



Continuing Education for What? *

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The answer to the question posed by the title of this presentation would seem to be obvious: the purpose of continuing education is clearly to improve the quality of patient care. While this generalization would probably produce full agreement, it is incomplete without the next question: what care needs improvement? At this point the appearance of harmony may begin to disintegrate as discordant notes of special pleading begin to emerge. Out of the ensuing noise, one common theme can be identified: practitioners need more information. There may be no consensus about what information they need, but there is little dissent from the view that the world of medicine is changing so rapidly as a result of contemporary research that what is current today will be dated in a few months and obsolete in a few years. And the cries of despair are mounting as the gap allegedly widens between the explosive growth of new knowledge and its application at the bedside.

In the face of such a growing threat to their professional competence, it is no wonder that practitioners clamor for some better means of dealing with the flood of information that threatens to engulf them and that educational programmers grasp at any straw which gives some promise of worth. The current straws are familiar to all: programmed instruction, 8 mm. single-

concept films, television—both one and two way, either live or taped—among others. Each has been identified as a potent mechanism for meeting this educational need in a fashion that makes it easy for the already overworked practitioner to dip into the treasures that teachers have found for him. And when, on those rare occasions that we press him, he demonstrates that he can recall verbatim (or at least in reasonable facsimile) the information he has sampled, then we are very pleased, particularly if he also reports that he has enjoyed both the dose and the vehicle.

I am sure you recognize the tone of irony; but lest there be any doubt, let me state bluntly the conclusion to which I have been led by the inescapable evidence of our failures: we have been educating for the wrong thing.

It is not my intent to deny the critical importance of biomedical research or the splendor of an incredible expansion in the body of information available to those who seek a detailed understanding of human health and disease. It is simply to point out that the exquisite elaborations of contemporary investigation are generally of major significance in the care of relatively few patients. In our eager dissemination of new information, we seem most often to be working at the upper extremity of an S-shaped curve where an immense instructional investment is likely to result in a very small increment in the quality of patient care. The ques-

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tion then is not one of absolute worth of new knowledge, but of relative priorities in continuing education. Shall attention be given chiefly to those things that will benefit only a few, or to those things likely to be of great import in the care of many. Realistically, in the matter of new knowledge that is potentially beneficial to the many, it must be evident that a physician will scarcely be able to avoid it if he reads a daily newspaper, *Time*, or one of the summary news sheets that appear so regularly in our mail.

Categorical Content Model

What then is the problem? Any careful review of continuing medical education in the United States today will lead inexorably to the conclusion that most programs are based upon a categorical content model. They are built around subjects: cardiology, oncology, physiology, biochemistry, endocrinology. Name a department or subdivision of a medical school and you have named a continuing education program. Name a diagnostic or therapeutic tool and you have identified another. The assumption that appears to underlie this educational model, an assumption derived from the long tradition of the schools (note that the reference here is to experience, not success), is that practitioners who learn more about these topics will transform this knowledge into action. Yet the fact seems to be that such translation does not necessarily occur. From John Youman's study (1935) to John Williamson's study (1965), there have been repeated and disheartening examples of the failure of education built upon the content model to alter substantially the behavior of practitioners. By what devious path, one might reasonably ask, are we then led to the conclusion that more information about the importance of doing Pap smears for early detection of cervical cancer will lead physicians to carry out

this test when it has been the discouraging experience of the American Cancer Society and the National Cancer Institute that in spite of an intensive informational program for a decade this simple maneuver is omitted from the physical examination more often than it is performed.

Yet we persist in talking of bringing more information to the practitioner, of bringing it to him at his hospital or his office or his home, of making the communication more appealing and more convenient. We talk of better printed informational sources, of primary publications and abstracts and bibliographies. We try to convince each other of the importance of telephone lines to carry information through illustrated presentations, or ingenious dial-a-lecture methods. We talk of wide-band communication systems for television and computers, bidirectional to allow active participation. We seem enchanted by the idea of a network that allows the videotape lectures and demonstrations made in one center to be shipped to another for their delectation. It is true that these are all magnificent and exciting technologic advances, but some of those outside medicine who look more coolly at the educational potential of such devices are not quite as enthusiastic as we seem to be. At a recent conference jointly sponsored by the Department of Defense and the Office of Education on the topic "Engineering Systems for Education and Training" one of the most perceptive spokesmen noted:

. . . the education technology industry . . . knows a great deal about the science and technology of information processing and transmission, but it knows very little about the human receiver of that information. The human receiver, the man who must learn and recall the information transmitted by this sophisticated new equipment remains largely untouched. . . .

And at another point in the proceedings the same acute observer

was heard to say about the value of speed reading courses for executives who must cope with an increasing flow of information across their desks:

The problem will never be solved by speed reading courses. What we really need are courses to teach people to write things that are worth reading slowly.

