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ABSTRACT

The purpose of the W.K. Kellogg Foundation Conference was to explore the nature, potential, and operation of Interprofessional Continuing Education in the Health Sciences with leading continuing educators. The proceedings of the conference consist of background papers, work group reports, and summaries of dialogues between professional personnel. A conference summation and a conference evaluation are included. The appendix contains a program, rosters of resource personnel and participants, an evaluation form, and a bibliography. (RS)

Proceedings of a Conference on Interprofessional Continuing Education In the Health Sciences

The University of British Columbia
Vancouver 8
British Columbia

W.K. Kellogg Foundation Project Report No. 2

PROCEEDINGS OF A CONFERENCE ON INTERPROFESSIONAL CONTINUING EDUCATION IN THE HEALTH SCIENCES

W. K. Kellogg Foundation Project Report No. 2

Adult Education Research Centre
and
Division of Continuing Education in the Health Sciences
University of British Columbia
Vancouver, 1972

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I. INTRODUCTION

The Kellogg Invitational Conference on Interprofessional Continuing Education in the Health Sciences (ICEHS) was held at the University of British Columbia on June 4, 5, and 6, 1972. The purpose of the Conference was to explore the nature, potential, and operation of ICEHS with a group of leading continuing educators from several health sciences. To this end, invitations were extended to forty continuing educators in dentistry, medicine, nursing, and pharmacy. Thirty-two of these attended the conference, with fourteen from the United States and eighteen from Canada. Those participating included ten each from medicine and nursing, eight from pharmacy, and four from dentistry. In addition there were six continuing educators in the health sciences from the University of B. C. in attendance.

The Conference Planning Committee, which included six members of the Division of Continuing Education in the Health Sciences and three members of the Department of Adult Education, specified six objectives for the Conference.

1. The participants will be informed about and discuss the development and nature of ICEHS. Topics to be introduced for the discussion are: (1) origins of ICEHS (2) developmental forces (3) current status (4) concepts (5) organizational and program patterns (6) trends.
2. The participants will identify and define the barriers to the development of ICEHS programs for shared learning. The sources of these barriers are classifiable among the following general categories: (1) organizational (2) professional (3) legal (4) educational (5) informational (knowledge) (6) conceptual.

3. The participants will identify, analyze and outline strategies and solutions for managing the problems created by the identified barriers to ICEHS. These strategies and solutions are likely to be based on such topics as: (1) different knowledge bases in the health care professions (2) uniqueness of each health care profession (3) knowledge diffusion (4) adoption of innovations (5) education as a change strategy and (6) developing education teams in the health care professions.

4. The participants will discuss the learning activity and the adult learner as essential components in knowledge diffusion, adoption of new behaviour skills, and improved patient care. Topics to be presented for discussion are: (1) the adult learner (2) the learning process (3) types of learning (4) implications for instruction (5) knowledge reformulation (6) evaluation.

5. The participants will identify learning needs of continuing educators in the health sciences.

6. The participants will identify and discuss principles and procedures for program planning in ICEHS programs. An opportunity will be given to apply these procedures and principles.

The conference began with a reception at the Adult Education Research Centre on Sunday evening, June 4. The sessions on June 5 were concerned with the first three objectives. A combination of lectures, dialogues and general discussions were used to present and define basic information. Approximately half of the day was spent in small work group sessions seeking to identify and clarify barriers to ICEHS and to arrive at strategies for overcoming them. The sessions on June 6 dealt with the final three conference objectives through processes similar to those used on the first day.

The deliberations and conclusions of the conference are presented in the following pages. The two introductory papers presented by Dr. J. F. McCreary and Dr. John R. Evans identify the background and barriers to ICEHS. The

dialogue with Dr. Evans which helped to clarify the nature of these barriers and to identify potential strategies to overcome them is then summarized. This is followed by a summary of the dialogue that Dr. Thomas had with Dr. Coolie Verner about the characteristics of the strategies for introducing change with the adult learner.

As much of the Conference was devoted to work group acitivites, the reports of those groups were summarized and are presented together with the appropriate dialogues. The conference summation given by Dr. McCreary is followed by the results of an evaluation form administered at the conclusion of the conference.

The conference would not have been possible without the generous support of the W. K. Kellogg Foundation, and the Planning Committee wishes to extend its thanks to the Foundation for that support.

Finally, the compilers of these proceedings take full responsibility for omissions in this conference summary. It was not deemed advisable by the Planning Committee to submit a verbatim record, rather, what is presented is the summary of a conference of practicing continuing educators concerned with their duties and perplexed by their emerging responsibilities for interprofessional continuing education in the health sciences.

II. BACKGROUND PAPERS

BACKGROUND TO INTERPROFESSIONAL CONTINUING EDUCATION IN THE HEALTH SCIENCES

J. F. McCreary

It is my pleasant duty this morning to attempt to outline the reasons why we are meeting at this University, at this point of time, to discuss the subject of continuing education in the health sciences. In order to do so I must attempt to sketch as briefly as I can the events that have led up to this meeting.

The Faculty of Medicine at this University came into being in 1950, and with the exception of four medical schools which have been developed within the past five years, it is the youngest of Canada's sixteen medical schools. The Faculty was introduced into a relatively young University which had started operating in 1915 and in which there were not many health professional schools of long standing. The exception to this was the School of Nursing which had been instituted in 1919 and was the first School of Nursing to be established in the British Empire. The Faculty of Pharmaceutical Sciences had been in operation about five years prior to the Faculty of Medicine. There was no Faculty of Dentistry and no School of Rehabilitation Medicine at the time that the Faculty of Medicine began operating.

After receiving the advice of outstanding medical educators from various parts of the world, the University committed itself to the establishment of a Faculty of Medicine with its clinical facilities on the campus of The University of British Columbia. Funds for this development were not available

in 1950 and the Faculty of Medicine was put underway under something less than ideal circumstances. Basic medical science teaching was undertaken at the Vancouver General Hospital - an 1800 bed hospital used by nearly a thousand physicians.

In 1959, coincident with the appointment of a new Dean, the Board of Governors empowered the Faculty of Medicine to begin the design of the hospital to be constructed on campus. A year long study was instituted by members of the Faculty into the nature of the teaching facilities which had been constructed in recent years for medical education on this continent and in Europe. Coincident with that study, enquiries were directed into patterns of health care which might bring about changed responsibilities in the future for faculties of medicine.

A number of phenomena were identified at that time - thirteen years ago - which have modified the planning for this University and which have become very much more obvious since that time. It was clear that we were spending a great deal of money on health care in Canada and were not receiving value for the money expended. This situation has worsened rapidly in the intervening years and it is now being drawn forcibly to our attention by governments. Canada spends a larger percentage of its gross national product on health care than any other country in the world. Costs are escalating with great speed, worsened by the fact that government has introduced a totally open-ended form of medicare. Any individual can demand any amount of care which he may imagine he requires. Any physician can provide any amount of care which he wishes and funds will be provided by government to foot the bill. The situation is made worse by the fact that payment for health care can only be paid on a fee-for-service basis and only to physicians and not to nurses or other individuals who may be less costly to educate. The statement by the Economic Council last year to the effect that, if costs of health care and education continue to escalate at the present rate, they would absorb the total projected gross national product by the year 2000 served only to sharpen general awareness that we face a serious national problem.

Canada's economic problem is worsened by the fact that for many years acute hospital care was paid for from the public purse, while all other forms of health care were paid directly by the patient. Under these circumstances, all the incentives were directed towards the overuse of hospitals. Any community which did not build the biggest and most expensive hospital it could wangle out of government was foolish because the federal and provincial governments would provide two-thirds of the construction costs of the hospital, and after the hospital was built they would provide all the costs of operation. Physicians were encouraged to treat their patients in hospital because they had the benefit of a team of health workers to assist them in establishing the diagnosis and applying the treatment at no cost to the patient. And the patient preferred to be treated in hospital because it cost him only $1 per day, including all laboratory tests and medication, much less than it would cost him to be sick at home. Small wonder then that Canada was spending a much larger percentage of its health dollars than any other country in the world on acute care in hospital, and small wonder that our total spending on health care was so high.

Another phenomenon noted in that year of study which again has become increasingly obvious was the fact that with an increasingly sophisticated population demanding more health care, and with the economic barriers to seeking health care being progressively removed, the supply of physicians was already becoming inadequate for the amount of primary health care which was demanded. This situation has progressively worsened.

Even the most cursory examination of primary health care reveals that there have been virtually no changes made over a great many years.

The physician still provides by himself, virtually all the services which his patient requires despite the fact that there has been a tremendous increase in the number of other health professionals. At the beginning of this century three of every five health professionals were physicians and the others were nurses. In the year 1970, of every ten health professionals physicians constitute less than one. There are now 36 separate occupational categories in the health

professions and there are over 200 separate types of career. In the United States the general population rose by 29 % in the period from 1950 to 1966, but the number of individuals devoting their careers to health services rose by 90 %. Despite this dramatic growth of health professionals they have not been integrated into primary health care systems.

Also contributing to the problem of primary health care is the dramatic change which has taken place over the past 25 years in the nature of our physician population. We have used a general practice oriented system of health care for many generations. This has been possible because approximately 80 % of the graduates of our medical schools have elected to do a family practice and approximately 20 % have done specialty training and have served to support those in primary health care. This had provided a very satisfactory system of health care and as recently as 1945 the ratio of general practitioners to specialists was approximately 80 to 20. Immediately after World War Two, however, the number of individuals who were interested in doing a family practice diminished. More and more graduates moved directly into specialty training after receiving their degrees. As a result the ratio of family physicians to specialists changed rapidly and by the year 1960 the numbers were approximately equal.

Faced with these facts the University of British Columbia decided that its health professional schools should attempt to produce professionals better prepared to deal with these changing patterns of health care than had been true in the past. It was clear that governments, properly concerned that the health care provided to Canadians be of appropriate quality and within the nation's financial means, would dictate changes in the patterns of care that had evolved over the years.

While the exact nature of the changes to be brought about in the future is not clear, there are some obvious modifications required. The load of primary health care must be carried by a larger number of shoulders. It seems clear that the shoulders will not be those of physicians. Somehow the

primary care physician must find a way to divest himself of many functions which can be performed as well by others who are less costly to educate and can provide care at less cost. This has been achieved in the hospital situation and in public health clinics by the interaction of existing health professionals. That the various health professionals do not come together easily in unstructured primary care may be due to many factors.

It was the conclusion of the planning group thirteen years ago that one of the factors was the separateness of the various educational systems. The isolation in which we have educated physicians, nurses, dentists, social workers, pharmacists and others orients them towards a separate distinct role for themselves which reduces their compatability and their ability to work together. Under these circumstances this University dedicated itself to attempting to integrate the educational experience of the various health professionals in the hopes of producing a more compatible group of individuals who could face a reorientation of their responsibilities with minimum discomfort and fear.

There were other gains which it was hoped integration would achieve. A much more effective instrument must be forged to adapt educational policy to the changing health needs of the population. Universities have traditionally been slow in making changes in established educational policy and, in truth, there has been relatively little pressure on them to change. We had no clear idea of how many or what kind of physicians were required so we educated the number that was comfortable to us. Studies now underway will make such information much more available to us and there will be a demand for prompt response. The changes will not be confined to medicine. We now know that we have educated far too many nurses to a standard level and too few to accept significantly greater responsibility. It is clear now that the pharmacist has a larger role to play in health care than his previous education prepared him for. Thus, in attempting to prepare an instrument to respond to changing

needs, it must be broadly enough based to affect changes in education in all health professional groups and it may be necessary to produce entirely new types of health professionals.

In order to achieve this result certain processes were put underway at the University.

Organizational. Some means had to be found to bring the health science faculties and schools together into some form of organizational pattern. In 1967 an Interim Director of Health Sciences was appointed and a Coordinating Committee made up of the Deans of Dentistry, Medicine, Pharmacy and the Heads of the Schools of Nursing, and Rehabilitation Medicine was put underway. Also on the Coordinating Committee were the Heads of the Schools of Home Economics and Social Work, and the Head of the Department of Psychology. Thus, in a sense, the Coordinating Committee had a relatively small core of members all of whose students received their education within the Health Sciences Centre and also had representatives of schools whose students received part of their education within the Centre. In the past year two changes have taken place in this organizational pattern. The Interim Director of Health Sciences has been renamed the Coordinator of Health Sciences, which to my mind is a more descriptive title. In addition, that position has been separated from that of the Dean of Medicine and a new Dean of Medicine has been appointed and will take office on the First of July.

The Coordinating Committee meets at fortnightly intervals and generally acts almost as a small academic senate. Its function is to explore curricula and to determine those areas which, with modification, learning experiences can be made appropriate to various health science students. Further, the Coordinating Committee together with the Coordinator is responsible for the design and administration of facilities used by all faculties and schools.

