

Learner-Centered Reforms in the Curriculum

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The typical American college has three curriculums--what we say we teach, what we do teach, and what students learn. Thus we have a catalogue curriculum, a teaching curriculum, and a learning curriculum. The curriculum statement that is printed in the catalogue frequently bears only the faintest resemblance to what is taught by faculty; and what is taught by faculty may have surprisingly little relationship to what is learned by students. It is like playing a giant game of telephone; the message that is received is not always the message that was sent. The original message is the catalogue statement which is usually a carefully worked out, reasonably sophisticated concept of what the curriculum committee and the committee on the mission of the college want education at their institution to be. As this curriculum is implemented by faculty, it becomes eligible for its first distortion, and as it is received by students it becomes eligible for further distortion.

Some faculty have high fidelity equipment, receiving and transmitting the educational message with relatively little distortion. Other faculty are using such old and antiquated equipment with so much noise in the system that they neither get the message nor transmit it with anything resembling faithful reproduction. Still others can understand a sophisti-

cated incoming message, but they lack the higher level skills required for transmittal to students. Then there are those few exceptional teachers who add their own personal touch to the message to make it stick indelibly in the mind of the recipients.

The catalogue curriculum is public knowledge but the teaching and learning curricula are not well known. Only within the past few years have we dared to even look at the teaching curriculum. A professor's classroom is his castle, and few have had the temerity to question what goes on there. While academic research is subject to open and penetrating criticism by colleagues, the academic code of honor still maintains that colleagues may not observe teaching unless invited to do so. Happily there is a trend now for faculty to invite the help of colleagues through observation and discussion of pedagogy. In addition the new emphasis on faculty development is helping some faculty develop skills to improve the teaching curriculum.

We have not yet paid much attention to the learning curriculum, however. To be sure, there have been research studies describing the "hidden curriculum" that shows us what students have learned. We do now know quite a bit about what happens to students as they proceed through college. While it is still painfully apparent that the admissions office has more influence over the quality of the graduating class than instructional faculty do, some changes seem to take place that please us. There is substantial agreement in the research that on the average, students make significant gains in subject matter knowledge and in their ability to think critically. They also show gains in personal integration and autonomy, in flexibility and open-mindedness, and in intellectual and cultural interests (Chickering, 1969). Agreements are so consistent

now that any more research on what happens to the average student on the average campus on these dimensions is probably redundant. What we need to know if we are to make improvements is who changes and why. Some students after all regress, while others make almost unbelievable gains, and we know little about the conditions of learning that are responsible for either.

Almost everyone has his or her own vision of a student-centered curriculum. Some academics are turned-off by the very term, equating it, I suspect, with a student determined curriculum or perhaps with a self-centered curriculum. Neither fits my idea of a student-centered curriculum. Although it may be desirable, it is certainly not necessary for students to determine the nature of their learning experiences in order for high quality learning to occur. I would also specifically reject the notion that self-indulgence and "doing your own thing" are useful motivational aids for introducing students to the hard self-discipline required for learning. Having disavowed those concepts as misunderstandings, I have to ask if the curriculum isn't student-centered, where is it centered?

Let me offer my definition of a student-centered curriculum. I believe that the curriculum exists to make learning maximally effective--not for the average student, but insofar as possible for each student. In my definition, a curriculum is student-centered to the extent that it provides for individual differences in learning. A course of study, for example, that does not provide for individual differences in the rate of learning is not maximally effective; it bores fast learners and frustrates slow learners, resulting in negative learning experiences for both groups. Student-centered reform in the curriculum then becomes a question of finding

ways to maximize learning for each student. And that is not as difficult or as expensive as it sounds. In fact we are already making substantial progress toward the individualization of education.

I can identify four major dimensions important to learning along which students differ. They differ in rate of learning, in learning style, in life situation, and in goals. Two of these dimensions are receiving a great deal of attention today; the other two are just beginning to surface. We know quite a bit about reforming the learning curriculum through self-paced learning modules and about gearing education to the situational needs of such nontraditional learners as working adults, retired persons, prisoners, and others whose situations require special consideration. We do not know as much about gearing instruction to the cognitive styles of learners, nor have we done any really serious thinking about reform in the content and goals of the curriculum.

