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ABSTRACT

Rapid development of computer-based instructional methods, combined with the rapid evolution of the Internet and the World Wide Web, have made it technologically possible to develop fully interactive self-study materials. While programmed instruction methods were developed in the 1960s and early 1970s, they were not widely used and, although lessons learned from early research may be applied, new technology has generated new questions. One of the most perplexing of these questions centers on the locus of control. How much control should the learner have, and how much should be retained by the learning program? Maintaining appropriate controls when instructional materials are put on the Web is an example of one problem. Presence of "hot links" invite the learner to jump through cyberspace because they imply related, although not necessarily hierarchical, information. Once a learner jumps to a related Website, nothing can yet guarantee that the learner will return to the learning program. What teachers can do to maintain appropriate controls in that environment is, as yet, undetermined and can only be answered by working teachers willing to build interactive multimedia materials, then conduct applied research. (Contains 16 references.) (Author/CR)

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Programmed Instruction and Interactive Multimedia:

A Third Consideration

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Abstract

Rapid development of computer-based instructional methods, combined with the rapid evolution of the Internet and the World Wide Web, have made it technologically possible to develop fully interactive self-study materials consistent with the dreams of scholars and teachers who developed programmed instruction methods in the 1960s and early 1970s. The lessons learned from early research may be applied, but the new technology has generated new questions.

One of the most perplexing of these questions centers on the locus of control. How much control should the learner have, and how much should be retained by the learning program? Theories of learning and instruction have provided some help, but the rapid development of the Internet and the World Wide Web have presented new problems. How will we maintain appropriate controls if we put our instructional materials on the Web? Presence of "hot links" invite the learner to jump through cyberspace because they imply related, although not necessarily hierarchical, information. And once a learner jumps to a related Website, not even frame technology guarantees that he or she will return to the learning program. What, if anything, can teachers do to maintain appropriate controls in that environment?

Such questions can only be answered by working teachers willing to build interactive multimedia materials, then conduct applied research.

Programmed instruction research conducted in the late 1960s and early 1970 generated much enthusiasm among educators in communication studies. Programmed Instruction (PI) was the result of an attempt to develop fully interactive self-instructional materials that could be printed as textbook materials. Using PI, learners were freed to follow their own enthusiasms, at their own speed, studying only those parts of a text that they needed or wanted to study. The initiative didn't sustain itself, however, and in 1983, Hanna and Gibson (1983) argued that programmed instruction was an idea behind its time because the advent of computers had rendered paper-based instructional technologies obsolete.

During the late 60s and early 70s, PI was the rage in academic circles. People argued about the relative efficacy of linear vs. branching programs, and about programmed instruction vs. other forms of instruction. Three findings from a massive research literature stood out (Hanna, 1971).

First, programmed instruction worked as well as other forms of instruction. Learning objectives were achieved as readily and as accurately under conditions of programmed learning as they were in the traditional lecture approach or the lecture-discussion approach to teaching. Indeed, the most frequent finding of studies that compared the relative effectiveness of these methods was *no significant differences*.

Second, programmed instruction was dramatically more efficient than traditional forms of instruction. Generally, students working on their own, using programmed instruction, achieved objectives in less time than required for traditional methods of instruction.

Third, people liked programmed instruction methods at least as well as other forms of instruction. However, researchers reported a considerable feeling among subjects that they would not prefer programmed instruction to the exclusion of other teaching methods.

But Programmed Instruction methods did not catch on. Through the early and middle 1970s one of us was involved in six book projects. Every one was shown in research to teach, and every one a financial failure. We finally came to the conclusion that PI was a technology behind its time—that the advent of computers had rendered a paper-based technology obsolete even as it was being developed.

We now believe, in retrospect from the vantage of 1996, that the initiatives of programmed instruction scholars were very farsighted. Many of the images and aspirations those scholars entertained could not have been fulfilled because computer technology was in its infancy. By 1992 it was clear that advances in interactive computer technology were making the dream of those earlier scholars technologically possible. By 1996, CD-ROM hardware and software technology has brought about an environment in which fully interactive multimedia allows scholars to pick up the thread that ties their work to programmed instruction. Moreover, the sudden explosion of interactive capability on the Internet, and the ability of computers to perform complex mathematical functions, as well as display photographs, digital quality stereophonic sound, full-motion, video and animation, has made developing such materials a pleasant, and not-too-difficult task, even for the relatively unsophisticated computer user.

One purpose of this essay, then, is to say that Hanna and Gibson were wrong. Programmed Instruction was not behind its time—it was 15 or 20 years ahead of its time. A second, and far more important purpose is to argue that the unanswered questions from the late 1960s and early 1970s about programmed instruction methods and technology are germane to the current interest in interactive multimedia as a teaching method. We call for a research program. That can only be accomplished by teachers willing to use—and test—interactive multimedia in their work. If such a research is to be mounted, it must build on what we already know.