Construction of Facilities. The construction of facilities has progressed relatively slowly. In general, it tends to be complicated by two factors. The first is that the facilities must be sufficiently large to house a total of 2400 students which represents the number in all the health professional schools when they have reached their full size. Secondly, in the design of facilities great care must be taken to ensure that each of the faculties and schools that will use the facilities have an opportunity to have input into the design process. The building which we occupy today reflects the University's philosophy in that it provides the formal lecture halls for all of the health sciences and the administrative heads of all faculties and schools are located on one open floor within the building.

Changing Attitudes. The final process which is still far from complete is the changing of attitudes to the point where shared educational experiences are totally acceptable to all concerned. Dr. Evans is going to talk about the problems associated with integrated teaching so I shall not dwell upon this other than to state that the whole process of changing faculty attitudes proceeds much more rapidly when, as happened in our case about three years ago, the students begin to clamour for it.

There are a few things that we have learned about the integration of teaching at the undergraduate level. One is that the mixing of students from the various health professions in a lecture hall or even in a seminar achieves very little in the way of modifying atttitudes. Such a procedure at best reduces costs by requiring fewer faculty members. However, the integration of students in a patient oriented treatment situation seems to be effective indeed. Even early in their professional school careers, students demonstrate an ability to present points of view characteristic of their professional groups, and these points of view are accepted by the others. It seems that there is an important principle here. Bringing the students together before they have donned the professional cloaks of dentists or nurses or physicians seems to be more effective than after they have graduated. Perhaps the commonality of all being

students is the important factor. We have found also that the three family practice units which have been developed present the most effective milieu for this type of joint clinical teaching.

Now I must trace a bit of the history of Continuing Education in order to complete the setting of the stage for this meeting. One of the findings of the planning group in 1959 was that, with an inadequate supply of physicians for the supply of primary health care forecast, it would be of great importance to maintain those who were available at the highest possible peak of efficiency. With new knowledge flowing out of research laboratories in ever increasing amounts, the problem of condensing this information into a form acceptable to the primary care physician was one that could only be met by the efforts of a medical school faculty whose task it was to maintain a constant review of the new literature. Although the faculty strength was still nominal in those early days, the Faculty of Medicine at The University of British Columbia decided to follow the example of Dalhousie University which had provided the leadership in Canada in accepting responsibility for assuming an active role in continuing medical education.

In 1960 a Department of Continuing Medical Education was set up under the able leadership of Dr. Donald H. Williams, one of the province's most respected medical consultants. Dr. Williams spent the greater part of a year in examining programs that were in effect elsewhere, in travelling the province to learn the perceived needs of physicians, and in examining Hospital Insurance records which could and did reveal that some of their real needs were not perceived by the physicians. The program was put underway in 1961 and has increased in volume and intensity since that time.

In 1968, the Department of Continuing Medical Education was dissolved and a Division of Continuing Education in the Health Sciences was initiated with active participation from Dentistry, Nursing, Pharmacy and later Nutrition as well as Medicine. Dr. Williams left the group to become an

Associate Dean of Medicine and Dr. H.O. Murphy became Assistant Dean of Medicine in charge of Continuing Medical Education. The group now consists of Mrs. Margaret Neylan from Nursing, Dr. E. J. Hyde from Dentistry, Mr. Gordon Hewitt from Pharmacy and Dr. Indrajit Desai from Human Nutrition in addition to Dr. Murphy. It is this group which will, in fact function as your hosts during these two days.

I think it might be useful to review the activities of the various professional groups during the academic year 1970 - 71 to give a quick look at the programs presented. If I seem to stress the medical offerings please bear in mind that Medicine has been in operation for over ten years and has developed a significantly larger variety of offerings than some of the other professional schools who have entered the arena of continuing education more recently.

Dentistry provided seventeen on-campus courses with 293 registrants. Medicine provided a total of 100 courses. Of these, twenty-two were on-campus courses of the traditional variety lasting an average of two days. Twenty-one were clinical traineeships, lasting anywhere from two weeks to eight months in individual clinical departments of the medical school. Fifty-four were based in community hospitals. In this province where the population is distributed in pockets in mountain valleys it is possible to reach the great bulk of the physicians by presenting courses in a relatively small number of community hospitals. This type of offering seems to be significantly effective and the percentage of local physicians attending is higher than generally expected. Part of this is undoubtedly due to the fact that local physicians have a major part to play in the design of the courses.

The Division also supplies consultative services to any hospital which desires them. In 1970 - 71 such programs were available on coronary care, newborn nursery management, and infection control.

A twelve program TV series was introduced during the 1970 - 71 year. It met with a mixed but generally favourable response. However, the role of television in continuing education in the opinion of the individuals responsible requires further study.

One of the most interesting and rewarding types of continuing medical education proved to be a by-product of an elective in the clinical clerkship. Dr. Murphy has organized twelve-week elective programs in 28 community hospitals and the offering has proven to be sufficiently popular that two-thirds of the medical students select it instead of working in departments in this school or elsewhere. The reports which are required on the teachers and the students in the community hospitals all stress the advantage to the physicians of participating in teaching activities. Almost without exception, reading of medical literature, ward rounds and educational activities generally increased among the hospital staff as a result of the presence of young inquiring minds with newer medical knowledge than that possessed by the teaching staff.

Twenty-one point nine (21.9) percent of the practicing physicians of the province attended one or more courses in 1970 - 71 and in a three year period 41.9 % attended one or more, suggesting that attendance is on a rotational basis.

Nursing produced seven on-campus and thirteen off-campus courses during the year, attended by a total of 1342 nurses. Pharmacy produced fourteen on-campus courses for a total of 237 registrants.

The provision of continuing professional education for the individual professional group is only part of the function of the Division of Continuing Education in the Health Sciences. There would be small value in graduating a group of health professionals dedicated to a team approach towards health care into a world totally unprepared to accept them or the concepts that they represent. Therefore, an important and increasing function of the group is the

development of interprofessional education courses designed to bring health professional together at the local level to examine common problems. Some of these courses such as "Care of the High Risk Newborn" have been presented jointly by Nursing and Medicine for Nurses and Physicians for as long as eight years. However, most of the interprofessional programs have been developed recently. In 1970 - 71, three courses of a total interprofessional character attracted 293 individuals representing all health professionals including chiropractors and the clergy. Also, courses presented by one or two professional groups combined with a multiprofessional approach attracted 1169 registrants. One of the most interesting aspects of Continuing Education in the Health Sciences will be a Mobile Instructional Resources Centre for small communities. It is a bus with three educational carrels. Audio Visual Instructional Media will provide instruction to all health professionals. It will remain in a small community for a few days to a week.

In all the activities of the Division of Continuing Education in the Health Sciences we have learned to lean heavily on the Department of Adult Education in the Faculty of Education. Drs. Coolie Verner, Gary Dickinson and Jim Thornton have cheerfully given of their time and expertise to our group of health educators and they represent the remainder of your host group.

Recently the Kellogg Foundation has provided a generous grant to the combined group in Adult Education and the Health Sciences to produce programs in the training of individuals in this field. This meeting represents the opening of this five year program. We believe that the goal that we seek is worthwhile and will contribute in some measure to the solution of some problems related to health care. However, as I stressed at the beginning we are embarked upon uncharted seas. We are grateful that we have in Vancouver for these two days the cream of the professionals interested in the field of continuing education. We sincerely urge your participation in the discussions of the problems to be faced in attempting to achieve a greater degree of compatibility among a group of professionals all of whom are dedicated to the same end but have somehow become fractionated and isolated from each other.

BARRIERS TO SHARED LEARNING

John R. Evans

It is fitting that this Conference sponsored by the Kellogg Foundation is being held at the University of British Columbia where such interesting and important examples of interprofessional education in the health sciences have been undertaken. Dr. Jack McCreary is certainly regarded as the "pioneer" of health science concepts in Canada and his public exhortations on this subject began before many of us had completed our professional training. It is also fitting that the application of the interprofessional concept to continuing education is being studied here since there are few geographic regions on this continent where such a serious attempt has been made to make continuing education a comprehensive and outward looking program. This Conference is fortunate to be able to draw upon the wealth of actual experience at the University of British Columbia in both interprofessional collaboration and continuing education.

There have been many invocations and articles extolling the benefits of interdisciplinary education and cooperation in the delivery of health services. If one looks carefully, however, it is difficult to find many examples of substantial collaboration in practice. Attempts to design and implement programs which could be very helpful to patients or economical in terms of the cost of both health services and health education are frequently impeded by apprehension or mistrust between professions. Usually the lack of commitment is not openly manifest but masquerades as problems relating to licensing, economics, and so forth. Since the underlying mistrust may be active but unexpressed, it is an awkward problem to correct.

Educational and service goals of value to the student and to the patient which depend on team efforts can easily be undermined by conflicts between the participating professional personnel.

The purpose of the session this morning is to study the factors which impede collaborative effort, that is the barriers to continuing education on an interdisciplinary basis. If the barriers can be clearly identified, it will be much easier to devise methods to overcome or bypass them. In keeping with the conference theme, this session should be a collaborative effort; I shall try to identify some problems and you will contribute solutions.

PURPOSES OF INTERPROFESSIONAL COORDINATION OF EDUCATION PROGRAMS

There are a number of obstacles to coordination of educational programs. It usually involves loss of identity with a single profession and of course loss of control by that profession. It requires an expenditure of effort beyond that needed for individual professional programs. It places certain constraints on the nature of the program particularly if the participants have very different backgrounds. What are the benefits to be achieved by shared learning which will justify these costs and limitations?

Compatibility of Functions and Attitudes of Health Personnel in Practice

Delivery of health care is a complex process. To carry it out with maximum effectiveness and economy requires the interaction and interdependent efforts of many different types of health personnel. The first purpose of shared learning is to prepare health personnel in the knowledge, skills and attitudes necessary to gain reasonable compatibility of their functions in practice.

This involves development of complementary rather than competing roles for each type of health personnel and a broad appreciation by all of the potential contributions of other professions. Through coordination of educational programs at various levels, the training can be focussed to a greater degree on health and less on individual professional goals; it can be carried out in an interdisciplinary framework to promote mutual respect and understanding; and it can include specific experiences designed to promote teamwork and collaboration in the delivery of health services.

Since both their education and their services are almost completely financed from public funds, it has now become a matter of public accountability for all the health professions to use their time and talents to maximum advantage and to delegate to others those tasks which do not require their type of sophisticated training. Dissipation of highly trained professional resources is particularly evident in fields such as primary care, mental health, health maintenance and the management of chronic diseases. By progressive reevaluation of professional roles, delegation of tasks to other professions and technologies, and revision of educational programs for the professions concerned, we should evolve progressively towards a system where the professional resources are used in accord with the educational investment. This requires coordination of educational programs, not only among the different professions but also between different branches of the same profession trained to perform specialized functions. A large measure of the redefinition of role of personnel in practice will be dependent on a coordinated approach to continuing education, since revision of role will be a recurring requirement several times during the professional life span of almost every type of health personnel.

Rationalization of Supply of Health Manpower.

A second justification for coordination of educational programs is the need to have a balanced overall effort in the production of manpower in the right numbers, the right types and specialties, and for the right places.

Manpower can no longer be considered in terms of single professions. It must be viewed as a total resource pool with substantial potential for substitutability and conversion of function to cope with unpredictably changing needs in the quantity, type and distribution of health services and the financial resources available to pay for them. A random or uncoordinated approach of each institution, profession or specialty has not given in the past, and is unlikely to give in the future, the desired numbers of each type of personnel. We have for example too few primary care physicians and too many specialists of certain types. We have too few dentists and rehabilitation personnel but an apparent over-supply of nurses in relation to conventional job opportunities. We have not achieved the geographic distribution to disadvantaged urban areas and sparsely populated regions.

Manpower forecasts are notoriously unreliable and the best that we can do is to appreciate trends of overproduction or underproduction, overspecialization and maldistribution. These trends must be constantly reviewed with feedback to the production and reorientation system, that is, the educational centres carrying out primary professional training, formal retraining and informal retraining through continuing education. An uncoordinated manpower policy in terms of quantity of personnel produced or the irrational proliferation of professions may well lead to wastage of public funds both in education and services and unhappiness for the student who is the victim of a misguided educational effort. Continuing education and formal retraining are rational approaches to meeting each newly identified health need by revision of the roles of existing personnel rather than by creating a new health profession with all the attendant delay and difficulties. These approaches provide a safety mechanism for the protection and rehabilitation of health personnel who are in oversupply or whose skills have been rendered obsolete by the changing system.