Process Model

For all these reasons, it would seem that the time has come to try a different educational model—one built upon solid evidence about the way adults learn rather than upon the long-honored methods of teaching them. There is ample evidence to support the view that adult learning is not most efficiently achieved through systematic subject instruction; it is accomplished by involving learners in identifying problems and seeking ways to solve them. It does not come in categorical bundles but in a growing need to know. It may initially seem wanting in content that pleases experts, but it ultimately incorporates knowledge in a context that has meaning. It is, in short, a process model of education.

Let me hasten to assure you that I do not mean to assert that knowledge and performance are unrelated; they are clearly overlapping qualities. It is also clear that they are not identical dimensions. The best performance is built upon sound information; but the provision, or even the acquisition, of sound information is no assurance that it will occur. Let me illustrate this by describing the first stage of a long-term demonstration and study of continuing education which has been launched at the University of Illinois Center for the Study of Medical Education, with the support of the USPHS Bureau of State Services.*

* Dr. John Williamson and Dr. Marshall Alexander were the primary investigators and a complete report of the work will be published shortly.

It began with a question developed by the study group representing a community hospital and the medical school: to what extent do physicians respond to unexpectedly abnormal results on 3 routine admission laboratory tests—hemoglobin, urinalysis, and fasting blood sugar? The charts of patients discharged during a one-month period were systematically studied to answer this question, and the answer was not particularly reassuring: only 35 per cent of the unexpected abnormalities produced any perceptible physician action. A startled education committee agreed that an educational problem existed, and a decision was reached that the instructional method to correct it would be a simple presentation and discussion of the data with expert consultants. More than 80 per cent of the staff members took part in the meeting; and at its end there was a general acknowledgment that something must, and would, be done promptly to correct what the staff judged to be unacceptable professional performance. One might have concluded from this response that the educational effort had been successful, but confirmation required data. These were gathered by replication of the chart study one month later—and with identical results.

I will not describe the rest of the effort which transformed this initial educational failure into ultimate success for the outcome is irrelevant here, but the simple and long-documented fact illustrated by this vignette is that men learn what they want to learn. The first step in this long process is not to tell them what they need to know, it is to help them to want what they require. It means involving participants in identifying their own educational needs, in selecting the learning experiences most likely to help them to meet the needs, and in assessing whether they have learned what was intended, not merely determining whether they took part in the learning experi-

ence, or even whether they liked it. And if the final evidence clearly demonstrates that the desired learning did not occur, then another look must be taken at both the objective and the instructional method to determine which requires change.

Physicians are basically pragmatic and seek things that are useful to them. Academicians, on the other hand, appear to equate the pursuit of basic principles (as we like to describe what we do in our daily work) with ultimate truth and are inclined to demean the practitioner who keeps asking for practical answers. There is no implication in this observation that educational programs should become answer-giving sessions, but it is important for educators to acknowledge and exploit the pragmatic orientation. It is just as legitimate to be interested in therapy as in diagnosis, in the indications for a specific medication as in the mechanisms which produce its effect. Either may be the means of attacking a problem—or an exercise in pedantry.

Objectives

In a very practical sense, the most important element of continuing education may be that of leading practitioners to a study of what they do, to an identification of their own educational deficits, to the establishment of realistic priorities for their own educational programs. There must be many ways of accomplishing this end, but one with which we have gained some experience begins by delineating the health needs of the population served by an individual practitioner or a hospital staff. Using available hospital data as it is recorded in the professional activities study, John Williamson developed a computer program that orders these health needs by weighting 3 variables. The first is disease incidence, for, other things being equal, diseases that are more frequent probably deserve more edu-

cational attention than those less regularly seen (in contrast to what occurs in many hospital programs where the grand rounds built upon a patient problem no one has ever seen before or is likely to see again is widely applauded). The second variable weighted in the computation is individual disability produced by these diseases. This is estimated through such components as mortality and morbidity rates or the number of complications produced. Again, other things being equal, it seems logical to give more educational attention to those things which produce great disability than to less disabling disorders. Third, a variable labeled "social disruption" is estimated, using such elements as the number of dependents, the age of the patient, and the cost of illness as indexes of the degree to which individual illness may affect the family and related social units. While the weighting may be arbitrary, it is not immutable; and the method provides a start in systematic definition of the individual and social problems physicians encounter in the patient population with which they deal.

A modification of this general methodology was utilized by Storey and Castle (1966) as part of the Utah Pilot Study in the late lamented National Plan of the American Medical Association. Here individual physicians were asked to record the clinical problems they encountered over a forty-eight-hour period, as well as a personal perception of their educational needs. Bergman and his associates at the University of Washington (1967) did an observational analysis of the work of pediatricians from which it was possible to identify many of the performance skills required by this medical specialist. Similar studies of office practice have been carried out by Greenhill in Canada (1965) and Baker and associates in Missouri (unpublished data). Each represents a method of initiating the process

of establishing educational objectives by identifying the problems with which the potential learner must deal, rather than building programs upon problems a faculty would like to teach him how to solve.

