidence, sense of competence, self-awareness)	88	7	5
6. Responsibility to the group or class	86	7	11
7. Risk taking--openness to new experiences	86	7	8
8. Sense of usefulness in relation to the community	86	8	6
9. Problem solving	86	9	5
10. Risk taking--being assertive and independent	86	9	5
21. Use of leisure time	60	26	14
22. Narrowing career choices	54	34	12
23. To become an effective parent	52	29	19
24. To become an effective consumer	46	32	22

* Strongly agree and agree are combined, and disagree and strongly disagree are combined.

in primary contact in their field placement, such as the elderly, children, handicapped persons, government officials, police, etc.; (c) attitudes toward active participation in the community; and (d) involvement in career planning and exploration. In regard to *psychological development*, both general self-esteem and self-esteem in social situations were assessed, as was the development of moral reasoning as outlined by Kohlberg. Finally, two specific aspects of *intellectual and academic growth* were studied: the students' knowledge of community

issues and resources and their ability to handle problems in which there is interpersonal and/or ethical conflict.

In addition to looking at the general effects of experiential education on student participants, we also were interested in determining the ways in which different program forms (community service, internships, political action, community study, and adventure education) and formats (length, intensity, characteristics of the individual field experience) affect student learning. For example, do short-term experiences of 3 to 4 weeks show any effect on attitudinal change? Does the intensity of the program—2 hours versus 10 hours per week—affect student outcomes? Are some types of programs, e.g., community service, more likely to promote a sense of social responsibility or interest in community participation? To what extent do the characteristics of each student's individual experience affect the results?

Sources of Data

The overall effects (the dependent variables) of social, psychological, and intellectual development were operationally defined as scores on the test instruments and questionnaires employed in the study. The specific instruments used to measure psychological development were the Defining Issues Test (moral reasoning), the Janis-Field Feelings of Inadequacy Scale (self-esteem in social situations), and the Rosenberg Self-Esteem Scale. Social development was measured by the Social and Personal Responsibility Scale (social responsibility), three semantic differentials (attitudes toward others), and the Owens' Career Exploration Scale (career maturity). Intellectual development was investigated through the Problem Solving Inventory and through self-reports of participants. The test battery included both standardized tests and adaptations of standardized tests. Two of the tests, the Social and Personal Responsibility Scale and the Problem-Solving Inventory were original instruments designed specifically for this study.

Finally, students were asked to rate the overall program and explain their rating, and they were then presented with a list of features describing community experiences and asked how often each was a feature of their own situation.

Because the outcomes being measured were elusive, triangulation of the data appeared to be the most reasonable approach. Each outcome was looked at from several different angles: paper and pencil

tests; systematic observations by parents, teachers, and community supervisors; student journals and writing samples; case studies of individual students and programs; and a host of unobtrusive measures.

Research Design

All students were tested pre and post on or near the first and last days of the program. Six of the experimental groups (at least one in each program type-cluster) also had comparisons. These were not random controls, but the students in each were comparable to those in their experimental pair in terms of age, grade in school, geography, grade point average, socioeconomic status, and, largely, in pretest scores. The comparison groups were from non-experiential classroom programs and were tested pre and post at the same time as their experiential pairs.

Findings: Impact on Students

The results from the formal measures employed in this study demonstrate that experiential programs do have a positive impact on the psychological, social, and intellectual development of the student participants. This conclusion, while true in general, masks significant patterns of effect and effectiveness which are summarized below.

Psychological Development

An important finding of research in schools is that studying the formal, academic curriculum does not automatically lead to personal and psychological growth. In fact, there is a body of research documenting the largely negative impact of schooling on such variables as self-esteem, interest in learning, and personal autonomy (Sprinthall & Sprinthall, 1977). Proponents of experiential education have argued that psychological growth is more likely to be achieved through their approach to learning. They believe that placing students in well-planned experiential confrontations with practical problems is an effective mode of promoting personal growth and that psychological growth requires challenge, conflict, support, and significant experience.

Did the findings of this study corroborate this theoretical argument for experiential programs? The answer, as revealed in the following discussion, is clearly yes.