Efficient Utilization of Educational Resources.

The education of health personnel is perhaps the most costly of all types of postsecondary education. It follows that those responsible have a special obligation to ensure that the resources required are effectively utilized with minimum duplication of the same or similar resources for individual programs. Until recently, each profession independently planned its own programs and even its facilities for clinical training. Conjoint planning to embrace the needs of all the professions is obviously desirable from both the economic and educational standpoints. Many of the educational services which are vital to programs of continuing education such as audio visual services, library, and computer based education could be shared advantageously by all the health professional schools.

One of the most important resources to be shared is the capability for educational evaluation. This has double significance for interprofessional continuing education. First, of all the types of educational programs, continuing education should lend itself most readily to "outcome oriented" evaluation; the results of evaluation should be the guide to future program design. Secondly, evaluation by a "third party " may provide the objective evidence necessary to overcome professional bias and rivalry which are impediments to interprofessional cooperation and to program revision. Since the techniques of educational evaluation are not specific to any individual profession, sharing of this influential resource is justified on both rational and economic grounds.

In these and other areas, the educational and economic advantages of functional integration must take precedence over tradition and territoriality and this can only be achieved by coordination of the planning and operation of educational services and facilities for the benefit of all the professional schools.

There are other important benefits to be achieved by shared learning programs, but the three mentioned, achieving compatibility of practice functions, rationalizing the supply of health manpower, and increasing the efficiency of use of educational resources, provide in themselves ample justification for the substantial extra effort which is required to coordinate continuing education on an interprofessional basis.

BARRIERS TO SHARED LEARNING

If coordination of interprofessional education can be so readily justified, why then has it been so difficult to establish shared learning programs? The outline prepared for this Conference describes the barriers to interprofessional continuing education in the health sciences under six headings. At the risk of forcing some square pegs into round holes, I shall try to follow this general outline with one addition and give a few examples of barriers under each heading.

Organizational Barriers

In most jurisdictions there is no coordinating agency for continuing education of the health professions as a group. Furthermore, the responsibility for continuing education in any single health profession has been divided among many different authorities. Initiatives come from the professional associations, colleges or societies, the university or its departments, and the hospital or site of practice. Furthermore, the programs are carried out at many different levels, institutional, community, regional, provincial, national and international.

The budget to sponsor continuing education programs comes primarily from these organizations and agencies and is, therefore, fragmented. The principal resource, however, which is used to carry out the programs, is the teaching staff of the university health science faculties in that region.

One of the prime barriers to be eliminated is the chaos of sponsorship which now exists. A significant improvement would be the establishment of an information centre or "clearing house" to coordinate the efforts of the many different groups sponsoring continuing education programs so that overlap, duplication, conflicts in timing and misappropriation of resources could be minimized. A giant step forward would be the assignment of responsibility for these programs and the funds necessary to pay for them to a central agency with expertise in the implementation and evaluation of continuing education programs. Since the teaching resource for the programs is primarily the university staff, the logical site for coordinating continuing education might be the division of health sciences of the university.

A second problem in organization is the lack of coordination within the university of the several faculties, schools and departments responsible for health sciences education. In many established universities the Schools of Dentistry, Medicine, Nursing, Pharmacy, among others, are all in separate buildings often widely dispersed on and off campus. Furthermore, the power, prestige, resources and sheer size of Faculties of Medicine tend to intimidate other professional schools and, therefore, inhibit cooperative planning and execution of continuing education programs. Rather than risk domination or assimilation by medicine, the other schools choose isolation as a means of protecting their identity and legitimate interests. To overcome the inertia and active resistance to coordinated programs, it will be necessary to establish safeguards to protect the smaller schools, a common administrative focus to promote interaction of the schools and pooling of resources for continuing education previously allocated to individual schools, on a divisional basis. The usual approach to a common administrative focus is the Office of the Vice President or Coordinator of Health Sciences. But even this office may have its problems! I am reminded of that romantic poem entitled "Ode to a Vice President - Health Sciences" by an anonymous

Health Sciences educator in B. C. The ode to a Vice President goes something like this:

"The dentists hate physicians,
And the midwives, obstetricians,
And the pharmacists
Are alarmicists,
And everybody hates the Veep."

A third organizational problem is the lack of any suitable community practice framework in which to plan and to apply the interdisciplinary concepts developed in shared learning programs. There is a critical need for an organization framework on which to build the rapidly growing categories of health services which are delivered out of hospital. Much of the benefit of interprofessional basic and continuing education may be lost if the environment of practice consists primarily of doctors' and dentists' offices, pharmacies, social agencies, and nursing services, which are physically and functionally isolated from one another. Furthermore, since an important feature of continuing education is local community initiative, there needs to be some organization in the community which is interprofessional to plan the initiatives and to examine local problems.

Professional Barriers

As noted previously, professions tend to stake out territories and jealously guard the boundaries. It is not unknown for a profession to attempt to corner the market on prestige and power. The health professions are no exception to this general rule. The process of promotion of one profession may be inflammatory or frankly derogatory to other health professions and this has been noted in the interaction of Medicine and Chiropractic, Ophthalmology, and in the controversy over Nursing and Physician's Assistants.

Perhaps the strongest factor inhibiting interprofessional educational programs is the desire of faculty members and students to maintain a strong independent professional identity. This independence is often enhanced by long standing interprofessional rivalries and bitterness about past subservience. Suspicion or frank paranoia may undermine confidence in joint programs unless a period of initial sensitization of faculty members is encouraged. Our experience in committees charged with interprofessional objectives is that a period of several months of meeting together is often required before different health professionals overcome their biases sufficiently to focus on the assigned task and to treat each other as individuals rather than representatives of a specific profession. When a new member is added to the committee, there may be a relapse. Mark Twain described the attitude well "In matters of argument, our adversaries are insane."

The importance of interprofessional compatibility extends beyond the planning of educational programs. Since the faculty members are role models for many students, they will shape the attitudes of the students in the execution of the programs and by their personal behaviour as "isolated" or "integrated" professionals.

A further professional barrier is the difference in relationship to patients of different professions which results from their employment status. For example, the fact that the physician's activity relates to the patient, not to the time of day or hospital status, whereas the nurse is oriented to a work shift and to a specific area of an institution, results in different attitudes towards the delivery of health services. This in turn presents an obstacle to the implementation of shared learning programs since the learners fail to see the application in practice.

Conceptual Barriers

The line dividing professional from conceptual barriers is fuzzy. Some of the professional barriers that have been defined might equally well

have been called conceptual. In addition, there are subtle differences in the shaping and emphasis of the learning process in different fields. If there is any validity in generalizations, one may say that physicians focus on disease, dentists on techniques, pharmacists on commerce, nurses on people, public health workers on organization, and social workers on process. No group is focussing on the overall standards of health of the group or community. This blurs the focus of educational programs and makes genuine agreement very difficult, especially since continuing education brings together practitioners whose initial training was received in isolation and whose experience has reinforced their conceptual framework.

This conceptual difficulty is one of the most challenging problems before us, and we shall all be keenly interested in any proposed solutions. Many of the problems connected with the other barriers would practically solve themselves if a common concept or focus of what all health workers are really doing became generally accepted.

Legal Barriers

Legislation governing the scope of practice of a profession such as the "Medical Art" is enforced in most provinces by the professional college. Both the legislation itself and the mechanism of enforcement have far-reaching implications for other health professions. Licensing, which confers a monopoly in practice on one profession, and discipline, which is enforced unilaterally by the college of that profession, will accentuate differences between professions and inhibit cooperation. It is essential, therefore, that the regulation of an individual profession whether by certification or licensing, be done in a coordinated manner considering the rights and practices of other health professions, and placing above these the interests of the public to be served. A move is underway in several provinces to establish such a mechanism. In Ontario this will take the form of a Health Disciplines Regulation Board responsible for coordinating the licensing and disciplinary powers of the individual professional colleges.

A second problem arising from legislation regulating professions is the impediment to transfer of functions. The legislation often reflects past experience, not current needs nor future goals. While it is necessary to retain some means of regulation, many are now attracted to the view that licensing should only be used for professional practice outside the jurisdiction of publicly sponsored health care institutions such as hospitals and community health centres. In this way, licensing could be maintained to protect the public from the unqualified solo or independent practitioner without imposing a barrier to transfer of professional functions in organized programs of health care delivery where more effective and flexible quality control mechanisms can be instituted.

Evaluation techniques such as the practice audit, problem oriented record, and other techniques which take into account the contributions of several types of health personnel could be of immense importance in guiding the nature and emphasis of interdisciplinary programs of continuing education.

Educational Barriers

Much of the emphasis in current programs of continuing education is on recent advances in knowledge, and conventional didactic techniques are used to transmit this information to large audiences. This type of continuing education does not lend itself well to interprofessional participation. First, there are substantial differences among the different health professions in the knowledge base, knowledge needs and rate of assimilation of information transmitted in this manner. This means that the course is either inappropriate to many in the audience or is reduced to the lowest common denominator of the participating professions. While the notion of shared courses for several health professions has great theoretical appeal, the content, depth and focus of the courses and the capacity and motivation of the students are at the present time strikingly different for each profession. Experience with other levels of education suggests that when the learning objective is primarily

cognitive, each profession is better served by separate courses in the same subject. The pros and cons of combined classes have been carefully studied here at the University of British Columbia and those with local experience are in a better position to comment on the results in terms of impact on students, difficulties for teachers, and organizational problems.

More natural learning objectives for interprofessional continuing education are those emphasizing attitudes, behaviours and skills which are assets in the delivery of health services as a health team. A barrier to this type of continuing education is our lack of familiarity in dealing with these learning objectives and our relatively unsophisticated approaches to learning methods and to evaluation. Furthermore, this type of education must be carried out in a group with carefully balanced membership and with sufficient time to permit the establishment of group relationships. The learning objective may be undermined if the learning environment is artificial; if possible, the practice setting with real life problems should be used.

Effective shared learning is dependent on compatibility of the learners. This compatibility is limited by the differences in the educational preparation of the professions and by the meagre theoretical base on which to build continuing education which is characteristic of some professional training. It is further strained by attitudes, for example, the strong sense of professional self esteem and superiority often displayed by physicians and the lack of confidence frequently noted in nurses. Even at the postgraduate level and in continuing education, there is a striking difference in the apparent confidence of different health personnel when placed in the formal or structured academic settings. Much of this self-conscious reserve disappears when the learning takes place in a clinical setting. In the clinical setting, if the problems are real life situations, the type of interprofessional relationship is less artificial and the outcome is not as strongly influenced by personalities or by the level of previous

education. Nevertheless, even in these situations, interdisciplinary training may be marked initially by strong emotional reactions related to professional identity and dominance by physicians. For this reason, longer programs are required in order to provide the time necessary for interprofessional sensitization and adjustment, and if short programs are proposed, they must have strong, experienced leadership.

In general there appear to be at least four modes of continuing education. The first is the classical type of lecture conference emphasizing recent advances in knowledge. The second is the small seminar workshop with dialogue between teacher and learner and interaction among the participants. The third is the cooperative work-study program - an extended retraining course combining work and study. The fourth is the in-service rotation to gain specialized experience for a few people in a working setting.

The third approach seems particularly well suited to interprofessional continuing education as judged by the past few years experience at McMaster University with programs in clinical behavioural services and for the nurse practitioner.

The Clinical Behavioural Sciences Program is a postprofessional diploma course for individuals working in the health, welfare and allied fields with the aim of improving their administrative, supervisory and therapeutic skills, and their awareness of other community resources. Subjects such as family, groups and community development are studied with emphasis on interdisciplinary prevention of behavioural, social and health problems. During the past two years, the enrolment of 25 to 30 mature students per year has included nurses, ministers, social workers, physicians, teachers and other professionals, and one of the principal benefits has been the interdisciplinary education provided by these mature students themselves to one another.

The second program, for nurse practitioners, is designed to prepare nurses specifically skilled in primary health care to work with physicians in the ambulatory setting. The nurses enrolled are employed with physicians in offices or health centres and receive their instruction on a part-time basis. The physicians must also participate in the program since a fundamental requirement was judged to be the conditioning of the physicians' attitude and the development of an appreciation of the functions which could be delegated to the nurse. The value of the nurse trained in this way will be the subject of a careful evaluation study, but already there is stong evidence of a favourable impact on some of the practices in which the trainees are employed.

In other fields where the numbers required are not sufficient to justify a full program, individuals may join a functioning team, for example, a nurse from the maternity unit and pediatrician of a small outlying hospital might join the neonatal unit of a regional hospital for one or two months and the regular nurse and physician replace them in the outlying hospital to assist in the development of new sources to which the trainee would return.

