

Theoretical Foundations

Evolution of Planning in CME

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Abstract: *Continuing medical education (CME) planners are faced with new challenges in creating a learning climate to address the needs of five groups of stakeholders: learners, teachers, planners, the institution, and the public. One way to look at planning is through its evolution in four stages: traditional planning, planning for measurable behaviors, planning for individualized learning, and planning within a learning system. Traditional planners used an expert as teacher to screen content and determine the relative importance of information within the field. Information was transferred to learning and they were expected to determine its use in practice. Planners working toward measurable behaviors moved the balance among the stakeholders to provide a more explicit role for learners with behavioral objectives or goal statements so that learning could be measured. However, planners were still concerned with groups of people. The climate of health care reform has been the impetus to move to a system that better accounts for the needs and learning processes of individuals by planning for individualized learning. Currently, we are moving further forward to look at a system that places individuals within the context of their own institution. Individual needs are based on data from the system; fulfillment of those needs is demonstrated by changes in the data. Conflicts arise in shifting the institutional mission from CME as simple numbers—number of programs, number of participants, number of hours—to CME that places value on how individuals change within the institution in ways that further the institution's mission.*

Key Words: Adult education/learning, learning practices, organization of CME, planning for CME, program design

Continuing medical education (CME) planners are immersed in a struggle to define systems that will support the learning needs of physicians as the healthcare system evolves to a new level. Planners must not only create a learning climate with an array of learning options, but they must ensure that the needs of stakeholders in the system are accounted for in the planning process. Cervero defines the stakeholders in program planning as learners, teachers, planners, the institution, and the affected public.¹ Planners must meet (1) the needs of learners and teachers for enhanced professional expertise and effective practices, (2) the needs of

institutions for the safe practice of medicine, for enhanced professional expertise of practitioners, and for continued economic viability, (3) the needs of the public for demonstration of a safe, efficient, and up-to-date practice of medicine, and (4) their own needs for a system that creatively combines what we know about learning with the needs of all of the stakeholders.

Major growth of the CME enterprise over the past several decades matches the escalation of needs of stakeholders. Healthcare reforms create enormous economic and political pressures on institutions while the public demands a stronger

voice in healthcare. Learners have high expectations of educational experiences, their value, and outcomes. At the same time, our understanding about how physicians learn and change increasingly expands in significant ways. These escalating needs and tensions are forcing planners to re-examine how we think about planning learning activities. In the future, CME planners will need a far more sophisticated understanding of the planning process in order to accommodate the needs of the CME stakeholders. With a clearer view of how and why we plan learning activities, we can more reasonably bring together issues related to the needs of each group of stakeholders. An example of a new paradigm for CME planning was described by Moore and colleagues.² The authors responded to the frustrations of CME planners and learners that result from the difficult balance between CME as a major business force and as a provider of learning for enhanced expertise—and from the competing interests of stakeholders in CME. One way to better understand the meaning of planning is to examine the evolution of our thinking about planning as reflected in four types of planning models.

A matrix outlining the evolution of planning models illustrates the progression over time of assumptions in CME. This view of planning moves from (1) traditional planning, (2) planning for measurable behaviors, (3) planning for individualized learning, to (4) planning within a learning system. Table 1 compares models of planning with the interests of each of the major stakeholders: learners, teachers, the institution, the public, and planners and illustrates changes in CME planning. For this discussion, learners and most teachers are physicians; institutions include such health care agencies as medical schools, hospitals, health maintenance organizations, professional organizations, and other health care providers who plan CME.³⁻⁷

Planning for Traditional CME

In 1957, the launch of Sputnik focused a new spotlight on science. The message was clear that lifelong learning was an essential response to the

knowledge explosion. Professionals could not count on basic training to provide a theoretical base for practice over time. Physicians were asked to access, sort, sift, and apply a tremendous amount of new knowledge that changed the way they practiced medicine. The rate of production of new knowledge matched the rapid growth and formalization in CME during the 1960s, with planners being asked to support physicians' management of new information. The standard became a replication of the formal training physicians received in medical school. The traditional planning model, which continues to form a backdrop for most formal CME, focused on the subject matter. There was an assumption that CME transferred information from experts, who identified the necessary and important ideas, to learners. Lectures presented large amounts of information to groups of physicians to translate for application in their own practices. If CME planners selected teachers, recognized as authorities by the learners, by other teachers, and by the institution, a system for control of the quality of content was in place.