Self-esteem. Students in experiential programs did show increases in self-esteem and to a degree slightly but consistently greater than those registered by comparable students in classroom-based programs.

On the Janis-Field Scale, which focuses on the confidence one feels in social situations (e.g., meeting new people, speaking in front of a class), 20 of the 27 experimental groups increased, 10 at a level of statistical significance ($< .05$). On the Rosenberg Scale, which deals with more general feelings of self-worth (e.g., "I feel I have a number of good qualities"), 23 of the 27 experimental groups increased, 9 at a level of statistical significance. Students in the comparison groups also registered some gain in self-esteem, consistently on the Janis Field Scale (5 of the 6 groups increased, 3 significantly) and sporadically on the Rosenberg Scale (3 of the 6 groups increased, 2 significantly). In direct comparison, the experimental groups had greater increases on both scales, but this advantage was statistically significant only on the Rosenberg Scale.

Among program types, the most consistent pre-post gains were registered by students in outdoor programs—both in comparison with other experiential programs and with their own gains on the other dimensions of growth examined in the study. Since no other program category showed such a pattern, it suggests that intensive outdoor experience may have a particularly strong effect on self-esteem. This may result from the intensity and uniqueness of such experiences and/or from the fact that evidence of achievement is clearly seen by, matters to, and is immediately reinforced by both teachers and peers.

Moral reasoning. Students in two experience-based programs and one comparison group (from the same school) were administered the Defining Issues Test (DIT) pre and post. This is a paper-and-pencil test designed to measure levels of moral reasoning as detailed by Lawrence Kohlberg. All three groups received identical instructions in Kohlberg's theories, the only difference being that the two experiential groups were simultaneously involved in service activities in the community.

The test results showed that both experimental groups attained significant gains in their moral reasoning scores, while the comparison group did not gain. The increases were significant in themselves and in contrast with the comparison group. This finding substantiated that of several other studies which have likewise shown the combination of significant role-taking experiences and active reflection to be an effec-

tive means of promoting growth in this aspect of development (e.g., Hedin, 1979; Cognition, 1978).

Social Development

Social and personal responsibility. In the past decade, the public has shown great concern about teenagers' level of personal and social responsibility. Charges of increased privatism, hedonism, and aimlessness among adolescents have become commonplace, along with findings that they feel a strong sense of powerlessness in relation to the larger society and no sense of having a significant role in it (Hedin, 1980). Experiential educators have argued that it is precisely this lack of a significant role in the community and society that has bred apathy, cynicism, and powerlessness. They suggest that placing students in responsible roles in which their actions affect others will help them develop more responsible attitudes and behaviors. To test this hypothesis, the Social and Personal Responsibility Scale (SPRS) was created. It assesses the extent to which a student (a) feels a sense of personal duty, (b) feels a concern for the welfare of others, (c) feels competent to act responsibly, (d) has a sense of efficacy, and (e) acts responsibly.

The overall results from the total SPRS scale indicated general positive movement by the experimental groups and no change by the comparisons. The experimental groups combined had a mean increase of almost two full points ($P < .0001$), while the combined comparisons declined. More precisely, 23 of 27 experimental groups increased, 13 by at least 1.50 mean points and at a level of statistical significance. In contrast, 5 of the 6 comparison groups declined, 2 at a level of statistical significance.

Among the subscales, the strongest gains were recorded on students' sense of competence and performance, followed by social efficacy and sense of duty. There was a lesser gain on sense of social welfare obligation, though even this clearly distinguished between experimentals and comparisons, since the latter declined sharply on this dimension.

Overall, the strongest changes were toward taking responsible *action* as opposed to having more responsible *attitudes*; and among attitudes, change was toward having more *personally* responsible attitudes, as opposed to *socially* responsible attitudes. This finding is consistent with most research on attitudinal and behavioral change which

suggests that changes in behavior often precede rather than follow changes in attitude. It also suggests that the traditional model of citizenship education, which preposes that instruction in proper attitudes about personal and social obligations will lead to responsible behavior, may need revision. While the evidence from this study can only be suggestive of that conclusion, it is further strengthened by the fact that most of the comparison students were in social studies classes which deliberately, and apparently ineffectively, aimed at improving attitudes toward taking personal and social responsibility.

