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A GROUP APPROACH TO DEFINING ELUSIVE INSTRUCTIONAL OBJECTIVES*

T JOSEPH SHEEHAN †
School of Medicine,
Case Western Reserve University

Lack of precise and acceptable statements of instructional goals may account for the uniform lack of success in evaluating clinical performance across the health professions Instructional goals, whether they are stated as performance characteristics, behavioural objectives, or criterion behaviours, represent the blueprints for building the teaching programme and designing the evaluation instruments A card-sort technique was used to focus faculty attention and discussion on statements which described important dimensions of clinical performance Although other methods might work so long as they actively involve the core of faculty responsible for the major portions of the teaching and evaluation programme, the card sorting techniques did tend to minimize interpersonal and inter-departmental differences and forced a research for common understandings

It is widely believed by educators that before a systematic approach to education can be evolved, certain preliminaries must be accomplished The absolutely minimal prerequisites would include methods for organizing, implementing, and evaluating instructional activities Realizable plans for instruction and evaluation, however, obviously presume clear delineation of goals Certain types of goals are not only easy to articulate, but also to teach and evaluate, e g , the common goal of memorizing large bodies of information Other kinds of goals, considered to be more worthwhile are more enigmatic Although the editor of a college catalogue or the essayist waxing eloquent about the goals of education can be convincing, usually careful analysis reveals that such statements are too broad and at too high a level of abstraction to be useful to the teacher or evaluator The unfortunate result is that most often the teacher reverts to those lower-order instructional goals which are more obviously teachable, or even if he does teach at a higher level, his evaluation undermines his efforts by aiming at the more easily measurable lower order goals—the trap that things that count are those that are countable And this is not without effect on students' learning habits

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†Present address School of Medicine, University of Connecticut.

This paper is concerned with the problem of delineating and articulating higher-order educational goals in the practical setting of a medical school's curriculum committee where previous attempts to define goals in the area of *clinical competence* seldom got beyond the level of listing subject matter by topics Such lists are hardly adequate to guide either students or teachers because the good doctor has much more than a data bank of medical knowledge, appropriate retrieval and use of such knowledge is the heart of the problem

The problem of defining objectives in clinical medicine is further confounded because there are so many different medical specialities It would be natural, for instance, to expect numerous differences in kind and quality among the objectives submitted by departments of psychiatry and surgery Because of the mind-body polarization represented by these two specialities, it is much easier to argue about differences than to explore commonality Communication difficulties can effectively interfere with decision making The aim of this paper is to describe a method intended to ease such problems in communication across different specialties, allowing the identification of goals common to all specialties and above all, practical discussion about the actual education of medical students in terms of higher level goals

PROBLEM

The work was carried out in the context of designing an educational programme in clinical medicine that might have thrust and continuity across the boundaries of the various medical specialties The first efforts were directed toward creating a set of common objectives acceptable to professors of Medicine, Pediatrics Surgery Obstetrics, and Psychiatry Specialists from any two of these groups commonly consult on a pat ent's problem but rarely plan an educational programme together * For such a diverse group to agree on a common set of goals within a limited time period, it was felt that the method used to define and communicate objectives would have to be carefully focused, get to the point quickly and involve everyone in an active way

*The outstanding exception being the basic science programme during the first two years of medical school at Case Western Reserve University Subject committees composed of representatives of all departments have full respon sibility for the teaching programme

METHODS

Each of eleven clerkship directors,* representing the teaching specialties mentioned above, received a memo with the following request

> MOST ESSENTIAL SKILLS In your opinion and in whatever terminology you choose, state the five most important skills (not necessarily psychomotor skills, but skills in the broadest sense of the term) that *medical students* should learn on *your clerkship* You may want to discuss this with your colleagues and gather their opinions Such a compilation should help us to cone down on specific evaluation problems I realize that you have already listed some objectives in your 'critiques' This exercise is different in two respects i) it asks for five skills that are unique to your clerkship and ii) it asks for the five most important

In an attempt to focus attention on all the objectives the following procedure was developed Each of the fifty-five objectives was recorded on a separate 3″ x 5″ card and coded so that its writer, as well as the specialty represented, would be anonymous By minimizing the effects of personality and speciality differences, the clarity and merit of the objective as stated could become the centre of attention The deck of fifty-five cards was duplicated and at a subsequent meeting each committee member received a complete deck and was directed simply 'to examine them carefully'

After briefly flipping through the cards, one member of the group promptly asked, 'What categories should we use to sort these cards?' The reply was that the cards were not necessarily to be sorted but could be

After twenty to twenty-five minutes of silent activity—head scratching, sorting, grimacing, smiling, with all the appearance of seventeen or eighteen simultanous solitaire games—the members of the group began to speak The original speaker argued that all objectives would fit into one of three categories, 'humanism, scientism, or charlatanism ' Under 'humanism' he included objectives relating primarily to attitudes and interpersonal relationships and under 'scientism' those stressing rigorous and scientific approaches to the diagnosis and management of patients' problems 'Charlatanism' was probably suggested to be funny, but it

* There are three clerkships in Medicine three in Surgery, two in Pediatrics two in Obstetrics Gynaecology and one in Psychiatry

also served as a gentle reminder that, in his opinion, 'how-to-do-it skills and technique' did not merit separate listing as high priority objectives. The controversy over training versus education had been raised once more, but the protective anonymity of the card code was effective and humour, instead of rancour, was the spirit in which the group discussed that issue.