As learners, physicians expected to attend periodic formal learning sessions that might take the form of grand rounds, conferences, or professional meetings. Teachers and planners worked under the assumption that logical, organized, carefully presented information enhanced learning. The physician population, rather than the individual, was used to determine which areas were important for proficiency. Although the subject matter was the key, the learner determined its specific use. Adapting the information to individual circumstances or settings was the responsibility of the learner rather than the teacher or planner.

The teacher performed a critical role in screening content, determining relative importance of information to the field, and distilling essential pieces for presentation. While teachers did not have exclusive access to information, as experts they put content in perspective. Important teaching techniques centered on the need for a logical subject sequence, an outline or advance organizer, and an assessment of the level of knowledge.

Table 1 Planning Models for Learning

Planning Components	Planning for Traditional CME	Planning for Measurement of Behavior	Planning for Individualized Learning	Planning for Learning Systems
Content	Subject matter definition by expert	Needs assessment for intended audience	Identification of individual needs	Identification of individual needs from data as they fit within a system
Purpose	Content driven	Objectives defined for intended audience	Individualized objectives	Individualized objectives based on system predictions
Format	Delivery of information, usually by lecture	Program design to fit objectives	Collaborative selection of materials, activities, sequences	Fulfillment of objectives measured by changes in data
Evaluation	Evaluation of speaker	Evaluation of program satisfaction and self-assessed meeting of objectives	Description of changes or demonstration of new concepts, skills, attitudes in clinical practice	Analysis of process; reidentification of gaps by individuals and system

The institution was the central power and focus in traditional planning with its support of efforts to provide high-quality faculty. Further, the institution provided a setting traditionally called a learning environment, often taking the form of a conventional classroom. Institutions gained stature by structuring the timing, format, and content of programs via its agent, the planner. In many ways, this was the obvious extension of undergraduate and graduate education. The institution shaped thought through its representatives: the planners and teachers.

For planners, the traditional planning model was, and is, often measured in numbers: number of courses, number of participants, number of hours of CME credit, and number of dollars from tuition. A lecture model driven by an expert allowed for large group instruction at modest cost. Facilities were simple and readily available. Participants were familiar with the system and knew how to participate. Planners came with a wide variety of backgrounds, because most of the planning involved organizing meetings, a skill often learned on the job. While training in adult education would allow some changes in the character of programs,

much of the planning role centered on selecting an expert and in planning the meeting itself.

The traditional planning model served the field well. Large numbers of physicians and other health professionals assumed that they would participate in learning activities regularly. They could identify providers, and usually felt at ease with the learning activities. A formal system of continued learning was within the core of healthcare practice. Traditional CME was a source of funds for many institutions such as medical schools, hospitals, and professional associations to help support other activities. An extensive enterprise, providing large numbers of programs in different forms, evolved.

Yet there were deficiencies in the traditional model.³ The most critical problem was inadequate evidence of impact on the learners' practice.^{8,9} The episodic nature of participation in traditional CME allowed for little evaluation beyond learner satisfaction with the faculty and content. It was difficult to provide learners with a timely response to new information for a clinical application, changes in our understanding of a physiologic process, or new technical skills. Because of the

need to find experts and advertise to large numbers of people, planners worked within systems where plans were created without the opportunity for spontaneity. It was difficult to set up a system that allowed for reinforcement or continuation of previous learning. A group of people without shared experiences got together for one program, or only occasionally. When the teacher was expert, learners were expected to listen. As these factors developed and combined, their interaction focused attention on the role of the learner, resulting in a change in the balance among the stakeholders.