Individual differences in the rate of learning became a very obvious and serious problem for colleges with the advent of large-scale open admissions in the 1960's. Open-door colleges were faced with staggering diversity, and it didn't take long to discover that there was simply no way to make a common instructional program maximally useful to a student reading at the fifth grade level and to one reading at the 14th grade level without individualizing instruction.

Fortunately for higher education our critical need arrived shortly after advances in the psychology of learning had pathed the way for practical applications of reinforcement theory in the form of self-instructional modular units. The simple mechanism that made it possible for students to exercise control over the rate of presentation was a breakthrough that led to the much more sophisticated and attractive self-

pacing models that exist in all kinds of colleges and universities today. Self-paced learning modules are used today in two-thirds of the community colleges--more than double the use only five short years ago (Cross, 1975). The audio-tutorial program introduced at Purdue University a little more than 10 years ago has made a powerful impact on teaching in the natural sciences (Postlethwait, 1971). The Keller Plan or PSI, first introduced in this country in 1968, has revolutionized teaching in some disciplines within the last few years. Today there are probably in the neighborhood of 1000 PSI courses in psychology alone, and the rather sophisticated learning principles embodied in PSI are sweeping across other disciplines--especially physics and engineering--at a phenomenal rate.

There is no longer any doubt that self-pacing is both feasible and desirable as far as student learning is concerned. But what is good for students is not always convenient for teachers and administrators, and the promise of self-instructional units has forced educators to examine their priorities. Most institutions and instructors have compromised, permitting students to pace themselves as long as they do so within the administratively convenient term or semester. A truly student-centered curriculum would permit students to complete learning units in accordance with their needs rather than ours. I think that day will arrive when colleges will take the logical, rather than the traditional, approach and will credit learning by units mastered rather than by time served.

The second dimension of individual differences was also ushered in by the egalitarian push to make postsecondary education available to all. The largest group of citizens systematically excluded from education by the classical model of a college were those who were unable to make the

pursuit of formal education their major activity. In the year 1972 the number of part-time students began to exceed the number of full-time students in institutions of higher education. Part-timers now constitute the majority of American college students, and the rate of growth of part-time students in the 1970's has been more than three times that for full-time students. This means that the majority of students today have other responsibilities, and colleges can no longer set procedures with confidence that students will be free to arrange their lives and schedules to conform. Schedules, services, and even locations have had to become student-centered rather than institution-centered. No one needs to tell this audience how revolutionary the nontraditional movement has been. The massive move to offer the programs and services that will attract part-time adult learners continues into 1975 unabated; the speed with which this student-centered reform has made its imprint on education is, I suspect, unrivaled in the history of higher education. Well over half of an estimated 2000 nontraditional programs in this country today were launched since 1970.

For a combination of reasons, some institution-centered and some student-centered, colleges have shown great willingness, even eagerness, to make it easy for people from all walks of life to attend college. If they can't come to us, we will take the college to them through new technologies, through off-campus locations in shopping centers, prisons, industry, and wherever an economically viable number of students can be assembled. I suspect that higher education has probably done more to meet individual student needs for situational adaptations than any other single student-centered reform. In fact, it is to the point now where I, for

one, wish that we would balance our eagerness for revising procedures and structures with a careful consideration of what it is that we are so eager to deliver to everyone. Are we offering education with a form and content that is maximally useful to students and society as we move toward the year 2000?