Another participant had sorted his cards by creating the following categories:

1. Base fund of knowledge (three objectives).
2. Communication with patient, including recording of history (eleven objectives).
3. Physical examination and laboratory (four objectives).
4. Organization of data and differential diagnosis (eight objectives).
5. Correlation and problem solving (seven objectives).
6. Management of the patient (ten objectives).
7. Attitudes and doctor-patient relationship (seven objectives).*

One member of the group divided the cards into two packs, the first for skills that every student should and must acquire and the second for those goals that are 'not worthwhile and cannot be taught; the latter would include attitudes, thinking, communication, and responsibility.' Discussion was lively as each participant, leaving his unique mark on the deck of cards, expressed his views as to what could and could not possibly be taught, and what was and what was not important in the area of clinical medicine. Is it possible to teach the attitudinal and higher-order skills at all?

As each analysis was presented, it was recorded on a chalk board and the ensuing discussion revealed varied philosophies of education, learning, and teaching. Gradually, it became obvious that many of the categories, though nominally different, were essentially similar and the conclusion that there were certain aims of instruction to which all could agree became more and more evident.

The next step was to put the objectives to work immediately. The author therefore suggested that one of the proposed sets of categories be adopted so that the approaches to evaluation could be studied. A set of four categories was finally agreed upon, and the group members assigned themselves to one of the following areas:

*This is a total of 50, not 55; five objectives were not classified.

1 Attitudes and values
2 Data collection, including laboratory, history, and physical
3 Problem-solving, including the correlation, integration, organization, interpretation, and analysis of data
4 Responsibility for patient management and treatment, including the development and execution of a therapeutic regimen

Each sub-group was asked to study the objectives within its area and 'to develop five or six qualitatively different methods for evaluation in that area' which could later be presented for analysis and discussion by the rest of the group

At the next meeting, three weeks later, a representative from each of the sub-groups was asked to report The spokesman for the 'problem-solving' group made the following suggestions First, he distinguished between basic medical knowledge, which he felt was measured adequately by present testing devices, and functional medical knowledge, which is more difficult to assess Assuming a student does have a fund of basic medical knowledge, two questions arise first, *can* the student use the knowledge he has even if the situation is artificial or contrived? Secondly, *will* he use it in real-life situations that are free from artificial pressures? In the latter instance, attitudes are especially important Methods for measuring performance in contrived situations are under development (1, 4), methods for measuring performance in non-contrived situations are fraught with pitfalls

One method of evaluation suggested by the 'problem-solving' group was the use of the medical record The medical record could serve as an approximate product of what the student did on a particular case—his reliability and thoroughness in collecting appropriate information, as well as his ability to use such information in solving the patient's problems The potential usefulness of the computer approach was also discussed as an evaluation tool (2, 3)

The spokesman for the 'history and physical' group commented that written examinations were inadequate for measuring the actual manipulative aspects of doing histories and physicals To remedy this, he suggested the physical presence of an observer during the history and physical examination of a patient unknown to the student, preferably in a hospital other than the student's teaching hospital It was pointed out that the patient himself must be viewed as a variable factor and that even the same patient's response to the same student will vary at different times according to that patient's opportunity for practice in reciting and describing his symptoms Other suggested observational tools included the use of audio and video tapes to sample student performance The

most fanciful idea was a 'switching box' by which the performances of as many as eight students could be monitored simultaneously

Gradually, it became easier to classify each approach to evaluation as being primarily product or performance oriented recognizing that what a student does with the data he gathers from the history and physical examination is quite distinct from the way in which he gathered the data to begin with Would it be preferable to use a product rather than a per formance approach to evaluation? One proposal was to use both approaches in two stages examine the end product first, and if the end product is found wanting, a more expensive process evaluation could be made to determine why the product might be deficient Such a two-stage strategy would be more economical of the teacher's time The group on 'attitudes and values' was not able to meet in the short time between the two meetings although its members were often able to point out attitudinal factors involved in the techniques suggested by the 'problem-solving' and 'history and physical examination' groups They did suggest, however, that a possible start might be made by examining the more obvious ways in which attitudes influence performance The 'student responsibility' group met but had difficulty in determining their task

OUTCOMES

All sub-groups recognised that many of the original objectives were ambiguous They wished, therefore, to redefine their objectives, first of all, at a level of detail that would be meaningful to all clerkship groups They implied that several attempts at defining objectives might be necessary and that, in the beginning, extremely macro and extremely micro levels would be avoided Secondly, as a result of their experience in thinking about evaluation, they decided that the objectives would be stated with a view towards their usefulness not only for teaching but also for evaluation Acceptable definitions have since been reached, but they are undergoing continuous revisions as the following criteria are continually used to assess their adequacy i) clarity to other specialists to teaching staff, to students, and ii) usefulness in guiding instruction and evaluation

CONCLUSION

The card sort method was relatively successful in involving a diverse group in the process of defining, discussing, and communicating instructional objectives Common starting points were determined within which

all groups felt uncomfortable, allowing the approach to objectives to fit the common mathematical notion of successive approximation Educators have often been naive in their implicit belief that the first attempt to produce objectives and means of evaluation should be final products The importance of acceptable first approximations, however, especially in a complex field, should not be slighted

One final note about content most of the goals agreed upon by our group as common to diverse specialties have been of the process or performance variety, as contrasted to content or knowledge goals Obviously, the student does not perform in a content vacuum Since this is so, the subject specialist in the person of the cardiologist, the hematologist, the gastro-enterologist, and others must articulate how these processes (viz, collecting organizing, and synthesizing data, solving problems, and being sensitive to the feelings and needs of both patients and staff) apply to the content supplied by their disciplines All must recognize, then, that process without content is empty and content without process is blind

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