Planning for Measurement of Behaviors

The underlying assumptions about traditional planning generated some forceful questions about the balance of responsibility for learning and concern for accountability about what we as a society expect from CME. An attempt to describe the products of learning led to a shift in planning, so that planners sought to shape behaviors of learners as direct products of learning.⁹ While retaining the teacher's status as expert, teachers and planners worked together to define what they expected from participants. Those expectations were made explicit, often stated as behavioral objectives or goal statements. The resultant shifts in teaching style included techniques to reinforce desired behaviors with proficiency learning or performance testing. Testing created a measure of the learner's understanding of the content in terms of the stated objectives. Content reflected required baseline competencies. Teaching was not to the individual, but the individual was required to contribute to the learning process.

Thus, the learner shifted from a recipient to a more active participant in the learning process. Provided with statements to describe behaviors that incorporate an understanding of content, now the participant could be asked to demonstrate some understanding of the content by testing or other methods. While there was no design for a "failing grade" to block receipt of CME credit, an attempt was made to state the successful outcomes.

The teaching role remained central to the presentation of CME activities. Teachers had to be experts in content, but also had an obligation to consider ways to help the learner meet appropriate objectives or goals. Extending formats beyond the primary use of lectures included opportunities for skill development or discussion groups. Teachers had more responsibility for defining the background of the learners and needs of the group to enhance the probability of application of learning products in practice.

The institution remained the central power in formulating the direction of CME, although with a change in the relative role of the learner. Formal offerings maintained their dominance in the marketplace, with institutions determining when and where they took place. The planner was the institution's agent with a role expanded by the inclusion of more negotiating for and with the learner. Accreditation agencies found that a shift to defining products expected of learners updated their standards beyond traditional planning, shifting the balance between all of the stakeholders, especially as a demonstration to the public.⁸

The shift to defining the products of learning required planners to provide a more explicit definition of the direction that teaching would take. Behavioral objectives described the behaviors that would result from full participation in a learning activity. Planners negotiated between teachers-as-experts and the expected learners. Further, planners provided a systematic process, generally called needs assessment, to identify learner needs. Planners normally helped in the development of statements to describe the expected outcomes of the learning for planners, teachers, and learners.

While this evolution shifted the negotiations among the three groups, careful plans to make learning outcomes explicit and measurable were difficult to implement, time consuming, and required a careful collaboration between planners, teachers, and learners. Many planners found a lack of cooperation between stakeholders, or an unwillingness to commit time and energy to outline learning products and design testing mechanisms. Many

institutions asked for more efficiency to maintain measurable products of CME such as number of programs or tuition income. Objectives are for groups of people rather than individuals. Presently, testing is rare, and physician participation is technically voluntary. Receipt of CME credit is not dependent on successful completion of most programs, but, rather, is based on attendance. In the day-to-day CME system, objectives often take the tack of providing a general statement about the content or overall goals. Some planners note a preference for generic objectives suitable for many purposes. Accreditors and other regulators have come under heavy criticism for maintaining their stance that the goals for a group of learners and their attendance adequately account for what we know today about change and learning. It is troublesome that recent exciting CME research is not reflected in these kinds of regulations.

Planning for Individualized Learning

The impetus to move beyond traditional educational formats and the demonstration of products of learning comes from new ideas about learning that better account for the needs and processes of individuals as well as systems. Traditional rote learning has not proved to be a highly effective lifelong learning tool for physicians; rote learning has also not been viewed as a highly effective backdrop for many problem-solving situations. While measurable outcomes have emerged as a new central theme to improve lifelong learning for physicians, this focus has often not addressed individual learning needs or application of learning in specific situations. Institutional interests in retaining models that place the institution in a central role and require few resources relate to profit from educational events and from practice referral relationships with learners. Although a sense of contributing to the enhanced effectiveness of physicians is on the list of institutional concerns, it is usually not at the top. However, incentives are shifting. Profits from meetings are decreasing for many providers because of the Food and Drug

Administration's influence, decreased pharmaceutical profits, increased competition from other institutions, and the potential decrease in physician income. Leaders in managed care are dictating very careful use of procedures and hospitalization. The new parameters lessen the power of referrals, and change what physicians must learn to be useful in their organization. Learners are demanding more practical, clinically relevant content that addresses their own specific needs.