We have not made nearly as much progress in casting the form and content of education so that they are maximally useful to individuals as we have in offering education at a rate, a time, and a place geared to individual needs. It now seems quite clear that we are not going to improve instruction by finding the method or methods that are good for all people. By and large, the research on teaching effectiveness has been inconclusive and disappointing because, I suspect, we were asking the wrong questions. When we ask whether discussion is better than lecture, whether TV is as good as a live teacher, whether programmed instruction is an improvement over more traditional methods, we find that for that mythical statistical average student it seems to make little difference how we teach. But when we look at the data student by student, it is clear that some students improve, some remain unaffected, and some actually regress under various teaching conditions. The very process of averaging the pluses, the minuses, and the non-changers wipes out the message that different methods work for different students. Psychologists are now asking the more sophisticated interaction questions about learning styles--which methods work for which students?

While we do not yet know enough about individualistic learning styles to be able to prescribe strategies that will maximize learning for a given person, it is clear that we need to give more attention to offering pluralistic alternatives. Jerome Bruner puts it this way; "The fact of individual

differences argues for pluralism and for an enlightened opportunism in the materials and methods of instruction. . . . A curriculum, in short, must contain many tracks leading to the same general goal (Bruner, 1966, p 71).

Community colleges, especially, have found that pluralism in educational methods is a necessity for dealing effectively with the diversity of student learning styles. Increasingly, colleges concerned about undergraduate learning offer lessons via pluralistic routes--lecture, discussion groups, learning laboratories, media presentations, peer tutoring, project learning, etc. Pluralism in instructional strategies need not, however, be institutionally determined. Some of the more sophisticated learning programs are offering a variety of learning strategies within a single class. The audio-tutorial method, for example, includes printed materials, physical objects, projection visuals, and audio tapes, and in addition provides lectures and small discussion seminars.

Still another method for introducing variety into the curriculum is to offer more opportunity for experiential learning, which is increasingly popular precisely because it offers enormous variety in both resources and methods. Learning through modeling, object manipulation, and problem-solving not only offers more options than the overly restrictive paper-and-pencil school learning, but it is more reality-oriented, and if you will pardon the expression, more relevant to the lifelong learning that is required of anyone living in a society changing as rapidly as ours.

Although it will be nice when research is able to tell us more about cognitive styles, student-centered reform of the curriculum does not hinge upon our ability to prescribe appropriate learning strategies for specific student learning styles. When options and variety are offered, students

may sample all forms of presentation, consciously or subconsciously learning more through one mode than another, or made aware of cognitive styles, students may diagnose their own styles and choose to emphasize those forms of learning that seem useful and effective for them.

This brings me to the fourth major dimension of the student-centered curriculum--the goals of learning. By a learner-centered curriculum with respect to goals, I do not mean that individual learners must necessarily determine their own goals--although the learning contract has undeniable advantages. Rather I refer to the fact that the goals of learning are necessarily individualistic, especially the goals that matter most. I suspect that we would all agree that it is not as important for all students to be able to pass a standardized comprehensive subject matter examination as it is for all students to be able to use their education to make judgments and contributions that are expected of well educated persons. We may have a beautiful set of catalogue goals; professors may be quite dedicated to the fullest possible intellectual development for students, but in the final analysis, goals have impact to the extent that they show up in the learning curriculum of students.

I suggest that we launch a truth-in-advertising campaign for education--one that tries to aim our teaching practices toward our catalogue goals. A good catalogue statement of goals is a joy to behold, and the hearts of educators beat with pride as we read goals such as these: "The university endeavors, through the tools of learning, to develop breadth of mind, tolerance of spirit, and strength of character." or "The educational effort . . . is directed toward leading the student to be an independent seeker in his own right, not a passive recipient of information, and to assume responsibility for gaining both knowledge and judgment which will enhance his later contribution to society."

While we may hope for outcomes such as these, we do precious little to see that they occur. Most faculty adopt a somewhat narrower set of goals from those in the catalogue, but faculty, individually and collectively, subscribe to goals such as cultivating the intellectual skills of problem solving, synthesis, and analysis as the appropriate teaching curriculum. When it gets to implementation, however, a substantial number settle for demonstration of the mere accumulation of information in the academic disciplines. By the time we get to the learning curriculum, we face the tragic reality that we have not turned out students who even grasp the significance of the catalogue statements of educational goals, let alone incorporate them into their lives.