Attitudes toward adults. A common critique of modern socialization practices is that young people are locked in an adolescent ghetto, separated from meaningful interaction with adults. The implicit assumption is that separation breeds suspicion, if not hostility, and that greater contact with adults would promote more positive attitudes. This latter hypothesis was confirmed by the results of this study. Students in the experiential programs entered into collegial relationships with adults that are atypical of most school and work settings. These students tended to show large, consistent changes on the semantic differential scale toward more positive attitudes toward adults.

There was a positive change in 22 of the 27 experimental groups, and the combined mean change for all of the experimentals was +1.45, which was statistically significant at $P < .0001$. This mean change of near 1.5 was made on a scale of only 7 possible points. Students in comparison groups, conversely, showed an overall decline of -.74 mean points spread over 5 of the 6 groups.

It is clear from the above that adolescents do not automatically think more highly of adults merely because they have moved a little closer to that status themselves. It depends on what they are doing during that time. Remaining in a classroom with an adult teacher appears not to be a situation which raises their esteem of adults. Associating with adults on a collegial basis outside the classroom does, however, seem to have such a positive effect.

Attitudes toward others. A further contention of the proponents of experiential education is that when students are involved with persons they do not ordinarily encounter, they will come to value them more highly. The data, from a 10-item evaluative semantic differential scale, clearly indicate that community participation has a positive effect on students' evaluations of the people with whom they have been interacting. In the direct contrast between experimental-comparison pairs,

each experimental group increased significantly, while each of the comparison groups showed a decline. The difference was significant for the individual and the combined comparisons (the latter at $<.001$).

Considering specific groups or categories, students initially valued hospitals and little kids most highly, followed by old people, business persons, police and, dead last, junior high kids. On the posttest the ratings of all these categories had increased significantly—except for hospitals, toward which there was a small increase and for business persons toward which there was a slight decrease in valuation.

The small increase in valuation of hospitals may reasonably be explained by the fact that the high pretest rating (the highest of any category) left little room for positive change. The decrease in relation to business persons is less easily explained. Perhaps it is the nature of interactions, not interaction per se, that creates more positive attitudes. In the case of internships, students tend more to be observers than participants, a situation that could account for the lack of change.

Attitudes toward being active in the community. A further hypothesis of experiential educators is that direct participation in the community will lead students to value such activity more highly and increase the likelihood of their seeing themselves as accepting community responsibilities in the future. The first part of the hypothesis was tested toward a semantic differential with word pairs such as smart-dumb and useless-useful. The second was tested by a single continuum from "something I will do" to "something I won't do." The results from both scales confirmed the hypothesis.

At the time of the pretest, students in experiential classes valued the general notion of "being active in the community" less highly than did students in traditional classes. The highest rating was given by students in service programs, followed by the comparisons and then students in community study, career internships, and outdoor programs. By the time of the posttest, the situation was reversed. All of the comparison groups decreased, while 20 of the 27 experimental groups increased. The strongest gains were by students in community study and outdoor programs, and the least gain was by students in career internships. It must further be noted that for 4 of the 6 comparison groups the value and importance of community participation had been a deliberate (and seemingly unattained) emphasis of the in-school course.

A further question was whether students' evaluation of being active in the community carries over to (at least reported) inclination to actually do it. The data here revealed that secondary students rather strongly assert that they will be active in their communities. However, from a position of virtual equality on the pretest, the experimental students increased, and the comparison students declined. A direct comparison between experimental and control groups showed the difference in change scores to be statistically significant.

Career exploration. One common critique of adolescent socialization is the inability of many youth to make a smooth transition from school to work. Many teenagers appear to have very little information about the myriad of careers available, and they fall into the trap of thinking that an interest in some activity implies a lifelong pursuit of one single occupation. An often expressed goal of experiential learning programs is to increase a young person's knowledge about work and career options. To learn whether this goal was achieved, students were given the Career Exploration Scale.¹

The data from this scale show that 24 of the 27 experimental groups registered a positive gain, 13 at a level of statistical significance. Increases were also registered by the 6 comparison groups, with 2 at a statistically significant level. The increases for both experimental and comparison groups were significant, though the absolute level of increase was substantially greater for the experimental groups.