Educational planning models that address the learner's specific need are based on a discovery approach to learning. In a discovery mode, each learner defines the clinical problems or questions in a refined individualized system of needs assessment with measurable outcomes.³ The learner and the planner negotiate individualized expected outcomes and the methods and materials that will produce these outcomes. These discovery or individualized approaches to planning are also called process planning models. The models are cyclical and ongoing, rather than episodic, which is characteristic of more traditional models. Examples of process planning models in CME include problem-based learning, individualized learning programs such as Maintenance of Competence Program (MOCOMP), and individualized, prescribed remedial CME programs.^{5,6,10}

Planning based on the processes of learning acknowledges that learners approach any learning task with different experiences and with conceptual frameworks in various stages of development. Because of this variation, a single set of measurable outcomes for a group is not assured. Instead, instruction is based on what research has demonstrated regarding the organization of memory as conceptual networks. Objectives focus on each learner's needs; content links to prior knowledge. The learner chooses the sequence, methods, and materials of instruction as well as the rate and occasion of learning. Learners may choose to participate in a group activity, perhaps with individualized objectives that are not the same as those presented in the program brochure. Planners and/or teachers may play a

support role in the process of defining ways to learn.^{10,11}

Clinically, relevant problems have gained in importance as the starting point for CME. Central to the process, learners are active and involved in the emerging changes. When learners collaborate in defining the clinical question or problem, the desired outcome, and the methods, rate, and sequence of educational experiences, learner satisfaction and the adoption of new knowledge, skills, and attitudes increase.

The teacher's role supports and facilitates the learning program or contract outlined by the learner. Part of that role is as an expert in helping to place information in perspective. Another is to coach behavior. One other aspect is to point toward additional kinds of resources. Teachers no longer define what is important; instead, the subject matter is placed in context by each individual. Still critical to learning, the teacher is no longer the source of all answers.

The institution provides a setting that may house resources including planners, teachers, and information sources. When learning processes are integral to their mission, institutions value individual gains rather than program numbers. Individual gains, for example, may link to institutional mandates in quality of care issues.

The planner's role is one of negotiating among, and building a consensus with, the stakeholders in the diagnosis of the educational opportunity, organization of an approach to address the problem, and evaluation of its effectiveness. In order to make the shift, planners must have a background in adult learning, adult development, and CME. Skills to support individuals mapping out learning plans include understanding changes in stages of professional development and the accompanying learning interests; knowing how adults learn and why; and identifying elements that shape change as well as characteristics of successful changes. Institutions and planners have begun to pay more attention to the individualized process learning models because the outcomes produce (1) more prolonged and lasting incremental change,

(2) more commitment to institutional agendas such as the need to shape practice patterns, and (3) more learner commitment to the process to change. In addition, individualized learning approaches may strengthen the learner's relationship with the institution and, thus, may reflect positively on the institution. The process of individualized program planning is an investment in future change on the part of the planner for the institution, learner, and teacher with results accruing to the public.

Total Learning Systems

Many authors believe that total learning systems are the next step in the evolution of planning. Total learning systems provide a structure to demonstrate accountability by each individual in the healthcare system. As reformers push for lower costs, capitation, and managing patients within closed systems, physicians are pushed to respond to new mandates while maintaining the quality of care.

These same pressures for seamless healthcare systems lead to the development of total learning systems. CME stakeholders are becoming integrated into systems where learners, teachers, planners, and institutions, as well as the public, come together for the purpose of improving patient care and reducing healthcare costs. While the shift to the learner as a central component of the learning system is a big step forward, a learning environment must address the needs of all stakeholders.^{3,12-15}

As its name suggests, the planning and development of total learning systems incorporates aspects of all previous planning models. While the concept of developing total learning systems has evolved by means of the synthesis of these models, they have yet to be fully developed in healthcare institutions. The principles of continuous quality improvement and the principles of educational change are examples of planning models used to develop such systems. Industry has held up some examples of the evolution toward learning systems, usually based on the production of a

specific product. One of the problems with translating these ideas to the health care system has always been that its products are so difficult to define in a simple way. Sophisticated attempts have begun, with many attempts in the planning stages.