Once health needs of a target population have been determined, an inventory of the resources (information, professional skills, diagnostic and therapeutic tools) available to meet them can be developed. If it becomes clear that little or nothing can significantly influence the outcome of a frequently encountered clinical problem, then wisdom would suggest that educational attention be directed to other things about which something can be done, while encouraging research on the problems that remain to be solved. This is another way of illustrating a rarely verbalized observation that research interests of teachers are unlikely to be the most useful program determinants in the continuing education of practitioners, since the ever changing interface between the known and the unknown is rarely the point at which the most profitable educational investment can be made.

Finally, practitioners need to be involved in an analysis of the extent to which they use themselves and the available resources to meet needs that have been identified. The documentation of discrepancies between optimal and actual performance is not an end in itself—it is merely the beginning of an educational process with the greatest likelihood of success: that which is built upon demonstrated and acknowledged need.

Even this hasty conceptual sketch of a process model for continuing education must make one thing very clear: the role of both teacher and learner will be far different from that to which we have become accustomed. As one observer has put it, the practitioner-learner must progress steadily from listener to questioner to participant

to contributor. If the practitioner is to accomplish this shift, the academician teacher must also change, but in the opposite direction, until at last he becomes a thoughtful listener to those who are trying desperately to tell him some of the things they need if they are to be more successful in their work, instead of remaining a gifted dispenser of things they might use to become more like him.

Conclusion

Continuing education should mean continuing self-education, not continuing instruction. If this desirable goal is to be accomplished, there must be movement away from the content model, which encourages dependence upon teachers, to a process model, which demands a significant measure of self-reliance—a shift away from preoccupation with courses and methods, toward an augmented concern for educational diagnosis and individualized therapy. It does not mean an immediate abandonment of present program forms, but it is likely to be accompanied by a slow erosion of the faith which presently supports them.

However, even those who accept the conclusion might reasonably ask whether it is practical. My own response is an unequivocal yes, for we have a rich variety of mechanisms both old and new that are readily available if we will only reach out and grasp them. Let me note only 2 that have captured the contemporary stage. The Regional Medical Programs (P. L. 89-239) is one which requires cooperative ventures among medical schools, the health professions, voluntary health organizations, public agencies, and the public at large. While it has an unfortunate categorical orientation, the categories are sufficiently broad to permit bold new ways of attacking the problems of continuing education through the study of patient care. Happily, those who are guiding the program seem disinclined to encourage

merely an increased pace in the development of more refined tools to carry out the same old educational strategies. They seem instead to be calling for innovation coupled with evaluation and to be ready with the funds that make it possible to do these sometimes costly things.

A second resource is the Inter-university Communications Council, better known as EDUCOM. The basic mission of this agency is to explore the means by which contemporary educational and communications technology can be exploited by universities acting in concert, rather than singly. A Task Force on Continuing Education has recently been established by the Council and it is prepared to respond to the needs of the health education community as well as to the other professions represented in the university. The early descriptions of EDUCOM may appear to have emphasized television, radio, and computer networks for purposes of information storage, retrieval, and transmission; but there is no basic reason why they cannot also be used for other things that can serve educational diagnostic as well as instructional purposes (for example, computer simulations of clinical problems).

The ultimate question, however, is whether content-oriented educators can mount successful process-oriented continuing education programs. I am not optimistic that this can be done without some retraining of the older ones among us and some training of new leaders in the science of education. Fortunately, there are steadily widening opportunities for those who have committed themselves to an educational career in medicine to gain these special skills. For example, the Center for the Study of Medical Education now offers one- to two-year fellowships in educational research and development or, jointly with the College of Education, a graduate program leading to a Master of Education

(in medicine) degree; with the support of the Bureau of State Services a more abbreviated six-week introduction to educational science is being developed specifically for individuals directing programs of continuing education; and with support of the National Institutes of Health's Division of Regional Medical Programs, a series of one-week programs is being planned to orient educational practitioners in medicine to some of the content of educational science in such specific fields as instructional systems and evaluation.

But those who direct programs of continuing medical education are not unlike the practitioners who are the objects of this effort. Until they recognize a need to know, it is unlikely that they will learn. If there is no perceived need to change, then neither new information nor vigorous instruction will alter their basic behavior. Instead, they will continue with increasing skill to do things which, in my view, have not proved to be very useful. They will go on developing attractive, even dazzling new programs, methods, and hardware for the communication of information; but they are unlikely to be any more successful in the future than they have been in the past in changing the behavior of recipients.

The gauntlet is down, the lists have been entered, and the battle for better continuing education can be joined. But as the pace quickens, it may be well for all to remember the prophetic words of Pogo: "We have met the enemy, and they are us."

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