The Career Exploration Scale contains two subscales. The first measures career action, or the degree to which students have been actively engaged in exploring careers. The second asks about information they have gained about a career field. Analysis of these subscales revealed that the greater overall increase for experiential students was largely accounted for by greater gains on the action subscale. All 27 experimental groups increased on the action subscale, 16 significantly so. In contrast, no comparison group showed significant gains on this subscale, and 2 actually declined. The gains on the information subscale were about equal for the experimental and comparison groups. Apparently, facts can be effectively conveyed either in or out of the classroom, but the experiential approach adds the dimensions of active involvement in potential career choices.

Some interesting differences emerged from the examination of individual program scores. The highest pretest mean was attained by affluent 12th graders in an independent school, and the lowest means

¹Adapted from a scale developed by Tom Owens of the Northwest Regional Lab.

by either junior high or low-income students. It does appear that active planning and exploring of careers is related to both age and income—with older and more affluent students having the advantage.

Among types of programs, those offering career internships had the largest increases—most particularly a medical careers program for low-income minority youth and a program featuring semester-long, full-time internship experiences. However, community study, service, and outdoor programs also showed strong increases, even though they had almost no organized or explicit focus on careers. It may be that when young people want to learn about careers, they actively seek such information on their own in their field experiences.

Intellectual Development

Theorists of learning and intellectual development from Aristotle through John Dewey to James Coleman have stressed the necessary relation of experience and education. Experience serves both as the source of knowledge and as a process of knowing. Education is of, by, and for experience. The study examined this relation by looking at both academic learning and intellectual development.

Amount learned. Because the programs varied widely regarding academic objectives, it was not practical to test the academic learning assumptions directly through any general test of facts or concepts. Instead, students were asked how much they felt they had learned in their experiential program as compared with what they learned in an average class in school. Seventy-three percent of the students reported learning more (41%) or much more (32%) in their experiential program, with 25 of the 27 programs having mean responses that rounded off to 4 ("learned more") or higher. The mean responses of the other 2 were somewhat over 3 ("learned about the same"). Only 9% of the students reported learning less.

Problem solving. The primary measure of intellectual development used in the study was the Problem Solving Inventory. This inventory presents students with three interpersonal problems and leads them through the steps in problem solving outlined by John Dewey. Student responses were scored, pre and post, according to the number of alternatives listed, the degree to which they took responsibility for solving the problem, the degree to which they justified a decision according to its consequences, and the level of empathy and complexity of thought shown in the overall analysis of the problem.

The heart of the problem-solving instrument is its Empathy/Com-

plexity Index. This index assesses the ability and/or inclination of the respondents to empathize with the key "other" in the story, the level of need upon which he or she focuses, and the complexity of analysis applied to the problem. The pretest means were quite similar for all groups, with 27 of the 33 experimental and control groups having means that rounded off to level 4 (conventional, stereotyped thought and concern). On the posttest there was general movement by experimental students toward level 5, a more complex pattern of thought with a focus on relational concerns.

The Complexity/Empathy Index did clearly discriminate between experimental and comparison groups and between types of experiential programs. In terms of mean changes, 21 of the 27 experimental groups increased, 8 increasing at least a one-third step on the 7-point scale. Five of the 6 comparison groups decreased, and 1 showed a non-significant increase.

Most interesting was the pattern between types of programs. To test a hypothesis, programs were divided according to the degree to which (1) students were directly confronted with interpersonal problems similar to those in the stimulus stories and/or (2) problem solving was a deliberate focus of accompanying seminar sessions. These turned out to be critical variables in promoting change in complexity/empathy. Programs which featured both conditions registered an average mean increase of .59 points. Programs in which all students had one condition and some (not all) had the other showed an average increase of .22 points. Programs in which both conditions were only partially present showed an average mean gain of .17. Programs in which students had neither element showed an average decrease of $-.15$.

The data clearly suggest that experiential education programs can and do have a positive effect on student learning and intellectual development. This is most strongly the case when the program features a combination of direct experience and formal reflection on that experience.