Healthcare organizations have attempted with varying degrees of success to adopt continuous quality improvement models. Many healthcare providers are currently working to develop integrated healthcare systems. The healthcare organizations that have the most interest in developing total learning systems are closed and mature systems, such as, among others, the Kaiser Permanente, Group Health/Puget Sound, Harvard Community Health Plan. The development of the "report card" by the National Committee for Quality Assurance/Health Plan Employer Data and Information Set (NCQA/HEDIS) is one example of an attempt to provide clinicians and institutions with feedback with the potential for diagnosis and adaptive educational events to follow as a piece of a total learning system.¹⁶ Typical barriers to the development of such systems are open fee-for-service medicine payor structures, traditional medical staff roles and cultures, and the lack of linked electronic data.

When planning in a total learning system uses continuous quality improvement principles as a backdrop, learners function within a learning environment that is self-regulating. The learning system depends on the clinical care system's ability to address customer (patient/payor) needs, to gather accurate data, to use control charts and other tools to monitor, and to improve overall performance within the system. Learners receive continuous feedback on performance and assist in developing or applying algorithmic and heuristic learning processes to improve their performance. A key to the development of a total learning system is the retrieval of data and diagnosis of learning problems. Individualized processes evolve to facilitate learner adaptation. All aspects of educational sequencing and presentation may vary; learning styles and materials are adapted to the learner.^{3,15}

Total learning systems also may build on models of educational change. A learning-as-change model identifies new roles for institutions as CME providers. Planning based on an educational change model identifies environmental barriers and opportunities, maps configurations and linkages of CME stakeholders, develops resources, and implements changes that lead to transactions for adopted changes.^{17,18}

The attractiveness of total learning systems to all stakeholders includes (1) more prolonged and lasting incremental change to promote institutional agendas, (2) more learner commitment to the process of change and to the institution, (3) more learner success based on accomplishment of individualized goals, and (4) more individual learner satisfaction with career and with lifelong learning. Planners and teachers reap the benefits of working with productive learners. The public receives the benefits of improved healthcare.

In a total learning system, the learner, the teacher, the institution, and the planner collaborate to continuously identify and diagnose problem-based learning opportunities, to plan appropriate educational interventions, and to provide feedback on results of the intervention. The role of the learner is to participate within an institutional setting with commitment to the effective and efficient delivery of healthcare within that system. The focus has shifted from the planner and teacher as facilitators of change to the learner as the individual responsible for making institutional changes. The shift from process planning to a total learning system makes clear that the learner is central to planning, but the other stakeholders, teachers, institutions, and planners must function effectively in support roles. A clear vision of the necessary change is critical. Experience, with specific feedback, is a key element to support the defined direction of learning. Learners are accountable, but accountability is also evident throughout the system.

Teachers in a total learning system are those who can contribute to the learning plan set up by the learner. Teachers may include the learner

him/herself, the planner, colleagues, experts in the field or in other fields, institutional representatives, patients or others in the public, as well as any individual who can help solve a problem. Experts will always serve as teachers. Lectures will continue to play a role in the system. However, the nature of the learning system predicts a small role for traditional, formal learning activities, and a more expanded role for direct, personalized interaction that addresses specific problems.¹²

Institutions form the fabric for development of total learning systems and depend on learning to promote efficient and effective patient care. It becomes more difficult for an institution to provide learning events for those outside the institution when learning needs are defined within the context of the institution and data from the institution shapes the feedback. The ability of the institution to provide feedback based on outcomes is an important aspect of the negotiation between the learner and others. Learning systems do not limit learning to physicians working alone on individual projects. Group activities, including lectures, may be among the options available; however, the focus remains on the learner for individual assessment of needs and ways to address those needs.

The roles of the learner, teacher, and planner become tied in terms of (1) the development of algorithms and heuristics that guide the learner in practice and (2) the continuous feedback on performance. Whether planning for individuals or groups, the planner must consider all stakeholders. The planner must bring principles of adult development, adult learning, and change theory to bear for solving learner problems. Development of self-guided curricula, stages of professional development and their impact on learning, ways that adults learn and their motivations to continue, stages of change, and a system that supports change are only a few of the pieces of critical knowledge, skills, and attitudes essential to planners in a total learning system. Meeting-planning remains as one small part of the work done by a planner. Working in a role central to the institutional mission and

close to change processes are prerequisites for an effective planner.