These examples of interdisciplinary educational programs illustrate a valuable approach to meeting new needs for health services by highly relevant on-the-job training without the creation of a new profession. It is logical to suppose that continuing education and the retraining of existing health personnel for new functions will follow similar models of collaboration or joint venture by educational centres and employers. This approach has the obvious advantage of reaching professionals who have already left the formal educational system and thereby makes it possible to "teach old dogs new tricks." This reduces the dependence of the health care system for innovation on the formal educational programs which produce the new health personnel.

Financial Barriers

A serious barrier to effective continuing education is the lack of financial support provided by public educational authorities for this purpose. This financial responsibility is generally assumed to rest with the employer, or in the case of self-employed professionals, with the individual.* Few professions other than Medicine are sufficiently affluent to sustain a satisfactory program of continuing education for its members and the comparative affluence of physicians and their professional societies tends to favour unilaterial arrangements for continuing medical education rather than shared interprofessional learning.

For interprofessional continuing education to be effective, there must be financial support available for a predictable period to build up resources of personnel who can give leadership to the planning, execution and evaluation of the programs. Spasmodic funding linked to the purposes of a single profession will not achieve this goal.

SUMMARY

This review of barriers to shared learning in continuing education is far from complete but several themes warrant special emphasis. First, a "clearing house" should be established to coordinate the conflicting efforts within and among the individual professions, employers and universities, in order to more effectively deploy the limited resources available.

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* The solo pharmacist has a special problem because of the legal requirement to close the shop if he leaves the premises.

Secondly, the planning, execution, evaluation and allocation of resources in the universities should be shared by the participating health professional schools within the administrative framework of a division of health sciences.

Thirdly, mechanisms must be evolved to overcome the professional isolation and antagonism and the unreasonable restrictions imposed by licensing arrangements which currently impede shared learning experiences in the delivery of health services.

Fourthly, the interprofessional approach to continuing education is best suited to specific educational objectives and techniques and should not be applied indiscriminately to all types of continuing education.

Finally, financial support dedicated to interprofessional objectives is needed in order to build up a stable resource group with personnel who can give unified leadership to the planning, execution and evaluation of programs of interprofessional continuing education in the health sciences.

Moulding the needed coordination in team effort from health personnel with widely differing skills, identity, confidence and attitudes will require new dimensions to the planning and execution of continuing education for the health professions.

III. BARRIERS AND STRATEGIES IN INTERPROFESSIONAL CONTINUING EDUCATION

Following the two introductory papers presented to the conference in plenary session the participants were assigned to work groups to discuss potential barriers to ICEHS and to identify strategies for their solution. Each group had assigned to it a recorder who was a graduate student in adult education with health science training. Drs. McCreary, Evans, and Thomas visted the groups to facilitate their discussion if needed. Following the work group sessions the participants met in dialogue with Dr. Evans and Dr. Thomas to discuss and to share their deliberations. Summaries follow of these work group discussions and the dialogue that ended the first day of the conference.

WORK GROUP REPORTS

Five work groups met from 10:45 - 11:30 a.m. and from 2:15 - 4:15 p.m. on the first day of the Conference. Their task in the morning was to identify and to define barriers to ICEHS, while strategies and solutions for overcoming those barriers were sought in the afternoon session. The reports from the groups are summarized below, where it may be noted that many more barriers were identified than strategies for overcoming them.

Barriers by Category	Strategies
Organizational	
1. Geographic barriers of time and distance	1. None suggested
2. No fixed authority for ICEHS	2. None suggested
3. Varying governmental levels of autonomy	3. None suggested

Barriers by Category	Strategy
4. Lack of coordination	4. Attempt greater use of a team approach
5. Difficulty of grafting inter-disciplinary approach onto fixed professional education	5. a) Provide informal ICEHS as now exists in coronary care units b) Provide more formal professional continuing education c) Start interprofessional education at the undergraduate level
Professional Barriers	
1. Inability to identify common goals	1. Provide program planners with shared physical facilities
2. Lack of articulation of different goals	2. a) Establish dialogue b) Establish mechanism at local level for interprofessional communication c) Decide on desired competencies of each professional
3. Varying levels of integration among different professions	3. None suggested
4. Interprofessional competitiveness	4. None suggested
5. Fear of losing role identification or group identity	5. None suggested
6. Differences in focus of practice	6. None suggested
7. Over specialization and compartmentalization	7. None suggested
8. Fear of territorial invasion	8. None suggested
9. Independent nature of professions	9. None suggested
10. Professional pride and allegiance	10. None suggested
11. Entrenched attitudes towards the roles, rights, and responsibilities of each profession	11. a) Interpret roles to the public so that they attract individuals competent to fill professional roles b) Educate the public in self-health care and utilization of health resources

Barriers by Category	Strategy
Legal Barriers	
1. Different licensing requirements of the health professions	1. None suggested
2. Provincial (state) versus federal autonomy	2. None suggested
3. Differing legal responsibilities for patient welfare among the professions	3. None suggested
Educational Barriers	
1. Different definitions of continuing education	1. Should be considered broadly, not just as courses
2. Different educational levels and requirements of participants	2. a) Identify levels and requirements in terms of measurable competencies b) Have some general lectures in programs then separate participants into workshops by professions
3. Lack of prior interdisciplinary experience	3. None suggested
4. Lack of continuity of education	4. None suggested
5. Artificiality of course environment with no relationship to practical situation	5. a) Use problem oriented situations for teaching purposes b) Use special competencies of each discipline to teach
6. Piecemeal approach of continuing education	6. None suggested
7. Lack of mechanisms to evaluate programs	7. None suggested
8. Lack of understanding about learning techniques and practices of health professionals	8. Provide more educational research
9. Lack of respect for other professionals because of differences in length of formal education	9. None suggested

Barriers by Category	Strategy
Informational Barriers	
1. Lack of inter and intra professional communication	1. Bring health professionals together to establish dialogue
2. Lack of knowledge about programs in other professions	2. None suggested
3. Lack of a common language	3. Establish dialogue
Conceptual Barriers	
1. Inadequate number of ICEHS models available	1. None suggested
2. Lack of common basic assumptions	2. Establish common basic assumptions about ICEHS
3. Different concepts of what each profession is or stands for	3. None suggested
4. Irrelevance of ICEHS to practice	4. None suggested
5. Differences in levels of expectations of various professions	5. None suggested
Financial Barriers	
1. Fees for participation in continuing education	1. Resolve present inequities in distributing rewards for various professions
2. Lack of adequate system of funding	2. a) Demonstrate effectiveness of programs in improving health care. b) Lower fees c) Levy professional society d) Accept contributions from health agencies, governments, business e) Negotiate continuing education for salaried personnel.
3. Demands for accountability	3. None suggested

Barriers by Category	Strategy
Participational Barriers	
1. Snobbery or inadequacy felt by professionals	1. None suggested
2. Lack of confidence in an interprofessional environment	2. None suggested
3. Threats to notions of self-sufficiency	3. None suggested
4. Unfavourable personal and professional attitudes	4. Deal with attitudes at undergraduate, graduate and continuing education levels
5. Unwillingness to change because of apathy or tradition	5. a) Apply existing theories of change in adult education. b) Apply inter and intraProfessional discipline at the local level c) Evaluate participation in terms of measurable outcomes, not hours of attendance
6. Differing levels of motivation	6. a) Measure professional performance b) Provide information about available resources c) Provide consultant services d) Spend time and energy with those who are willing to learn e) Make license renewals contingent upon participation in continuing education

A DIALOGUE WITH JOHN R. EVANS AND ALAN M. THOMAS

A general discussion took place with Dr. Evans and Dr. Thomas regarding the barriers to continuing education on an interprofessional level.

One participant challenged the identification of overspecialization as a problem. He saw this as a solution rather than a problem, and felt that the problem arose only when there was insufficient specialization or integration of different specialists.

There was also a challenge of the barrier "lack of common goals" by one participant who felt that this should be changed to read "lack of specific goals at varying times." There were times when people should be brought together and times when they should clearly be kept separate in their own professional group.

Another participant wished to add a barrier to the list, namely the recognition of consumer input, as she felt that there was insufficient recognition of this factor. The health practitioners were often not consulted regarding their needs and interests for continuing education.

Dr. Evans raised the question of motivation for participation in continuing education. He felt that this may be one of the biggest problems and asked whether it was going to be made less serious or more serious by adding an interprofessional dimension. This observation was prompted by the 'consumer' item, because he felt that, even though the leaders in the professions came up with some theoretically ideal programs, these same programs might be a fiasco unless some recognition was given to the consumers' wishes and points of view. He felt that there were already problems of getting doctors to participate and adding the further dimension of interprofessional programs might aggravate these problems.

A participant disagreed with Dr. Evans on this point as she felt this might be the case as seen from the physician's point of view, but it was not so in the nursing profession. She considered that having prestigious lecturers from other disciplines enhanced the motivation of students, but she observed that it was important not to equate continuing education with "courses".

Another speaker from nursing said that they already had more demands for providing continuing education than they could meet. Nurses recognized that they were only one of many health professions and that they could not operate by themselves. She felt that far from losing their identity in the interprofessional spectrum, nurses would in fact increase their sense of identity as they better understood their role within the whole structure of health care.

The discussion then centered around two points: the lack of suitable program models and the need for evaluation of programs including the evaluation of consumer input. Dr. Evans pointed out that one of the problems at present was the fact that programs were often measured only in financial terms. There was no way of knowing a program's effectiveness in improving health care, therefore, it was very hard to know which content areas needed more attention than others. In turn, it was hard to know which areas needed more public participation.

It was suggested by a participant that the answers to these problems would only become apparent with the establishment of a clearing house, such as a computer, which could objectively come up with all the required data. The pattern of professional education had not changed over the past twenty years and it was highly unlikely that it would change without the introduction of some independent third party to act as the catalyst. A computer would be able to indicate exactly what was being achieved or not being achieved. The consumer would then be in a position to determine from these results whether or not he wished to support the system as it stood or whether he wanted to change it.

The question of loss of identity was raised again by a speaker who felt that possibly this will prove to be a greater problem than persuading different professions to work together in the first place. He felt that one of the strong motivating forces at present was the standards set within a particular profession, which might be lost by integrating resources. Another speaker agreed that the need for identity with a group in society was a very definite human need and should not be overlooked. This caution was partly discounted by a participant who expressed the opinion that continuing education on an interprofessional level would contribute to a sense of identification rather than detract from it as each part better understood what the other parts were doing. The discussion of this point ended with an observation from the floor that possibly the loss of identity problem might be diminished by placing more stress on competence rather than endurance tests such as the length of study.

Dr. Thomas reminded the participants of several fundamental points. These included: the nature of continuing education itself; whether interprofessional education is a viable means of improving medical education generally; and whether continuing education is an end for achieving interprofessional attitudes or practice. He suggested that the participants might look outside of their own professions for models and instances where different skills and different professions have been able to work together. Consideration should be given to the difficulties created by differing conceptual points of view since members of the collaborative professions often regarded a problem in divergent ways. Thus, when programing for interprofessional education, problems regarding attitudes and perceptions would need to be treated differently from problems such as finance, geography, and legislation.

Responding to a question about the degree or urgency in implementing interprofessional education, Dr. Evans expressed the opinion that this varied in different sectors of practice. He felt that there was an overall moderate degree of urgency to reshape attitudes so that attention could then be focused on overall health care which in the long run would prove more satisfactory to the consumer, as opposed to concentrating only on specific professional objectives.

In reply to a question about the apparent reluctance of university administrations to encourage an interprofessional approach, Dr. Evans said that this was often due to financial considerations. As far as his university was concerned, one of the problems was that the provincial government did not accept responsibility for continuing education which was judged to be the responsibility of the employer. Therefore, resource groups had to build up in order to plan for continuing education, and these resource groups had to have a solid financial base if they were to operate regularly and efficiently. He considered that the university, or better still the government, should provide public subsidies. Failing that, it would be necessary to organize the professional associations to assume a responsibility and this might be very difficult. Dr. Evans pointed out that many universities could not possibly finance this kind of operation as the cost of continuing education programs was often extremely high. Another speaker added the observation that in view of this high cost factor, one further problem was establishing priorities.

Dr. Evans repeated the need to obtain data on quality of performance. He felt that this could be turned into an incentive for further improvement and continuing education. What was needed was a system for the measurement of quality in practice, not in examination scores.

Dr. Thomas said that when he had visited some of the work groups he had the impression that much of the discussion had centered around the nature of continuing education itself, and not too much time had been spent on the interprofessional aspects. He felt that most participants did not feel any great sense of urgency to cooperate on an interprofessional basis, and asked if his impressions were correct.