In general, the goal of Programmed Instruction was to teach by asking a series of carefully planned questions. Correct responses led to additional questions. Incorrect responses led to explanations and examples designed to correct the error. Sometimes the program returned the learner to the original question; sometimes it asked a new question.

Think of ***interactivity*** as a design concept that involves exchanging information in real time between the learner and the medium the learner is using. In this sense, interactivity is a thinking function, not a computer function. A truly interactive program engages the learner and responds to learner interests and prior knowledge. A truly interactive program adapts as it is used. The learner makes the choices about what information will be presented and how the information will be presented.

The most important feature of Programmed Instruction was psychological. For PI materials to teach, the learners had to identify with and pay attention to the program materials for an extended period. It became evident early in the development of PI that these critical features were best met by branching rather than linear designs. Learners remained interested and attentive because they felt they were in control. They determined what they would answer. In a sense, the final form of the program was a function of learner curiosity. They identified and paid attention because they took part in creating the program.

Similarly, the most important feature of the new interactive technology is also psychological, and for the same reasons. Learners remain interested and attentive because they feel they are in control.

Programmed instruction materials had at least four characteristics in common: (1) learner attention was drawn to a limited amount of material, (2) a response was required of the learner—usually an overt response such as filling a word or phrase into an incomplete sentence, or manipulation of keys on a teaching machine, to select from among the alternative answers to a question, (3) the materials provided immediate knowledge of results, and (4) each learner proceeded at a personal, optimum pace, along the path through the learning materials. Then as now, individualized instruction through the judicious application of interactivity was the most significant advantage programmers could contribute to learning materials.

PI had very severe limitations. A programmed book could have text, color, graphics, photographs, and limited interactivity. In large measure, Programmed Instruction was instruction by trial and error. And although the learners could choose one answer over another for a given question, they had to follow a path that was, in some sense, determined by the program designer.

With the evolution of computer technology, what has come to be called "interactive multimedia" offers everything a book can offer, plus full motion video, sound, and most important, complete interactivity. Now is it possible for programmers to present videotaped examples, animated drawings, numerous still photographs, interactive "magic genie" type outlines, text materials that are both displayed and read, with flashing highlights, sound cues, and the like. Computers can keep records of a learner's path through materials, count the number of right and wrong answers, analyze the pattern of errors, and display information on demand. But notice that a fundamental change has occurred. The interactive materials stored on CD-ROMS actually do turn control of the path over to the learner. How much control is wise and prudent to give to the learner? How much should be retained by the teacher?

But many old research questions remain unanswered, and the new technologies have created new questions, as well. For example, since paper-based technology did not allow the extensive, free-wheeling interactivity now possible, the question about how interactive control provides optimum learning, and under what conditions, was never fully answered. Indeed, since all the sequencing was determined by the author who designed and published a programmed text, the question of how much control should be given to the learner, was never even fully understood.

Instructional Control Options

One of the most powerful and important features of a computer lies in a virtually unlimited range of instructional control options. Indeed, program designers may now use at least seven different levels of interactivity, each with its own particular set of benefits and problems (Gayeski, 1995).

1. direct address

Direct address is a scripting technique in which the program talks directly to the learner. It can be accomplished by use of "you," and by incorporating rhetorical questions. The author can create a feeling of interactivity in the learner. For example, the programmer might produce the sentence: "If you're like most of us. . . ." Direct address can occur in almost any device, from print media and videotape through the most sophisticated and complex electronic technology.

2. pause system

A pause system lets the user control message playback. Any video player with accessible controls provides an example. The purpose is to let the learner—or require the learner—to control the rate of presentation, usually to physically break out and away from the program into some other activity. Pause systems are used when the learning task involves learners in a discussion, or in some activity like answering questions in a work book.

3. random access

The term "random access" refers to any medium that provides users the ability to skip around. A remote control device for cable television provides an example. This is the first level in which interactive branching is available. A random-access slide projector was available in 1968 that allowed learners to control the sequence for viewing 35-MM slides (Hanna, 1971, 40-42).

4. responding device

A step up from random access devices, a responding device allows the user to enter at any location in a program and wander through the materials randomly. Responding devices also can return the user to a previous location. For example when you use a simple kiosk at the entry to a large shopping mall, you are using a responding device. Users are limited to numerical responses or to choices from alternatives shown on a screen. The keypads have only numbers and arrow keys (or a joystick) for users to manipulate. Sometimes such responding devices are equipped with touch screens and no other input devices whatsoever.