Successful Program Practices

The second major focus of the project was to identify the program practices which were most effective in facilitating development in students. The factors examined for effect were general program features, student demographic characteristics, and characteristics of each individual's experience.

The safest conclusion that can be drawn from the data is that no

single practice or set of practices guarantees effectiveness for all students. Within every program and every type of program there were students who gained a great deal and others who did not. There were some clear patterns, however, patterns which suggest interesting hypotheses concerning the effective operations of experiential programs. In the following section, the features are discussed in order, from least to greatest significance.

Students Characteristics

The student characteristics analyzed were age, grade point average, and socioeconomic status. These were the least influential, accounting for only about 3% of the variance between pre and post scores. Among the characteristics, only age showed any influence at all, with older students showing somewhat greater growth than younger students, especially on issues of social development. Neither student GPA nor socioeconomic status were at all significant in predicting change.

The general finding of no strong relation between student demographic characteristics and program effectiveness does support one common contention of experiential education: that such experiences can benefit a wide variety, if not all kinds, of students.

Program Features

Among program features, the presence of a formal (and at least weekly) seminar proved to be the single strongest factor in explaining positive student change. This was particularly true on measures of social and intellectual development. Interestingly, there was no clear relationship between a seminar and increase in measures of personal growth, such as self-esteem. Perhaps students can make person meaning of their experiences on their own, but if this meaning is to affect their broader social attitudes and intellectual skills, systematic and directed reflection must be added.

Other factors which consistently related to positive student change were length and, to a lesser degree, intensity. Experiences lasting a full semester (18 weeks) were relatively stronger than shorter experiences, as were those in which students were in field placements 2 or more hours, 4-5 days per week. Of these two factors, that of length was stronger than intensity, though even in combination they were not as powerful predictors of change as was the presence of a seminar.

It did not prove to be important whether a student was involved in service, outdoor adventure, community study, or a career internship. While service programs appeared to do somewhat better than others on intellectual and social development, the advantage virtually disappeared in a regression analysis in which other program and student characteristics were controlled for. It must be emphasized, however, that *all* of these program factors collectively did not predict more than about 5% of the variance (by regression analysis) in pre-post change scores.

Characteristics of Experience

Compared with program features and student characteristics, the specific characteristics of an individual's experience proved to be the most powerful predictors of pre-post gains. While the former two categories combined explained no more than 8% of the variance in change scores, the latter consistently accounted for from 15 to 20% of variance. The finding lends credence to the notion that individuals experience educational programs idiosyncratically and that this is especially likely to be true in experience-based programs. The specific pattern of impact is outlined below.

The first issue examined was the relation between characteristics of experience and general rating of the program. The characteristics contributing most strongly toward students' rating their program as "excellent" or "good" were that the experiences were rated as being "interesting" and the students felt that they were "appreciated for their work."

While feeling appreciated and doing interesting things contributed to favorable program ratings, these characteristics had little or nothing to do with whether students grew from their participation in a program. The factors which contributed most strongly to pre-post gains were, rather, a mixture of features describing a combination of autonomy (e.g., "did things myself") and a collegial relationship with adults (e.g., "discussed experiences with teachers"). The 13 characteristics which made any appreciable impact on student growth are listed, by rank, in Table 2.

It should be noted that the characteristic that the experiences were "interesting" did not make this list. Even more significantly, characteristics which describe a more typical student-adult relationship (e.g., "given enough training to do my tasks" and "I was given clear direc-

Table 2

Relative Effect of Characteristics of Experiences on Mean Gain Scores for All Tests Combined

Rank	Characteristics of Experience
1	Discussed experiences with teachers
2	Did things myself instead of observing
3	Adults did not criticize me or my work
4	Had adult responsibilities
5	Developed personal relations with someone on site
6	Had freedom to explore own interests
7	Discussed experiences with family and friends
8	Felt I made a contribution
9	Had a variety of tasks
10	Was free to develop/use own ideas
11	Got help when I needed it
12	Made important decisions
13	Had challenging tasks

tions") did not contribute to pre-post gains and, in fact, correlated negatively with them on several scales.