One group leader reported that his group's discussion had been on common goals - - how one group's goals must be planned in cooperation with other groups' goals. Pressure did exist but not always in the areas that had been discussed. Another speaker said that he was responsible for the continuing

education program of five schools which had decided that their programs must be interprofessional, and that attention must be given to evolving new roles of nurses, physicians, and other health professionals. He felt that his mandate was very strong in this respect. He added that a lot of pressure was coming from public dissatisfaction which was focussed on the health care establishment. He felt that there was now a great opportunity for real progress in interprofessional approaches.

Returning to the question of financial pressures, a speaker wondered whether government would be more willing to contribute towards the cost of continuing education if it was interprofessional in nature, or less willing to contribute if the cost was shown to be much higher. Dr. Evans felt that what was needed first was not to persuade the government to part with more money, but rather to decide how best to solve the existing problems; only then should an attempt be made to obtain further subsidies from government.

Another speaker observed that there were many other kinds of factors which had a bearing on the need for changes; for example, changing morbidity rates which brought a need for different attitudes and different kinds of health care.

As far as public input was concerned, Dr. Evans felt that the factors most likely to influence the public in bringing pressure to bear on the health care establishment were likely to be those least recognized by health personnel, such as cost, accessibility, and availability. He felt that it was important to keep the public informed.

Further matters for consideration were training the trainers and examining what the different health professions taught about themselves. Dr. Evans suggested that what should be attempted first was bi-professional and tri-professional involvement, rather than pan-professional education. He indicated that there was no merit in attempting to include everyone in everything. He would like, for instance, to hear from a member of the dental profession as he

felt that dentistry was often the most peripheral of the disciplines involved.

A spokesman for dentistry said that he supported interprofessional cooperation and understanding, as there was a real need for this. However, he felt that involvement by the other professions in the technicalities and subject matter of dentistry had no particular merit. Another speaker from the dental profession confirmed that dentists did not see any particular benefit in general interprofessional education. One exception to this was a new group of dentists who were interested in forming group practices together with physicians, pharmacists, social workers, and others. This group felt a real need for interprofessional continuing education.

Dr. Thomas concluded the discussion by observing that it was interesting that there was now recognition of the fact that established professions, as well as younger undergraduates entering the professions, would assimilate new attitudes.

IV. CONDITIONS FOR CHANGE AND PLANNING INTERPROFESSIONAL PROGRAMS

During the second day of the conference the participants considered the conditions necessary to produce change and they discussed the design of interprofessional continuing education programs that would encourage change. The day began with a dialogue involving Dr. Coolie Verner and Dr. Alan Thomas who responded to the learning needs perceived by the participants with respect to conditions for change. Following this dialogue, the work groups reconvened to develop criteria and methods of planning for change through the use of interprofessional continuing education programs. The key problems identified by the work groups were then discussed in plenary session with Dr. Verner and Dr. Thomas.

A DIALOGUE WITH COOLIE VERNER AND ALAN M. THOMAS

Dr. Thomas opened the meeting by stating that there was often a lot of emphasis on the planning of other people's learning but not enough attention was paid to our own. This was going to be explored with the help of Dr. Verner. Dr. Thomas asked each participant to consider what he would most like to learn himself in order to become more successful in the role of a continuing education specialist. The following topics were suggested by the participants.

How to apply evaluation techniques in interprofessional continuing education.

The art of listening to students.

New insights into survey techniques.

Ways of determing entry points of adult learners.

How to develop a conceptual framework within which the best learning can be achieved.

How adults learn and how to teach them most effectively.

New approaches in audio-visual methods.

How to encourage participation between the adult learner and lecturer.

Motivation or what makes people learn.

How to make learning sufficiently exciting to the individual so that he will continue to learn on his own.

The environment best suited to adult learning.

Defining the learner's needs and goals.

How to identify the innovators or leaders in the community.

How to evaluate teachers.

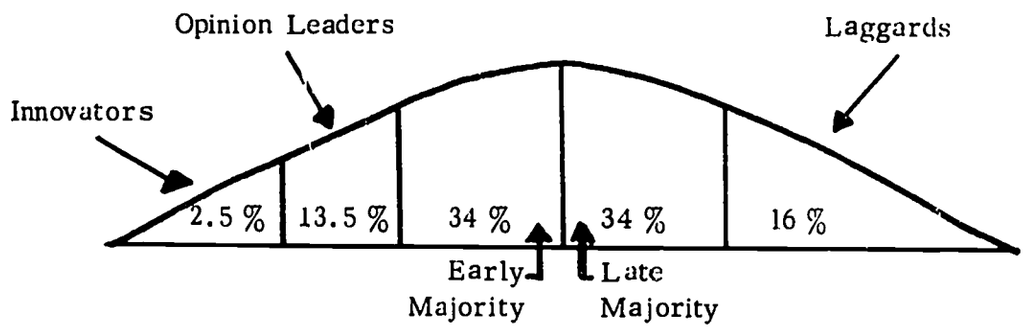
The role of the educator in facilitating change.

Dr. Verner began with the question regarding the identification of leaders and opinion makers by saying that we do not know too much about introducing innovations into many of the professions. Innovators tend to be flexible, a bit unstable, and not always very bright. They are not necessarily better off financially, nor will they get involved in a formal educational setting. Innovators are not very useful to the educator. It is better to look for the opinion leaders who are the most important people in the community. Certain doctors, for example, will accept new drugs and the others will hold off until they do.

The opinion leader tends to be readily acceptable among his peers and has a high income level and high social status. He is willing to try things but not to innovate until after very careful consideration. He gets some of his information from other than local sources and is always a step ahead of the majority. This is also true of farmers, or practically any other group. It is necessary to study a group for some time before you can identify the opinion leaders.

Because the innovator often does not have very good judgement, he may sometimes have good ideas but tries to put them across in the wrong environment. The innovator is anxious to try all new ideas that come along because he cannot succeed as he is, whereas the opinion leader is much more cautious.

The diffusion of ideas in a community forms a curve like this:



The people to whom we generally try to introduce new ideas are the opinion leaders. The rate of adoption starts slowly and ends slowly, but it accelerates quickly in the middle. In education there have been studies which show that there is a 50 year lag between innovation and full adoption, however, in adult education the lag is not so great.

The simpler the innovation the quicker will be its adoption; for example, the introduction of a new drug often does not involve any major change, so the drug likely will be adopted quickly and widely. A more complex level of innovation may involve some change in the doctor's attitude or behaviour towards his patient. This will take longer. Another level of innovations involves the

adoption of totally new methods of operation or procedure. The final innovation level is a major change in the person's occupation, such as a wheat farmer changing to cattle raising. This is the hardest level to change and it will take the longest time.

In response to a question from the floor, Dr. Verner said that the pattern described had been shown to be true in all kinds of societies, primitive or highly advanced, and also within simple or complex institutions. An individual may fall into one innovator category for some ideas, and in another for other ideas.

Dr. Thomas asked where the conference participants were on the innovator scale. What does the institutionalized opinion leader really achieve? Sometimes the very fact that he is part of an institution completely defeats his goal of influencing learning. Dr. Thomas suggested that we have to be fully aware of the other person's problems for without that awareness nothing will be achieved. For example, it is no use trying to get the pharmacist to come to courses if, by existing legislation, he is required to close his shop in order to come.

Dr. Verner stated that when seeking information people generally go one innovator category higher. For example, the late majority will go to the early majority as there are opinion leaders in each adopter category in the community, and this is the way that information filters down. The laggard is often insecure and afraid to tackle new ideas. The early majority are not averse to new ideas but they do not seek them; they have to be presented with an innovation and shown how it will work. The late majority are conservative and reluctant to change, but they do not want to be left behind. The motivation for change would vary with the central concern of the target group; with the farmer it would be increased production, while with the doctor it might be better patient care.

Several participants recounted their experiences which reinforced this description of group motivation for innovation. They confirmed the observation that very often institutionalization tends to cancel out an effective innovation. Further, the point was made that the opinion leader cannot assume his role as it must be given to him by the community. One participant observed that it is possible the laggard does not have as much insecurity as the innovator.

Another speaker said he assumed that in terms of continuing education there existed the same hierarchy of innovators within an institution. Dr. Verner agreed that this was a crucial factor which must be understood. A participant observed that it is often easier to introduce change in continuing education than in earlier, more formal education. Once the change has proved to be beneficial, it is then easier to introduce at the undergraduate level.

There was some disagreement from the floor as to whether any change was taking place in continuing education. Dr. Verner replied that continuing education operations were more flexible. Most new innovations in teaching techniques such as buzz groups and panels have been introduced in the adult education field. These are now common techniques in the formal educational scene. In the adult education setting the student is freer to attend or not to attend, and because there is less coercion there has to be more innovation to capture the student's attention.

On the question of evaluation, Dr. Thomas pointed out that it covers a wide spectrum. Evaluation can only be effective if it is properly planned for and included in a program. It also depends upon who wants it done. In the final analysis the only evaluation that really mattered is the evaluation of the student.

Dr. Verner said that it is necessary to remember two principal divergent aspects of evaluation and to differentiate between evaluation from the point of view of grading and evaluation as a way of assessing efficiency of the adult educator. He felt that the only efficient way of evaluating is to provide a way for the learner to assess his own progress. This is accomplished best by providing an opportunity for the learner to see where he is heading and what he can accomplish.

The way to provide for this differed with different kinds of learning. Dr. Verner felt that the greatest problem in evaluation was our inability to identify specific learning objectives.

With respect to motivation, Dr. Verner noted that an individual may learn something, but whether or not he adopts it for himself is a problem of motivation. There are many kinds of motivation involved in learning, such as fear of censure or fear of being behind the times. The fact that a person is motivated to attend has nothing to do with what he does when he is there. Therefore, the learner has to be motivated to attend, to learn when he is there, and to continue to learn afterwards. The responsibility for motivating learning during a class is with the instructor.

Observations of a typical university lecture of 50 minutes show that student interest is highest for the first 15 minutes and in the last ten minutes. The long period in between is largely an unproductive learning sutiation. The only way to help the student to continue to learn effectively is to create a learning situation in which he himself is involved. Dr. Verner talked briefly about some of the psychological aspects of adult learning where learning is defined as a change of behaviour which is relatively permanent. In order to produce this change in behaviour we must start with a stimulus which for adults has to be simple. He indicated that in a lecture, however, too many stimuli are presented. Dr. Verner outlined briefly the steps in memorizing after the presentation of a simple stimulus. Once the stimulus is presented, the learner must be attentive to it. An adult has a limited attention span, so that the stimulus often has to be repeated. Next, he has to code the stimulus in order to make it meaningful to him, and this is where we often fall down. The buzz group is useful in the coding process as the learner can relate the stimulus to his own circumstances and experiences. After coding he must store or memorize the coded message. Each learner has his own unique way of memorizing, however, everyone has a short term and long term memory storage system. All coded stimuli go first into

the short term system and then, often, into the long term memory system. We retrieve material from the long term memory system by establishing a memory trace, which is aided by showing the learner how to put the material to immediate use. All of this coding and storing cannot be managed effectively by a learner in a 50 minute lecture. It can be done by providing the learner with immediate feedback such as is possible with a teaching machine. The best possible learning conditions require the use by the learner of the material being learned.

In concluding the dialogue Dr. Thomas indicated that when a student is picked from a group to attend a course, his return to that group should be facilitated so as to counteract the natural defenses which the rest of the group will bring against him. It is better, when possible, to introduce learning to the whole group rather than taking one or two people from the group and teaching them, as is often the case for those who take part in continuing professional education.

WORK GROUP REPORTS

The work groups had the opportunity of meeting from 11:00 a.m. to 3:00 p.m. on the second day of the conference to identify criteria and methods for developing ICEHS programs. The following hypothetical situation was given to the groups to guide their discussions.

> Each group will act as an interprofessional planning committee. As such, they will outline a methodology for a program of continuing education to be used in a moderate sized community, 200 miles from a major teaching centre. Besides having a 100 bed hospital, this community has a public health unit, three dentists, two pharmacists and two medical clinics in which all but five physicians practice. A physiotherapist, occupational therapist, dietition and social worker are associated with the

public health unit and/or hospital. The outline should include how needs would be determined, the educational format to be used and the techniques of evaluation.

During their working session, each group covered a variety of topics and identifed a number of different approaches to the task given them. The major conclusions of each group are summarized in the following paragraphs.

Group 1 concentrated on the preplanning required before an interprofessional program can be designed. They identified some thirty factors which were grouped into three major categories: establishing an opportunity for health professionals to express their views on health problems of interest and concern; planning meetings to review the data collected from the health professionals; and final preparations for the courses decided upon.