Implications of Movement toward Learning Systems

Nowlen describes continuing education as a double helix. One strand is the societal expectations and social mores. The other strand encompasses individual abilities, skills, and experiences.¹⁹ The entwining of these strands depicts the evolving relationships of CME stakeholders as they begin to create common goals through healthcare reform. The public's expectations and social mores about healthcare have been changing radically. Individuals who make up institutions are trying out ways to develop and adapt their skills and abilities to meet these emerging societal needs.

In order to meet the needs of institutions and of the affected public, both learners and teachers will be more accountable. A clearer definition of perceived gaps between current and desired states of skills and abilities certainly will be required. As more is demanded of learners, learners will demand more of their learning experiences, setting high standards for the outcomes of learning experiences.

Institutions are working toward better integration to meet the needs of all of the stakeholders, including their own. Some institutions see these forces as their mandate to make the huge jump required to become a learning organization. A learning organization requires continuous review of goals to frame questions; defines expectations of each member of the institution; actively uses feedback loops; and continuously evaluates the change process. While many institutions have embraced the concepts of a learning organization, only modest action has occurred to date. Some account for this by the complexity of the actions required to achieve this state. While the actions and tasks are complex, limited resources will continue to shrink. Institutions may not find time or may not find it helpful to evolve through a number of stages on the planning continuum; instead, they may be forced to jump forward quickly. Accrediting bodies,

acting as a liaison between the profession and the public, already are challenged to reduce barriers to institutional movement along the continuum of planning models.

Within the framework of institutions, CME planners must weave the strands of the double helix together, matching up societal expectations and social mores with individual abilities and skills needed to meet these expectations. If planners are to retain a central role in CME, or whatever replaces CME, creative learning options must emerge. Planners are already in a position to demonstrate learning effectiveness by outcomes evaluation, support of individualized needs assessment, creative use of technology to answer questions, and effective use of experts in health-care to place information in perspective. Planners must continue to develop their skills, supported by their institutions and by their professional organizations. The Alliance for Continuing Medical Education, and the Society for Medical College Directors of Continuing Medical Education, as well as other specialty societies, are examples of places to share expertise, thinking, and skills.

Institutions that have moved toward a learning system talk—with intensity and turbulence—about the giant leap. There are not benefits for all; some positions will become obsolete and demands for great changes will be made of others. Learners, teachers, and planners are already being asked to push beyond customary limits to conceive of a system that makes all members accountable. Institutions may—perhaps more than once—change shape and may change goals. Members of the public are not only asked to be a partner in grading the healthcare team, but are asked to become more active and responsible members of the team. Why has this shift met with so much talk and with only modest action?

“When a practitioner sets a problem, he chooses and names the things he will notice... [The] practitioner selects things for attention and organizes them, guided by an appreciation of the situation that gives it coherence and sets a direction

for action.”²⁰ That translates to mean that you can only ask questions for which you already have an answer. The same theme pertains to institutions in this case. There are no obvious answers, and we have no models to follow. We do have the beginnings of experience to use; we do have a number of creative ideas to follow. Not all the ideas are new. Knowles and Knox, among many, have talked about needs assessment for several decades.^{7,21} Many of the tenets put forth in the adult education literature about the “perceived gap” between the current state and the desired state as the beginning point for learning are useful. The new CME paradigm was one result of years of thinking and negotiation among many in the field.²

What will it take to make the shift? Courage, desire, and a willingness to deal with uncertainty are essential. As planners, we can play a critical role in the evolution of total learning systems. Boundaries must decrease and shift. New alliances with stakeholders must form. Access to CME must change. The first change is one of attitude. The second step is to be ready. Professional organizations within the field, as well as organizations involved with CME, help shape attitude. We need to work within our organizations and institutions to create a forum for thinking about what might be rather than to report what is. The ACME Professional Self-Assessment Program²² is one way to begin a system within the field that pushes planners to examine their role and to build skills that an institution will value. We, as planners, must play a central role in the development of a new vision of learning, and we must shape a new role for ourselves near the center of change.

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