Let me start with one of the most difficult but most important of all educational goals, imprinted indelibly on our minds as we watched the parade of highly educated Watergate participants reveal their value priorities. With good reason, education in this country has been extremely cautious about venturing into the area of personal values, lest value education turn into indoctrination. Yet we want our students to be able to make the value judgments that doctors and lawyers and businessmen and congressmen and teachers and scientists and all educated persons are perpetually called upon to make in their professional as well as in their personal lives. It is fair to say, I think, that it is extremely rare for any educator to face the value issue squarely and ask what we can do about it.

Lawrence Kohlberg is one professor who has asked that question, and he now teaches a popular course in moral development to freshmen at Harvard. His course consists of small group discussions of moral dilemmas, accompanied by lectures and readings designed to raise basic issues in moral philosophy and in the psychology of personal development. Kohlberg's

theory of moral development has attracted great attention because of the intellectual heft behind his research and writing. Moral judgment, to Kohlberg, is reflected in the quality of the student's reasoning, not in the particular position adopted.

The quality of reason would appear to be at the heart of the educational process, no less so in the areas of morality than in the career areas of one's discipline. Just as we do not expect the student in mathematics to become proficient without practicing solving problems, so we should not expect students to develop skills in moral reasoning without practice in thinking about moral dilemmas. There is really nothing so radical about Kohlberg's cognitive approach to moral reasoning. Pitting one's reason and communicative skills against peers, teachers, and the best thinking of the ages is not at all a far out idea in education.

One of the great myths of education is that students should practice thinking on abstract problems, free of implications for real living. So ingrained is this myth that the word academic is defined in the dictionary as something "having no practical or useful significance." To say that a question is academic is to dismiss it as having no practical value. We don't seem to have moved much beyond the sort of reasoning that had high school students in the 1920's learning Latin to improve their English. With a little common sense and a lot of research, we finally discovered that there is little transfer of training and that studying English is the best way to learn English. But Latin did not disappear as a requirement without loud protests and considerable wringing-of-hands over the erosion of academic standards in the high schools.

It is now quite clear that the ability to solve academic problems bears little or no relationship to the ability to solve real-world problems.

The correlation between college grades and adult success in life, however measured, is almost nil. Yet while our catalogue statements continue to hope for students who can solve real problems, our teaching curriculum continues to hope, despite ample evidence to the contrary, that there is some such phenomenon as transfer of training--that students who master the academic curriculum will be adequately prepared to master the challenges of life.

I can think of no conceivable reason why students should not practice thinking by thinking about real problems. They are not only every bit as intellectually challenging as academic problems, they are frequently more appealing and motivating to students, calling forth more and better efforts. Why shouldn't our colleges be requiring students to present articulate arguments for and against such major and meaty issues as the graduated income tax, police review boards, automation, unionism, guaranteed income, egocentric hedonism, pollution, the death penalty? Indeed the topic of education itself presents ample scope for exercising those skills that we say we most want students to develop--marshalling of evidence, analysis of facts, logic of argument, synthesis of information, communication of convictions.

Although there is evidence that educators recognize the problems inherent in the traditional curriculum (Cross, 1973), making changes in curricular content is surely the most difficult of all innovations. There are no graduate schools turning out faculty members prepared to think with sophistication about the teaching of undergraduates; there is no reward structure to recognize the extensive effort that goes into preparing current and challenging materials; and innovators and their innovations are usually imposed upon a system that is ill-prepared to accommodate

them. Nevertheless a number of institutions have found creative solutions to curricular reform.

The most drastic solution is to create a new institution that has no traditions to change. This can be done either through establishing a cluster experimental college, freed from the mother university requirements, or it may be done through establishing a new campus free to design its own structure. Evergreen State College in Washington, for example, took a strong position that education should emphasize problem-solving through interdisciplinary study, internships and learning contracts. Since the traditions of academic departments, tenure, and faculty rank do not contribute to those educational goals, they do not exist at Evergreen.