Group 2 also identifed three major areas of concern. The first was to determine learning needs and resources involving sub-stages of a problem census, fact finding, and selection of course topics. The second major area involved designing the educational format for courses while the third was concerned with planning the evaluation procedures that would be followed.

Group 3 went through two role playing procedures; first, as members of a health sciences faculty attempting to respond to community needs, and second, as members of a community group attempting to develop a program with the aid of university consultants. The major conclusion of the group was that local participation by health professionals in the planning process was essential, appropriate, and effective.

Group 4 concentrated on the structure and functions of a local community planning group, dealing with such concerns as the determination of needs, the division of labour in a planning committee, and the decision making process.

Group 5 generated some fifteen ways of determining learning needs and classified information that might be collected into three categories: essential, desirable, and optimum. The group also identifed a number of steps in the planning process and tested their application through reference to a real community.

When the work groups reconvened in plenary session, Dr. Thomas asked them how their discussions had gone and what problems did they have in their planning. Some of the problems mentioned were:

> Deciding who to communicate with in the community in the first instance.
>
> Determining whether people in the community could recognize their own needs.
>
> Avoiding going into a community with a preconceived program in mind.
>
> Avoiding the provision of solutions solely from the institutional level, but consulting with the people concerned to determine their points of view.
>
> Trying to assess and to determine ultimate goals.
>
> Realizing that educational committees at the local level should be interprofessional. This creates a problem because the nature of a profession implies the right to define learning needs, and with an interprofessional approach some conflicts of interest might arise.

Dr. Verner stated that the identification of needs is one of the most persistent issues in adult education and that everyone is looking for a panacea for identifying them. Adults rarely know their needs, are rarely able to express them, and when expressed are rarely their real needs. Many experiments have been carried out in order to determine ways of identifying needs. The most effective way seemed to be through the adult educator who worked with the community in helping participants to identify and express their needs. The adult educator probed and tested the participants articulated needs against the body of knowledge available to him, and by such constant probing and questioning eventually arrived at the needs of the community.

professional representatives - Margaret Neylan from Nursing, Ted Hyde from Dentistry, Orm Murphy from Medicine, and Gordon Hewitt from Pharmaceutical Sciences - was obvious during the weeks of Conference preparation as well as during the actual meeting. The behind-the-scenes secretarial staff, so often unsung heroes of conferences, were unusually valuable during these two days.

Victor Doray, I understand, did his usual enthusiastic job of boasting about his Division of Biomedical Communications.

To the Deans of the Faculties who supported the program and permitted their faculty to become deeply involved we are grateful, and finally to all of the registrants who have contributed so effectively in the two days we are indeed indebted.

It was emphasized at the beginning of the Conference that we are embarking on uncharted waters, that we at this University had a commitment toward integration of education in the health professions. That there were problems we were very aware and also that there were some methods of meeting those problems. However, we were acutely aware that we did not know all about the problems nor all about the strategems in solving them.

It might be useful at this final stage in the exercise to review exactly what happened yesterday.

The day began with an attempt to set the stage for the Conference by describing the events which have led up to the present Conference and the reasons behind them. It was stressed at that time that the economic problems associated with the delivery of health care were going to force change, particularly in the relatively unsystematized area of primary health care. Emphasis was laid on the problems of Canada but the difference between the two countries represented here is only one of degree.

It was also emphasized that interprofessional education in the health sciences was only one segment of what must be an across-the-board integration - at undergraduate, graduate and continuing education levels.

John Evans followed with a masterful dissertation devoted in part to the advantages but largely to the problems of integration of education at all levels.

I am not going to spend a lot of time on those formal papers because they are available to you to take away. However, it might be worthwhile to list the

advantages and the problems briefly.

Among the advantages are the following:

(1) The development of maximum compatibility of graduates of health professional schools in the hopes of their being able to accept a future in which roles will change and evolve. The process of role change is never comfortable at the best of times, and, with individual professions traditionally isolated, it is almost unacceptable. Integration of teaching should permit a focus on health care rather than on individual professions.

(2) Creation of an effective instrument to modify educational policy to meet the changing needs of the population. Clearly such an instrument must involve more than an individual health professional school if a balanced manpower effort is to be achieved.

(3) Greater career opportunity and mobility must be achieved if our educational processes are to be made more efficient. We are all aware of the dead-ends in our educational programs - of the frequency with which we train individuals, particularly technicians, for tasks which will disappear with the development of a single electronic advance.

(4) Maximum use of educational resources for the obvious reasons advanced by John Evans yesterday.

These are the advantages of integration of health education, advantages which may and should reduce the severity of the problems of inadequate numbers of health professionals and rapidly escalating costs.

The barriers to shared learning as outlined by John are formidable:

(1) Lack of a coordinating agency for continuing education of health professionals as a group.

(2) Lack of a budgetary source for joint educational adventures.

(3) Geographic separation of health sciences faculties and schools.

(4) Professional barriers are particularly severe because professions tend to stake out territories and jealously guard the boundaries. The strong professional identity and the suspicion or frank paranoia concerning other professionals all too frequently undermine confidence in joint programs.

(5) The disparate foci of different health professions have been pointed out. How to consolidate continuing education in a series of health professions each of which perceives for itself a totally different philosophy and role?

(6) Legal barriers were mentioned which I tend to discount. In Family Practice Units we are breaking the Medical Act daily because we are involved in providing health care by a series of practitioners of whom only a few are physicians. The legal authorities are aware of these actions and are not concerned. Legal measures follow custom and will expand to accept other purveyors of health care as they are proven to be safe and productive.

(7) Educational problems have been stressed. It is clear that only certain aspects of continuing education lend themselves to an interdisciplinary approach. However, the educational problems generally would seem to be much less difficult than attempting the same process in undergraduate education for reasons that have been made abundantly clear yesterday and today.

In the brief group sessions which followed yesterday morning, you considered these barriers and added others including, communication problems, differing levels of development of continuing education in the professions, and lack of experience of faculty and therefore lack of confidence.

We went into yesterday afternoon's group sessions to consider strategies in overcoming these barriers with a feeling of discouragement at their immensity. This came out in different ways in the various groups during the two hour period. Group 5 found it necessary to review and examine a number of basic assumptions. They agreed on three points: (a) that continuing education essentially improves the quality of health care delivery, (b) that a health team approach to the delivery of health care is superior to uni-professional activities, and (c) that interprofessional education in the health sciences is preferable to uni-professional education where it is practicable.

Other groups did not stop to reexamine their basic assumptions. However, in each group the need for reevaluation came through in a variety of queries as to whether the flame was worth the candle. Was it really worthwhile to tilt at all these substantial windmills of professionalism, lack of budgetary support, lack of communication, and lack of common goals. It was my feeling at the end of the afternoon that we were an uncertain group, far from unified in a common desire to push forward in this obviously difficult, lengthy, energy draining activity.

Group 4 were the innovators yesterday afternoon. They produced a plan for the development of a specific interprofessional course, examined the barriers inherent in it and the strategies for removing barriers -- a task which resembles today's exercise.

There were a variety of very important strategies which surfaced during the afternoon and I shall mention a few.

(1) The necessity for further educational research before we could be aware of the techniques and practices of health professionals.

(2) Identification of needs by establishing meaningful and continuing dialogue with the actively involved professionals in the field.

(3) The majority of the groups arrived at the strategem of working with the individuals and groups who were prepared to accept the inevitable loss of identity of interprofessional education rather than attempting to enforce it across the board. A variant of this theme was to select the professions or specialities whose load was becoming unbearably heavy and who were therefore prepared to accept a modification of their roles if it brought relief.

(4) Maintaining the individuals involved in continuing education and particularly in the interprofessional approach closely involved with the undergraduate program and with health services research and

development. The lesser constraints on change in learning techniques in the continuing education area can produce experiments and results which can be valuable to undergraduate curriculum. The experience of the group in continuing education can also be of great value to those designing new models of health care delivery. The message which came through again and again was that ICEHS in isolation would be singularly ineffective. Only if it is an integral part of a continuous process of integration will it be effective.

(5) Coming through several of the group's discussions appeared the need for public education on how to use the changing health care system with the goal of having the public become more demanding and more knowledgeable in their demands for improvement in health care.

(6) The lack of communication between professional groups involved in continuing education was studied and the generally accepted solution seemed to be that Directors of Continuing Education should be in adjacent offices and work out their own professional differences before they attempt to show others how to do the same.

(7) Evaluation was a theme common I think to every group. The need to establish methods of measuring the effectiveness of health care by all of the involved professional groups, and then attempting to demonstrate that more rational distribution of function and more effective care can be achieved by interprofessional interaction and education was seen as immediate and possible. Generally this involved the selection of a community and a disease entity prevalent in that community. The first step would be an acceptance by all professionals of the level of quality of care to be provided to patients with the disease. Then would come an examination of how nearly this goal was approached under existing circumstances and then a reevaluation of the contribution of each professional and, if desirable, a redistribution of responsibilities,

followed by evaluation of the new program. It seems highly unlikely that the present programs which, like Topsy, have just growed, can be as effective as a considered, orderly approach based upon today's degree of preparedness of the various professions or as John Evans said, "on the educational investment" of each professional.

To those of us listening to the comments this seemed a strategem of major importance. No amount of talking could achieve what a few objectively measured results in a few pilot projects could in persuading funding agencies, professional groups and universities of the value of the program.

We ended yesterday impressed with the immensity of the task and far from totally convinced that the results justified the effort required at this point in time. So it was important that we have an evening free from problems, dealt with the bar rather than barriers, and heard no more disturbing note than that of a romantic bull frog in the background.

This morning we entered into a new phase in the development of the conference as a basic science note was introduced by Alan Thomas and Coolie Verner.

We learned the differences between Innovators and Opinion Leaders, the awesome lag after the introduction of new concepts into a community before they are accepted. We learned something about evaluation and how fastidiously specific we must be in attempting to evaluate any program. We learned a great deal about the basic principles of learning, the need for a single, simple, well understood stimulus, the requirement for attention and the short attention span we must cope with, the need for coding by relating the stimulus to something with which the student is familiar, and the two memory systems - the dialed telephone number short span and the changed behaviour long span. We learned of the need for reinforcement and the dangers of negative reinforcement.

Having had the good furtune to be exposed to the Adult Education group for a number of years I am very aware that we did not really scratch the surface

of this huge reservoir of knowledge basic to what we are all concerned about. It was to me an interesting break in our consideration of the problems.

From that you went back to your groups charged with the responsibility of acting as an interprofessional planning committee for the development of programs in a specific community. You have discussed the results of these group sessions for the last hour. I shall only make one point at this time. I detect great difficulty on the part of some of the registrants to recognize any activity between uni-professional and, if you will, toti-professional education. Surely the indications for toti-professional involvement in any program are few. Much of what we attempt to achieve should be attainable by the interaction of two or three professional groups in programs concerning problems in which they have an intense interest.

In conclusion I would like to express again the gratitude of all of us at U. B. C. for the thoughtful and wise contributions which you have made to these proceedings.

And now we come to the end of the Conference. The ultimate stimulus for the process of integration -- a small part of which we have considered in the past two days -- in the economic and logistic crises which we face in the provision of health care. Changes can and will be dictated by virtue of necessity and the most constructive effort which we as health educators can make is to produce professionals who will accept change. To achieve this they must be knowledgeable of the roles that each plays and the increased roles that each could play. Whether or not you as an individual believe that the time is ripe for you to increase participation in Interprofessional Continuing Education is your decision based upon your own inclinations and the circumstances surrounding you. That it must essentially come about as one part of a total spectrum of integration is, to my mind, as certain as death and taxes.

Some of you may wonder why this Conference was called at this time. It was for the following reasons:

(1) With a commitment towards this sort of program and a generous grant from the Kellogg Foundation to make a training program possible, we wanted the advice and assistance of as many experts in the field as we could arrange. We have learned much of new barriers and new strategies in the past two days and for this we are grateful.

(2) We frankly wanted all of you to meet the individuals involved in the field at U. B. C., and to examine the facilities in hopes that you either recommend individuals in the field to come for training or advise them against it.

(3) We particularly wanted your thoughts and advice on where we should go from here.

- Should we have further meetings of this generally introductory type?
- Should we prepare short immersion courses on the science of learning as it is known by the adult educationist of which we had a tid-bit this morning?
- Should we focus down in such short courses as evaluation and obtain all the help that we can from experts in the field?
- Should we concentrate on Master's and Ph.D. programs with joint input from education and health sciences or should the offerings comprise all of these?

We will be immensely grateful for any opinions which you might give us and perhaps you would use the back of the evaluation forms to jot them down while they are fresh in your minds.

