Learner Controlled Instruction

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Learner Controlled Instruction is a strategy that shifts power from the instructor to the learner. Power, or control, is a topic often avoided in discussions of instructional design. The avoidance is usually unintentional. Our assumptions about instruction traditionally place control and power in the hands of the instructor. For example, it is assumed that the instructor will establish the content of the instruction. The texts and course materials are reviewed, narrowed and edited by the instructor before the learner is allowed contact. The control of content permits the control of presentation device. Content is often pre-packaged in a single format. So, with the selection of an information resource the presentation mechanism is also selected. The power to make these selections is traditionally the prerogative of the instructor. It is also assumed that the instructor will establish the sequence of instruction. The power to control sequence often controls both route and pace. The learner who is "behind" is rarely permitted a digression from the pre-established sequence. The learner who is "ahead" is often driven to digression. But in either case, it is not traditionally assumed that it is the learner who has the power to control the sequence.

It is also regularly assumed that the instructor is responsible for evaluating learning achievement. Through the evaluation, the instructor is to provide feedback to the learner as learning progresses. At some point in time or content the instructor, it is assumed, will issue a judgment that labels the student as learned or unlearned.

These assignments of power are often made unthinkingly. We assign them to the instructor because that is where they have traditionally been placed. There is, however, an alternative.

Power, that is, control of instructional decisions, can be delegated to the learner. And in some cases, such delegation is advantageous to both learning effectiveness and efficiency. The strategy of systematically delegating instructional decision-making to the learner is Learner Controlled Instruction (LCI). The delegation of instructional control is constrained by three factors:

1. A variety of content informational sources must be available.
2. The designer must be able to state the objectives of learning.
3. There must be adequate tools to measure the acquisition of a knowledge or skill.

If resources, objectives, or measurements are not available, delegation of control cannot occur. Conversely, if all are present then delegation becomes possible.

A moment's reflection will clarify the need for these requirements in a LCI design. The learner will be making the decisions. But, designers must be able to predict, with some degree of accuracy, the product of the program. In Instructor Controlled Instruction, judgements and decisions that allow manipulation of the learning outcome can be continuously and concurrently made by the instructor based upon the responses of the learner. In LCI, though, an environment is created in which the learner must be capable of making those same manipulations without the aid of an instructor. To accomplish this, the learner needs three basic bits of data: knowledge of the learning destination, a means of getting there, and a way of confirming arrival—Objective, Resources, Measurement.

In today's sophisticated world these elements are often available to the instructional designer. Consequently, LCI has been experimented with and applied in an ever increasing scale.

Tracing its roots from the infant school movement in England and the open classroom in the United States, LCI is now being applied in the business sector in both basic training and management development programs. The applications are found across a broad range of industries. Allied Supermarkets, Inc., in a pioneer program, used LCI in the training and development of retail store managers. Marriott Hotels, Inc., has used LCI to train sales representatives in disciplines ranging from cost analysis to preparation of market reports. Connecticut General Life Insurance Company uses LCI as a basic training strategy. The Sherwin Williams Company has made extensive use of LCI in management development.

The subject matter application in both the academic and business world is also extensive. Name recognition for meat varieties, basic accounting, sales techniques, labor relations, time management, and even college level courses in psychology are a few of the subjects being taught in the LCI mode. The range of potential applications is generally limited only by the willingness and the capability of the instructional designer to delegate decisions heretofore reserved for the instructor.

Delegation of authority, though, is easier promised than practiced. The design of a LCI program requires rigorous research, analysis, definition, and validation. Efficient learning is not a casual exercise. In Instructor Controlled Instruction, preparation is a key to success. In LCI it is critical. The designer must not only anticipate the behavior of the learner but the order and disorder of the environment. This may be best illustrated by looking at the Learning Experience Subsystem which is a subsystem of the Learning Program System in LCI.

The Learning Experience diagramed in Figure 1 consists of a stimulus that will elicit a skill demonstration response. The response is assessed and the resulting action is either entry into a learning exercise or an exit from that particular experience into the next. In Instructor Controlled Instruction, the instructor must often control the stimulus, the skill assessment, and the conduct of the learning exercise. To illustrate, upon demand or prompting, the learner is signaled by the instructor to demonstrate a skill. The instructor has control of the timing, topography, and intensity of the stimuli. The learner responds by emitting a demonstration of the skill, usually in an environment pre-selected by the instructor. The instructor then evaluates the response and determines whether a learning exercise is required. In LCI, stimuli, skill demonstration, environment, and assessment are all functions of either the environment

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or the program. As such, they must be treated differently than when they are the function of the instructor.