Some institutions, however, have managed to take less drastic routes to curricular reform. Worcester Polytechnic Institute has managed to convert a quite traditional engineering curriculum into a new curriculum in which up to one-quarter of the student's work is done through projects and independent study on real-life problems (Monroe, 1974). A less drastic change yet is M.I.T.'s plan. They revitalized the undergraduate curriculum through making relatively little demand for change in the faculty reward system. They devised small "research families" in which faculty and students work together on real problems in the disciplinary fields (Bonham, 1974-75). Although I have been critical of discipline-obsessed curricula, let me be quick to recognize that there are real problems to be found in the disciplinary fields. The fault lies not so much with the disciplines themselves as with traditional teaching that assumes that the business of education is to provide answers rather than to stimulate questions and thought.

Another increasingly common approach to helping students cope with real-life problems is to place more emphasis on cooperative education and experiential learning. While the relationship between on-campus study and off-campus internships is all too often left to the student to figure out, the fresh breezes of reality do blow through some pretty musty classrooms, and students are quite likely to rate their experiential learning as the richest of their college experience.

Competency-based curricula represent yet another modification of traditional curriculum that is more in tune with catalogue goals. When Alverno College in Milwaukee, Wisconsin announces that each student is expected to develop an awareness of the world in which she lives, they do not accept scores on a current events test as adequate demonstration of that competency. Rather they assess the student's ability to carry on an intelligent conversation about contemporary affairs with four or five other adults. If I were a student at Alverno, awareness of the criteria for evaluation would certainly affect how I studied and what I learned about the world in which I live. Thus the learning curriculum can be changed through changing evaluation procedures.

Hundreds of examples could be given of institutional as well as individual efforts to make the undergraduate curriculum more meaningful and lively and active for students. Indeed the trend in curricular innovations today is almost always student-centered. But for every person who puts forth the effort to think analytically and creatively about what we are teaching and why, there are a hundred who take the path of least resistance, content to go along with tradition and the status quo. Unfortunately Professor Gallup is quite right when he observes that

Dull lectures can follow dull lectures like dominoes; grading on a curve can occur ad infinitum; students can be bored in a lock-step system; all manner of inefficient and perhaps harmful teaching can take place. And if such teaching is part of the status quo it goes unchallenged, except perhaps by a few alienated students. The innovator does not go unchallenged (Gallup, 1974, p 129).

Indeed he or she does not. But bright and able faculty members and administrators are being recruited to the growing ranks of those interested in student-centered reform of the curriculum. The education of the 1970's and 80's is not the education of the 1950's and 60's. In decades just past, we were primarily concerned about access to educational opportunity. We were so busy seeing that everyone--minorities, women, part-time students--had the opportunity to learn at minimal levels that we gave little attention to maximizing learning. Whereas the goal of the 1950's and 60's was to achieve education for all, the goal of the 1970's and 80's must be to achieve education for each. That can only be done through student-centered reform of the curriculum.

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References

- Bonham, G. W. Revitalizing undergraduate learning. Change, December-January, 1974-75, 6(10), 11-12; 63.
- Bruner, J. S. Toward a theory of instruction. Cambridge, Mass.: Harvard University Press, 1966.
- Chickering, A. W. Education and identity. San Francisco: Jossey-Bass, 1969.
- Cross, K. P. New students in a new world. In D. W. Vermilye (Ed.), The future in the making. San Francisco: Jossey-Bass, 1973.
- Cross, K. P. 1970 to 1975: Years of change in community colleges. Findings (quarterly newsletter of the Educational Testing Service), May 1975, 2(2).
- Gallup, H. F. Problems in the implementation of a course in personalized instruction. In J. G. Sherman (Ed.), Personalized system of instruction: 41 germinal papers. Menlo Park, Ca.: W. A. Benjamin, 1974.
- Monroe, S. WPI's program for technological humanists. Change, June 1974, 6(5), 20-23.
- Postlethwait, S. N. Independent study in biology. In R. A. Weisgerber (Ed.), Developmental efforts in individualized learning. Itasca, Ill.: F. E. Peacock, 1971.