Finally, may I say how great a pleasure it has been to have you in Vancouver for these few days. We sincerely hope that you will return soon.

scale ranged from 4.47 to 6.00. As Figure 2 illustrates the groups appeared to have some difficulty in identifying problems of common interest (4.47) and in working towards the solution of problems (4.62). Moreover, there was evidently little personal learning about the process of solving problems (4.65) or about the content of the problems (4.79). At the other extreme, the group members felt that they had controlled themselves rather than having control imposed on them (6.00) and the climate of the group was perceived to be free and supportive (5.91).

There was considerable variation among the participants with respect to their ratings of their work groups. The maximum total score on these group process items was 70 points, and every member of Group 3 rated that group at 60 points or more. In Group 2, however, five of the seven members rated the group process in the 40 to 49 point range and one rated it lower. The three other groups had a median rating in the 50 to 59 point class.

ACQUISITION OF KNOWLEDGE

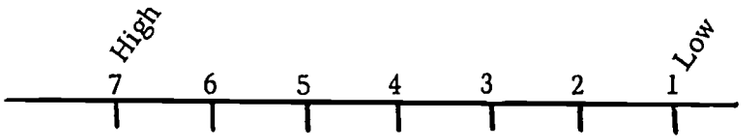
The participants were asked on the evaluation form to indicate their level of knowledge prior to and after the conference with respect to six topics included in the conference objectives. As Figure 3 shows, each item produced a considerable gain when rated on a five-point scale from no knowledge about the topic (1 point) to a great deal of knowledge (5 points). The average total score for the six items increased from 17.5 on the entry scale to 22.0 out of 30 on the final measure. The before and after mean scores for each item and the total were tested for statistically significant differences by t-tests, and in every case the difference in scores was statistically significant at the .05 level.

The data presented above suggests that the participants felt that they had acquired knowledge about ICEHS during the period of the conference. Whether or not this perceived learning was reflected in actual learning could not be determined since no tests could be devised as the specific content of the presentations was not known in advance.

FIGURE 2

PROFILE OF PARTICIPANT FEELINGS ABOUT

THE WORK GROUPS



Effectiveness in identifying problems of common interest

Effectiveness in working toward the solution of problems

Personal learning about the content of problems

Personal learning about the process of solving problems

Climate of the group

Involvement of the group as a whole

Personal involvement in the group discussion

Communications about group members

Group members listened to each other

Controls on the direction of the group

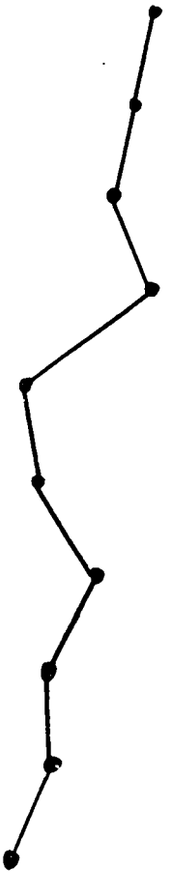
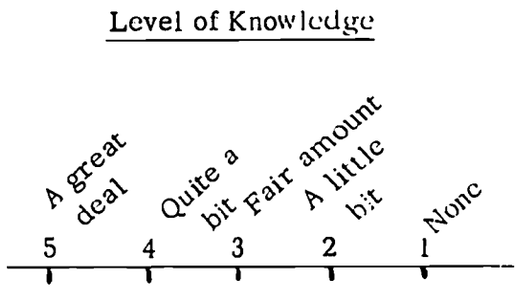


FIGURE 3

PROFILE OF KNOWLEDGE ABOUT ICEHS

PRIOR TO AND AFTER THE CONFERENCE



Nature and development of ICEHS

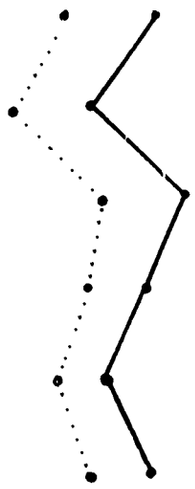
Barriers to the development of ICEHS

Strategies for handling barriers

Basic components of knowledge diffusion

Learning needs of the ICEHS team

Program planning procedures



Legend: Prior to _____

After . . . . . .

ATTITUDE CHANGE

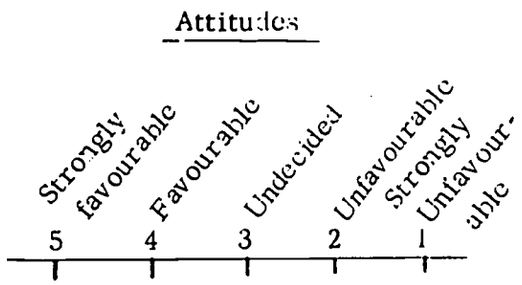
A nine-item Likert type attitude scale was constructed to measure the participants' attitudes towards various aspects of ICEHS both prior to and after the conference. Responses to each item were recorded on a five-point scale ranging from strongly agree to strongly disagree, and the total score could range from 9 to 45 points.

There was some evidence to indicate that attitudes toward ICEHS shifted in a favourable direction. The mean total score increased from 34.1 to 36.1 points, and the difference between the two means was statistically significant at the .04 level. Seven of the nine items showed a more favourable attitude after the conference than before, while two items showed no change. (Figure 4) Only three items, however, showed a statistically significant difference at the .05 level. In the post-conference measures, the participants agreed more strongly than before that ICEHS would help people in the various health professions to understand each other better and would result in better health care for the public, while they disagreed more strongly that ICEHS programs wasted time on non-essentials and lacked content.

The item showing the least favourable attitude on both before and after measures with a mean score of 2.9 in each case was that current variations in education for different health professions mean that ICEHS programs are not useful for some of the professions. At the conclusion of the conference, the most favourable attitudes were that ICEHS programs would help people in the health professions to understand each other better (4.6) and that such programs will expand considerably over the next ten years. (4.5)

FIGURE 4

PROFILE OF ATTITUDES TOWARD ICEHS PRIOR TO AND AFTER THE CONFERENCE



ICEHS requires too much time and effort to organize

ICEHS will help people in the various health professions to understand each other better

ICEHS programs will enable the provision of more economical health care.

The benefits of ICEHS are too vague to make it worthwhile

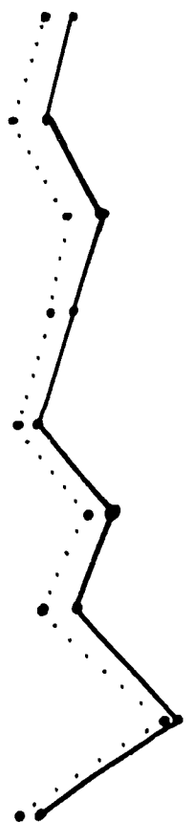
Undergraduate education in the health professions should be organized to provide shared learning experiences

ICEHS programs lack content and waste time on non-essentials

ICEHS programs will result in better health care for the public.

Current variations in education for different health professions mean that ICEHS programs are not useful for some of the professions

ICEHS programs will expand considerably over the next ten years



Legend: Prior to _____

After .....

INTERRELATIONSHIPS

Six of the key variables discussed previously were correlated with each other to determine the relationships among them. As Table 1 indicates, the strongest correlation (r = .55) was between prior and after knowledge of ICEHS suggesting that those who felt they knew more about the subject before the conference also felt that they knew more afterwards.

TABLE 1

INTERRELATIONSHIPS AMONG KEY VARIABLES

	1	2	3	4	5	6
1. Satisfaction with conference events	1.00					
2. Prior knowledge of ICEHS	.04	1.00				
3. After knowledge of ICEHS	.25	.55**	1.00			
4. Prior attitude to ICEHS	-.08	-.03	.23	1.00		
5. After attitude to ICEHS	.28	.03	.35*	.43*	1.00	
6. Rating of group processes	.21	-.19	.17	.22	.42*	1.00

* $p < .05$
** $p < .01$

After-conference knowledge correlated significantly with after-conference attitude toward ICEHS (r = .35) indicating that those who thought they had a greater amount of knowledge had a more favourable attitude toward the subject. As might be expected, prior and after-conference attitudes toward ICEHS were associated with each other (r = .43). The participants who had a more favourable attitude toward ICEHS at the end of the conference tended to rate the group process more highly (r = .42).

CONCLUSION

It would appear that the conference was fairly successful from the point of view of the participants. The conference events were found to be satisfactory, the participants felt that they had learned something, and their attitudes toward the subject of the conference became more favourable. Incidental observations seemed to confirm these quantitative findings, even though some of the work groups appear to have had difficulty in coming to grips with their tasks.

Four of the conference participants felt that the conference should have been in session for three days instead of two, but none felt that it had lasted too long. Several participants indicated on their evaluation forms that they would like to see a series of conferences or short courses on such topics as adult learning and evaluation.

The conference appears to have been a significant first step in bringing together continuing educators from the various health professions to form viable working relationships. The problems and barriers to interprofessional continuing education in the health professions are numerous and complex, but the discipline of continuing education may offer a useful framework and common meeting ground for the establishment of sound interprofessional relationships to the ultimate advantage of the health professions and the improvement of health care services.

VII APPENDIX

PROGRAM

Sunday, June 4	
8:30 - 10:30 p.m.	Reception and Registration
Monday, June 5	
8:30 - 9:00	Coffee
9:00 - 10:30	Introductions and Background and Expectations of the Conference Dr. J. F. McCreary Dr. A. Thomas
	"Background to Interprofessional Continuing Education in the Health Sciences", Paper Presented by Dr. J. F. McCreary.
	"Barriers to Shared Learning", Paper Presented by Dr. J. Evans.
	Work Groups Sessions Task: Barriers & Strategies in Inter-professional Continuing Education.
12:00 - 1:30	Catered Luncheon Tours of Instructional Resources Centre.
1:30 - 5:00	Discussion of Morning Session (cont). Dr. A. Thomas
	Work Group Sessions (Resumed)
	A Dialogue with Dr. J. Evans and Dr. A. Thomas
5:15 - 6:00	Planning Committee Meeting: Evaluation, First Day.

Tuesday, June 6

8:30 - 9:00	Coffee
9:00 - 12:00	A Dialogue with Dr. C. Verner and Dr. Alan Thomas
	Work Group Sessions Task: Conditions for Change & Planning Interprofessional Programs
12:00 - 1:30	Catered Luncheon Tours of Instructional Resource Centre
1:30 - 4:30	Work Group Sessions (cont).
	A Dialogue with Dr. C. Verner and Dr. A. Thomas
	Conference Summation Dr. J. F. McCreary
	Conference Evaluation Questionnaire Dr. G. Dickinson

PRINCIPAL RESOURCE PERSONS

Dr. J. R. Evans, Dean of Medicine and Vice-President Health Sciences, will become the ninth President of the University of Toronto on July 1, 1972. After obtaining the M.D. (Toronto) in 1952, Dr. Evans was a Rhodes Scholar at University College, Oxford, where he obtained the D. Phil. in 1955. After further training in internal medicine at Toronto and Harvard, he became an Associate in the Department of Medicine at Toronto in 1961. He became the first Dean of Medicine at McMaster in 1965.

Dr. John F. McCreary became the first Professor and Head of the Department of Paediatrics when the Faculty of Medicine opened in 1951. He became Dean of the Faculty in 1959 and Coordinator of Health Sciences in 1971. He has been particularly concerned with integration of the teaching in health professional schools and has spent much of the past decade in pioneering this concept at The University of British Columbia and elsewhere on this continent.

Dr. Alan Thomas has a broad background and experience in adult education. He received his Ph.D. at Columbia University in New York. During the years he has served as a consultant on adult learning and training to many organizations and institutions. For a number of years he was Executive Director of the Canadian Association for Adult Education, and then served as Administrative Assistant to the Hon. Robert Stansbury in Ottawa. At one time he was Supervisor of the Communications Programme in the Extension Department, and an Assistant Supervisor in the Faculty of Education at The University of British Columbia. At the present time Dr. Thomas is Chairman of the Department of Adult Education in the Ontario Institute for Studies in Education in Toronto.

Dr. Coolie Verner is a rural sociologist and Chairman of the Department of Adult Education at The University of British Columbia, which he established in 1961. Prior to that he was Professor of Adult Education at Florida State University and at the University of Virginia. He is widely known for his research and writing in the fields of sociology and adult education. He is also a member of the faculty of the Department of Agricultural Economics in the Faculty of Agriculture at The University of British Columbia.