The model that depicts a LCI learning experience is shown in Figure 2. The primary distinction between Figure 1 and Figure 2 is the addition of the subcategories “natural” and “simulated” to each event. Using the stimulus event as an illustration, consider that the stimulus may be a natural part of the environment (2.2.1.1.1) or it may be simulated (2.2.1.1.2). Events that occur in time such as nightfall, a change in seasons, or the beginning of a week and that elicit a response are natural stimuli. Examples of other types of natural stimuli are predictable confrontations such as a disagreement or predictable problems such as recurring job vacancies. When natural stimuli exist, they can be used to trigger a skill demonstration. However, we are not always lucky enough to have appropriate natural stimuli occurring at the right time. When it doesn’t, the designer has to create an engineered or simulated stimuli to elicit the desired skill demonstration. The simplest way to produce the action may be an audio or visual command such as “complete the case accounting form.” More complex simulated stimuli will involve the creation of situations that appear to be natural such as the sounding of a fire alarm or a role play telephone call. In LCI, the

instructional designer must identify and accommodate each of the subcategorized events within each learning experience. Once identified they can be used, or if necessary, neutralized.

The tasks of research, analysis, definition, and validation for each subcategory of each event in each learning experience in a learning program are as time consuming as they are necessary. It is from these tasks that the delegation of decision making gains substance.

The substance takes on form when the LCI program, particularly the individual learning experiences, are designed. There are seven major steps in the LCI design process:

1. **Define the mission.** The mission statement is broader in scope than an objective. It provides the initial framework, including constraints within which the designer must operate for determining outcome commitments.

2. **Define the population.** This definition requires identification of characteristics that will allow for assumption of the presence of skills or knowledge and probable learner responses. To aid in this definition the demographics, subcultures, and capabilities of populations are analyzed.

3. **Define the required performance results.** This step more specifically defines the outputs of the program. The statements contrast the input of the system against its output in terms that will allow evaluation of the design as well as direction for its construction.

4. **Define the environmental specifications.** In LCI, the environment with all of its cues and consequences is a key resource. It is defined by gauging its forces and how they relate to the anticipated learning. This involves attention to learning objectives, potential learning experiences, entry criteria assumptions, the designer’s theory about the framework of activities, and the assumptions about the consequences of an action.

5. **Construct the learning experience.** For each learning objective there will be one or more learning experience(s). Collectively the experiences will make up the formal learning program. Each experience will have six elements:
   a. A statement of objectives
   b. A description of activity
   c. A measurement for assessing proficiency
   d. A standard of acceptable performance
   e. A description of learning resources
   f. A time plan for accomplishment

6. **Validate the design.** The tasks of validation are neither mysterious nor complex. But they are time consuming. By specifying the desired outcome, applying the learning process, measuring the actual outcome, and comparing prediction to reality, the teaching effectiveness of any program can be validated. Since LCI is instructor barren, the seed of its success lies in the validation of its process.

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Figure 2. Tic-Tac-Toe Graphically Illustrated

Games are fun. They can be used as highly effective vehicles for learning. Frame gaming is one design approach that allows you to produce games that work because the frames have already been tested and proven many times over before you try them. It is easy to get into the game design game using frame games. Wanna play?

References
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Tutorial System
(continued from page 7)

7. Package the program. While the designer will not be a part of the learning environment, the learning materials will. Their presence can be used to advantage by insuring that they stimulate entry and exploration rather than impede it.

These steps, briefly described, provide a framework for the construction of a program in which decisions can be delegated. The integrity of the designer will determine the relevance of the delegated decision. Meaningful options from which to select must be based on data. It is possible to provide learners with knowledge about their knowledge options only through rigorous research and definition. But, that is not enough. The designer must then format the knowledge, the objectives, resources, measurements, and constraints in such a way that they can be easily accessed by the learner. If the access controls, designed to allow learner control, are more aversive than constraints of instructor control, the learner will opt for the instructor. Such a decision would waste much of the designer’s effort, but the decision would nonetheless be legitimate.

Power to make instructional decisions can be transferred. The experience that says it can be done is there. So is the process. Whether power should be transferred is a question of learning efficiency and effectiveness, of cost and result. Whether it will be transferred is a challenge to the design skills of instructional designers. Who should make that decision?

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