The Learning Systems Institute: Prospectus for 1964-65[1]

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The Learning Systems Institute was created to serve with the Human Learning Research Institute as part of a college-wide research and research translation enterprise. During the first year of operation the Learning Systems Institute has identified several areas in which it could make contributions to the College, the University and to education at large. The explorations have been delimited by the original charge to the Institute: To design and implement speculative models for educative systems and instructional subsystems. The speculative factors in the models are to be replaced by knowledge as evidence about former uncertainties is developed through basic research in human learning.[2]

Definitive accomplishment of these objectives will require the ultimate development of a large and comprehensive Institute; yet in the early years the energies of the Institute must be even more precisely delimited.

Two Paths

The translation of basic research into proposed models for instruction and management systems can proceed along two very different paths of activity: (1) highly practical and perhaps transitory projects concerned with improvement of local learning situations, and (2) complicated, remote, and perhaps esoteric projects with limited potential for short-range returns.

Characteristic of the first path is the Institute's project to produce two pilot System-Designed Courses for multi-media presentation as off-campus instruction. The project is valid on several counts, not the least of which is its likelihood of producing new instructional procedures and development techniques which could be used for improving on-campus instruction. It will seek a step-by-step improvement in one contemporary educational problem by applying newer technology and a new strategy.

The second path leads to such far-reaching projects as the Institute's proposed Human Learning Information Center. In this sort of research and development the long-range values are conceivably great, yet the development costs are formidable and the demonstrative proof of a project's validity is sometimes lacking until remote milestones are reached.

It is concluded after the exploratory year that these two paths can be taken simultaneously and perhaps compatibly; therefore, the Learning Systems Institute will engage in selected research activities on both of these paths, adopting as a cohesive central motive the interaction of long-range and short-range development research for the strengthening of both.

Two Focal Points

Delimitation of the Institute's activities for 1964-65 will be in terms of two focal points. Both focal points are challenging areas of research, they promise ultimate interaction and they encompass the development realms to which the Institute was originally committed: 1) a behavioral science

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[1] Ted Ward. The Learning Systems Institute Prospectus for 1964-65, College of Education, Michigan State University, September 22, 1964

[2] *The Learning Systems Institute Charter*, August 22, 1963, p. 3.

practitioner orientation for educators, 2) instructional technology and system design, and 3) research translation.

Human Learning Information Center. The 1964 exploratory project in information retrieval (IR) has been completed. Design of an appropriate experimental system and formal proposal for outside support are the objectives for 1964-65. It is anticipated that a five-year project will culminate in the operation of a national repository and computer-based retrieval system for the broad field of human learning research data. The creation of such a system for use by scholars in human learning throughout the world would be a decisive step forward. To establish the system *here* would command a national position of leadership in this area so vital to the behavioral science of education.

The MSU-LINCENT system will be the first hybrid IR system utilizing an all-electronic base. Present plans call for a disc/tape computer search subsystem electronically cued to a video-still document display with 3J-second hard-copy output on command. This hardware application is original with the MSU-LINCENT; it represents a step forward from IR systems utilizing film-processing units. But far more difficult problems rest in the strategies of input coding and classification, selection of search criteria, improvement-of-system feedback design and allied problems. Much research and some experimental testing will be required. The objective is a system which will relate itself to user *questions*, not just organize itself into library-type topic listings.

Related Projects. There will be a small number of spill-over projects and activities which relate the products and by-products of the IR research to contemporary problems of schools. A current example is the Invitational Conference on Photo-Mechanical Systems for Information Management In Schools planned for November 1964. This conference has grown out of the Institute' s exploratory studies of information systems hardware.

Clinic-School Development. The preliminary work in two centers (Macomb and Grand Rapids) during the Spring and Summer of 1964 is to be extended into more phases of the intern training program in these centers and others.

The Clinical Procedures Manual, in its prototype form, will be put into use during the Fall term. This manual contains a collection of over 150 hypotheses for teacher behavior drawn from actual classroom incidents. Each statement consists of a description of an incident, the teacher's professed rationale for making the described decision and an observation of the consequences of the decision; most statements also include a list of appropriate alternative decisions which the teacher could have acted upon. This unique manual has been drawn entirely from teachers' observations of teachers; the statements were selected from among a much larger collection by the University's intern consultants (highly regarded public school teachers). The manual represents a prototype achievement of the first two objectives of the Clinic-School Project: 1) to document the "hunches" which teachers in our training centers are operating upon, and 2) to produce an item of training material which embodies the concept of a clinical approach to methodology.

The work for this year will concentrate on establishing routines to realize the cyclical concept of clinical operation (evaluation-deduction-decision action-evaluation) within the teacher education environment.

The Clinical Procedures Manual will soon be ready for scrutiny by learning researchers, who will be invited to write critiques of those operating hypotheses which seem questionable in light of learning research. Procedures will be designed to bring such challenges into the language of the teacher in such a way that the research-practice gap can be bridged.

Related Projects. During this year a plan for the long-term development of the clinic-school centers will be designed. The plan will include specific provision for enlisting the cooperation and support of public school districts for the establishment of laboratory classrooms and clinical classrooms for research and field demonstration.

An essential part of this plan will be the designation of ten to fifteen school systems and educational agencies as Demonstration Centers which will be the focal point of large-scale trials of new procedures and materials. Commercial and industrial producers of education-relevant equipment and teaching materials have shown substantial Interest in participating in development and demonstration projects through such a network of centers.

A publication network can be built upon the Demonstration Centers. The ten to fifteen selected school districts will be differentiated and described in a basic publication in terms which would allow a school administrator at another location to identify the demonstration center (a clinic-school in each case) most nearly like his or her own. Thus it will be possible to create communication channels that focus the dissemination of new procedures and materials. The venerable maxim that "every school is different" leads to the common assumption that every school must engage in its own discovery experiences; this assumption will be challenged.

To enable selected clinic schools to participate in new technology development, the Institute has engaged in extensive conversation with leading producers of new instructional equipment. These contacts include IBM, Eastman Kodak, *3-M,* and SRA. Each of these companies has demonstrated strong interest in such a plan for field research, system development, and demonstration. Much of the strength of this plan derives from the platform of Intensive clinical training which undergirds the research on non-human components; shifts in human roles can be made as required for optimal use of the new technology. Specific proposals have been written for several applications of computer technology to education; most significant is the possibility of establishing a sizable research project in programmed instruction with computer control (CBI: computer-based Instruction).

Two other projects are to be continued because of their potential value and relationship to the Clinic-School Development:

a) The System-Designed Course development promises to set a pattern for multi-media instruction with marked increase in student-to-teacher ratio. Although the development project (to produce two pilot courses) is sponsored by Continuing Education, the implications are highly relevant to the instructional problems common to the course work in the intern centers. This project is attempting to apply new technology to the instructional task in such a way as to extend the potential of a given instructor and reduce the energy and costs expended in extensive inter-center travel.

b) The School of Tomorrow project will continue. Its primary objective for the year is the development of a proposal for outside support. Strategies for long-range school model design must be built for the guidance of the Clinic Schools and for the selection of Demonstration Center projects.