ROSTER OF PARTICIPANTS

Group 1

Dr. E. J. Hyde Continuing Dental Education in the Health Sciences First Floor, Instructional Resources Centre, U. B. C.	Dentistry
Mr. William T. Herzog, Director, Continuing Education in the Health Sciences University of North Carolina Chapel Hill, N.C. 27514	Medicine
Dr. L. C. Steeves, Director Division of Continuing Education Faculty of Medicine Sir Charles Tupper Medical Building 5859 University Avenue Halifax, N. S.	Medicine
Dr. M. Josephine Flaherty Department of Adult Education The Ontario Institute for Studies in Education 252 Bloor Street West Toronto 5, Ontario	Nursing
Mrs. Signe S. Cooper Project Director North Central States Planning Project Continuing Education in Nursing 610 Langdon Street, Room 414 Madison, Wisconsin 53706	Nursing
Dr. B. P. DesRoches Director of Education Ontario College of Pharmacy 483 Huron Street Toronto 5, Ontario	Pharmacy

Roster cont.

Dr. J. A. M. Shaw Faculty of Pharmacy University of Manitoba Winnipeg, Man.	Pharmacy

Group 2

Loretta C. Ford, R.N., Ed. D., Professor and Chairman Community Health Nursing University of Colorado Medical Center 4200 East Ninth Avenue Denver, Colorado 80220	Nursing
Mrs. Margaret S. Neylan Continuing Nursing Education First Floor, Instructional Resources Centre U. B. C.	Nursing
Mrs. Norma Fulton Continuing Nursing Education School of Nursing University of Saskatchewan Saskatoon, Saskatchewan	Nursing
Dr. R. C. McClelland, Chairman Division of Continuing Education Faculty of Dentistry University of Alberta Edmonton 7, Alberta	Dentistry
Dr. Neal A. Vanselow Professor and Acting Chairman Postgraduate Medicine School of Medicine University of Michigan Ann Arbor, Michigan	Medicine
Dr. A. T. Hunter Assistant to Dean Continuing Education Faculty of Medicine University of Western Ontario London 72, Ontario	Medicine

Dr. A. W. Mathews
Registrar - Treasurer — Pharmacy
Pharmacy Examining Board of Canada
175 College Street
Toronto 2 B, Ontario

Group 3

Dr. John E. Flocken, Director
Continuing Dental Education — Dentistry
University of California at
Los Angeles
Los Angeles, California 90024

Dr. H. O. Murphy,
Director, Continuing Medical Education — Medicine
First Floor, Instructional Resources
Centre, U. B. C.

Dr. Pierre Jobin
President, CACMA and Director, — Medicine
Continuing Medical Education
Laval University
Quebec, P. Q.

Miss Geraldine Skinner, R.N.
Director, Continuing Education for Nurses — Nursing
University of Michigan, School of Nursing
Room G 1107, Towsley Building,
Ann Arbor, Michigan 48104

Hilke Faber, R.N., Assistant Director
Continuing Education — Nursing
Washington/Alaska Regional Medical Program
500 University District Building
Seattle, Washington 98105

Dr. W. L. Blockstein, Chairman
Health Sciences Units — Pharmacy
University Extension & Professor Pharmacy
School of Pharmacy
University of Wisconsin
Madison, Wisconsin 53706

Dr. James M. Schless Director, Office of Post-Graduate Medical Education Box 193, Health Sciences Centre University of Minnesota Minneapolis, Minn. 65455	Medicine

Group 4

Dr. W. W. Yakimets, Director Continuing Medical Education Faculty of Medicine University of Alberta Edmonton 7, Alta.	Medicine
Dr. L. Hulbert Division of Research in Medical Education University of Washington Seattle, Washington 98105	Medicine
Rita J. Lussier, R.N., M.S. Nursing Service Consultant The Association of Nurses of the Province of Quebec 4200 Dorchester ouest Montreal 215, P.Q.	Nursing
Ms. Helen M. Carpenter, Director School of Nursing University of Toronto Toronto 5, Ontario	Nursing
Dr. J. G. Duff, Director College of Pharmacy Dalhousie University Halifax, N.S.	Pharmacy
Mr. Gordon Hewitt Director, Continuing Education Faculty of Pharmaceutical Sciences First Floor, Instructional Resources Centre, U. B. C.	Pharmacy
Dr. J. G. Jeffrey College of Pharmacy University of Saskatchewan Saskatoon, Saskatchewan	Pharmacy

Group 5

R. A. Barnard, Executive Director Continuing Education in the Health Sciences First Floor, Instructional Resources Centre, U. B. C.	Administration
Dr. A. W. Eastwood Professor of Orthodontics Director, Undergraduate Orthodontics University of Western Ontario Faculty of Dentistry Department of Paediatric Dentistry London, Ontario	Dentistry
Dr. John W. Dawson Associate Dean and Director Division of Continuing Medical Education Faculty of Medicine University of Calgary Calgary 44, Alberta	Medicine
Dr. Nicholas J. Pisacano Director, Continuing Education College of Medicine University of Kentucky Lexington, Kentucky 40506	Medicine
Dr. Marian Leach, Head Educational Sciences Section Continuing Education and Training Branch Regional Medical Programs Service 5600 Fishers Lane Rockville, Maryland 20853	Nursing
Ms. Alice Baumgart School of Nursing University of British Columbia Vancouver 8, B. C.	Nursing
Dr. W. J. Hodapp Coordinator Health Sciences, Continuing Ed., University of Minnesota College of Pharmacy 115 Appleby Hall Minneapolis, Minnesota 55455	Pharmacy

CONFERENCE EVALUATION FORM

Kellogg Invitational Conference on Interprofessional Continuing Education in the Health Sciences (ICEHS)

University of British Columbia, June 4 - 6, 1972.

1. What is your health profession? 1, 2. ____ 3. ____

   a. Dentistry____
   b. Medicine____
   c. Nursing ____
   d. Pharmacy____
   e. Other (please specify)_____

2. What is your occupational title? 4. ____

   a. Dean____
   b. Director of a school____
   c. Director of continuing education____
   d. Other (please specify)_____

3. Which work group were you most closely associated with during the conference? Group number_____ 5. ____

4. Would you please indicate your general satisfaction with the following conference events by circling a position for each item on the seven-point scale provided.

	Did not Attend	Excellent			Adequate			Very Poor	
a. Sunday night reception	0	7	6	5	4	3	2	1	6. ____
b. Background to ICEHS (Dr. McCreary)	0	7	6	5	4	3	2	1	7. ____
c. Barriers to ICEHS (Dr. Evans)	0	7	6	5	4	3	2	1	8. ____
d. Coping with barriers to ICEHS (Dr. Evans & Dr. Thomas)	0	7	6	5	4	3	2	1	9. ____
e. Monday evening banquet	0	7	6	5	4	3	2	1	10. ____
f. Learning activities for change (Dr. Verner)	0	7	6	5	4	3	2	1	11. ____
g. Learning needs of an ICEHS Team (Dr. Thomas)	0	7	6	5	4	3	2	1	12. ____
h. Program planning in ICEHS (Dr. Thomas)	0	7	6	5	4	3	2	1	13. ____
i. Conference summation (Dr. McCreary)	0	7	6	5	4	3	2	1	14. ____

15, 16. ____

5. Please rate your level of knowledge prior to the conference on each of the six topics listed below. Circle the position that best represents your level of prior knowledge using the following five-point scale.

5 I knew a great deal about the topic.
4 I knew quite a bit about the topic.
3 I knew a fair amount about the topic.
2 I knew a little bit about the topic.
1 I knew nothing about the topic.

a. Nature and development of ICEHS	5	4	3	2	1	18. ____
b. Barriers to the development of ICEHS	5	4	3	2	1	19. ____
c. Strategies for handling barriers to ICEHS	5	4	3	2	1	20. ____
d. Basic components of knowledge diffusion.	5	4	3	2	1	21. ____
e. Learning needs of continuing educators in the health sciences.	5	4	3	2	1	22. ____
f. Procedures for planning ICEHS programs.	5	4	3	2	1	23. ____
						24,25. ____

6. Now that the conference is over, how would you rate your present level of knowledge about the topics listed below? Circle the position that best represents your present level of knowledge using the following five-point scale.

5 I know a great deal about the topic.
4 I know quite a bit about the topic.
3 I know a fair amount about the topic.
2 I know a little bit about the topic.
1 I know nothing about the topic.

a. Nature and development of ICEHS	5	4	3	2	1	27. ____
b. Barriers to the development of ICEHS	5	4	3	2	1	28. ____
c. Strategies for handling barriers to ICEHS	5	4	3	2	1	29. ____
d. Basic components of knowledge diffusion	5	4	3	2	1	30. ____
e. Learning needs of continuing educators in the health sciences.	5	4	3	2	1	31. ____
f. Procedures for planning ICEHS programs.	5	4	3	2	1	32. ____
						33,34. ____

7. Please indicate your position prior to the conference on each of the following statements by circling the appropriate response.

SA strongly agree
A agree
U undecided
D disagree
SD strongly disagree

a. ICEHS requires too much time and effort to organize	SA	A	U	D	SD	36. ___
b. ICEHS will help people in the various health professions to understand each other better.	SA	A	U	D	SD	37. ___
c. ICEHS programs will enable the provision of more economical health care.	SA	A	U	D	SD	38. ___
d. The benefits of ICEHS are too vague to make it worthwhile.	SA	A	U	D	SD	39. ___
e. Undergraduate education in the health professions should be organized to provide shared learning experiences	SA	A	U	D	SD	40. ___
f. ICEHS programs lack content and waste time on non-essentials.	SA	A	U	D	SD	41. ___
g. ICEHS programs will result in better health care for the public.	SA	A	U	D	SD	42. ___
h. Current variations in education for different health professions mean that ICEHS programs are not useful for some of the professions.	SA	A	U	D	SD	43. ___
i. ICEHS programs will expand considerably over the next ten years.	SA	A	U	D	SD	44. ___
						45,46. ___

8. Would you please indicate your present position with respect to each of the following statements now that the conference is over by circling the appropriate response.

SA strongly agree
A agree
U undecided
D disagree
SD strongly disagree

a. ICEHS requires too much time and effort to organize.	SA	A	U	D	SD	48. ___

b.	ICEHS will help people in the various health professions to understand each other better.	SA	A	U	D	SD	49. ____
c.	ICEHS programs will enable the provision of more economical health care.	SA	A	U	D	SD	50. ____
d.	The benefits of ICEHS are too vague to make it worthwhile.	SA	A	U	D	SD	51. ____
e.	Undergraduate education in the health professions should be organized to provide shared learning experiences.	SA	A	U	D	SD	52. ____
f.	ICEHS programs lack content and waste time on non-essentials.	SA	A	U	D	SD	53. ____
g.	ICEHS programs will result in better health care for the public.	SA	A	U	D	SD	54. ____
h.	Current variations in education for different health professions mean that ICEHS programs are not useful for some of the professions.	SA	A	U	D	SD	55. ____
i.	ICEHS programs will expand considerably over the next ten years.	SA	A	U	D	SD	56. ____

57,58. ____

9. The following questions are concerned with the work group sessions held during the conference. Please circle your position on the seven-point scale given with each question.

a. How effective do you feel your group was in identifying problems of common interest to all group members?
Not very effective 1 2 3 4 5 6 7 Very effective 60. ____

b. How effective do you feel your group was in working in an orderly, rational, but sensitive way toward the solution of problems?
Not very effective 1 2 3 4 5 6 7 Very effective 61. ____

c. How much do you feel you personally learned about the <u>content</u> of the problems being discussed?
Little or none 1 2 3 4 5 6 7 A great deal 62. ____

d. How much do you feel you personally learned about the <u>process</u> by which problems can be solved?
Little or none 1 2 3 4 5 6 7 A great deal 63. ____

e. How would you describe the climate of your group?
Restrictive, pressure toward conformity. 1 2 3 4 5 6 7 Free, supportive, respect for individual differences. 64. ____

Question 9 continued.....

f. How would you describe the degree of involvement of your group as a whole?

Little or no involvement 1 2 3 4 5 6 7 High involvement 65. ____

g. How would you describe your personal involvement in the discussion of your group?

Little or no involvement 1 2 3 4 5 6 7 High involvement 66. ____

h. How would you describe communications among members of your group?

Guarded, cautious 1 2 3 4 5 6 7 Open, authentic 67. ____

i. To what extent do you feel people in your group really listened to each other and tried to understand the various ideas being proposed as solutions to problems?

We did not listen to each other. 1 2 3 4 5 6 7 We listened, we understood and were understood. 68. ____

j. How would you describe the controls or influences on the direction of your group?

Control was imposed on us. 1 2 3 4 5 6 7 We controlled ourselves. 69. ____

70,71. ____

10. Was the length of the conference satisfactory?

1. Yes ____
2. No ____ 73. ____

If not, how many days to you think it should have been?____days. 74. ____

11. Was the size of the conference satisfactory?

1. Yes ____
2. No ____ 75. ____

If not, how many people do you think there should have been____people 76. ____

77,78. ____

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