The characteristics of experience were further examined to see if certain ones contributed more to one kind of growth than another. In Table 3 the strongest contributors to social growth are listed next to the strongest influences on indices of personal development.

As is evident from Table 3, it turned out that the characteristics suggesting autonomy (e.g., "free to develop and use own ideas") were more influential in promoting personal growth (e.g., self-esteem) than social growth (e.g., responsibility). Conversely, the characteristics suggesting a collegial relationship with, and even guidance by, adults, showed the opposite pattern of influence. In short, personal growth was stimulated most by dealing autonomously with challenging tasks, while social development accrued more from interaction with adults—as long as it was in a nonstudent role.

It goes only slightly beyond the data given to argue that students will rate a program highly if the experiences are interesting, if they are shown appreciation for their effort, and if they sense some personal gain from the experience. Similarly, students will make the strongest *personal* gain when they are given some autonomy to act on their own

Table 3

Relative Influence of Characteristics of Experience on Social and Personal Growth

Social Development	Rank	Personal Development
Discussed experiences with teachers	(1)	Did things myself instead of observing
Discussed experiences with family and friends	(2)	Free to develop and use own ideas
Adults did not criticize me or my work	(3)	Had challenging tasks
Had adult responsibilities	(4)	Developed personal relations with someone at site
Made important decisions	(5)	Free to explore my own interests
Felt I made a contribution	(6)	Discussed experience with teachers
Had a variety of tasks	(7)	Felt I made a contribution
Free to explore own interests	(8)	NS
Developed personal relations with someone at site	(9)	NS

and to use their own ideas. In contrast, positive change in *social attitudes* and *reasoning skills* requires more interaction with adults—where the involvement is collegial, not patronizing, and when they can initiate the contact.

Summary

The pre-post test data clearly show that experiential education programs can have a positive impact on students' psychological, social, and intellectual development. Students in experiential programs tended to increase significantly, both in absolute terms and in comparison with students in regular classroom programs, in the major scales employed in this study. These included tests of moral reasoning, self-esteem, social and personal responsibility, attitudes toward adults and others, career exploration, and empathy/complexity of thought.

While the results were extremely positive on a general level, they were not invariably so. That is, on every scale there were important differences among students and among programs. The most powerful predictors of growth were the *characteristics of the experiences* of individual students, with features suggesting autonomy as being most productive of personal development and features suggesting a collegi-

al relationship with adults and others as being most productive of social development. Among *program* features, the most powerful positive factor was the existence of a regular seminar.

One final word may be the most significant of all. Ninety-five percent of the participants in experiential programs rated their own program as either excellent (49%) or good (46%). Perhaps no further endorsement is needed.

Implications

We do not presume that this study has definitively answered all relevant questions regarding experiential education. Much remains to be done: In investigating the long-run effects of the programs; in identifying who most benefits from experiential approaches; in deciding what things are best learned this way, in learning how to guide experience and reflection most effectively, and much more.

Nonetheless, the findings do suggest implications that merit consideration and application, even before all the facts are in. The clearest and most significant conclusion we have drawn is that experience-based educational programs can be highly effective in promoting personal, social, and intellectual development—and can do so more effectively than classroom instruction alone. The most important implication for secondary schools is that experience-based programs should be adopted and expanded.

Such a recommendation may appear contrary to the commonly reported trends of returning to the “basics,” of declining budgets and reduced options, and of public pressure for tighter discipline. It need not be so.

While this study did not directly test the impact of these programs on symbol manipulation (reading, writing, and mathematics), other studies have shown that experiential approaches can enhance instruction in these skills (see Owens, in this journal). Secondly, all of the programs studied were maintained within existing school budgets. And, thirdly, the data clearly revealed experiential approaches to be effective in developing self-discipline as characterized by more responsible attitudes and actions.

This article began by asserting that learning by experience was *the* original educational method. We do not advocate a complete return to that state, but join our voices with those of Aristotle, Montaigne,

Rousseau, Dewey, the blue ribbon panels of the 1970s, and many others (including the kids we studied) in urging that the promotion of real and significant experience be a fundamental element of formal education.

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