5. *computer*

Most people think of computer systems when they think of interactive media. Such systems typically include a personal computer with both internal and external storage devices, including CD-ROM access and playback, keyboard, mouse, and other input devices such as a drawing "tablet," for example, that can generate digitized free-hand art. Typically, also, such systems include capability to pick up data from a VCR or videodisk player, and to generate digitized moving images with coordinated sound.

Computer systems add lots of complexity, hence much flexibility, to an instructional designer's repertory. Users can type in whole words, sentences, and the like, in response to the program. Even groups can work with the program at the same time, and, in more sophisticated networked systems, interact with each other as well as with the system. So, clearly, computer based systems are truly interactive.

6. *response peripheral*

Response peripherals add still greater flexibility to interactive multimedia, since learners can use light pens, joy sticks, data gloves, and the like, to interact with the interactive program. The "virtual reality" arcade games provide an obvious example of response peripheral systems. The user "wears" the system, and sees his own movements and responses as part of the display that he is interacting with.

7. *"'intelligent" system*

An intelligent system is more the result of design than of equipment. The term "recursive" is often used to refer to such intelligent system design strategies. A recursive program alters itself based on its experience. A user actually "teaches" the program to adapt itself to the user's patterns of behavior. For a primitive example, the program might ask for information such as "Are you a woman or a man?" then branch to appropriately designed information based on the user's answer. The user's response will have had a direct impact on the outcome of the program. In more sophisticated systems the computer actually begins to anticipate the user's likely responses by learning from the history of interaction.

Researchers have studied the matter of control, of course, and they have generated a large body of research literature. One key variable in determining how much control to give a user turns out to be the user's ability. Learners with low ability, and highly anxious learners, prefer, and do better with greater structure and less control (Como & Snow 1986). In another example, Susan

Gray (1989) studied the relationship between locus of control and information retrieval and retention. Her data suggest that learners are better off if they do not have maximum control over the sequence of instructional content, but they should have control of the sequencing when they review learning material.

As long as we keep a learner within boundaries of our instructional materials we can maintain some modicum of control. However, rapid development of the Internet and the World Wide Web has greatly exaggerated the design problem. To illustrate, suppose a programmer determines to make instruction available from a distance by placing programs on a WWW "home page" rather than storing them on a CD-ROM disk. As soon as the learner follows a "hot link" away from the home page, any external controls evaporate. The student is then entirely on his or her own. Not even frames technology can guarantee that the learner will return to the lesson.

Users on the WWW expect rich opportunities for branching and "surfing." Anyone who has ever surfed the Net knows that it is very easy to get lost, and that doing so can be addictive. How would the educational programmer manage control of the branching in this case? This one question of control has not been fully answered—and it won't be until working teachers help each other find the way by doing applied research.

It seems clear to us that the decision to move toward individualized interactive education—the goal of programmed instruction methods in the late 1960s—has already been made. Whether we do it well or ill remains for us to answer. And the quality of what we do will depend on the quality of our research. So we call for a renewal of the research initiative begun in the 1960s. The questions are many and varied and the labor will be intensive. But imagine the benefits our students will realize from a well designed and enthusiastically pursued research program.

Imagine

A public speaking student is assigned a 5-to-6-minute speech to inform. The focus of the assignment is on introductions and conclusions. The student goes to a lab with her idea, logs on to the department's Internet page, calls up "public speaking," finds a button called "model outlines," selects that and brings up a page with a number of choices. She chooses the button labeled "Model outlines for informative speeches" and finds items called "Sample introductions," "Sample discussions," and "Sample conclusions." She can view full-motion videos of people giving introductions. She can open example outlines. She can download the model she wants or print it out, to use as she constructs her own outline.

Suppose she decides she wants to reference today's news. She opens the *USA Today* home page on the Internet, downloads relevant materials, jumps over to the *CNN* home page to verify and cross reference her materials, then downloads a full article from one of the papers of record—say, the *Chicago Tribune*. The computer helps her organize all this material and suggests a speaking outline for her practice and presentation.

Suppose a second student wishes to study for his Communication Theories midterm. He opens the department's home page, clicks on Undergraduate Courses, then Communication Theories, and finds a menu that includes Practice Tests. The student can either review an entire test, or take the test interactively, then receive immediate feedback about his results, plus instruction aimed at correcting his error. The test can be taken all at once, in small chunks, or one question at a time. The student's score also can be saved for use later by the professor.

Or, perhaps the student must be out of town during the regularly scheduled midterm. In that case he might click on an item called "Midterm Examination." An opening menu asks for his name, his identification number, his password, and his mother's maiden name. The test opens, the student takes the test, and the results are recorded as part of the student's course mark, and reported immediately to the student.

All these options are currently under development. But which strategies are wise and which are merely superfluous? The quality of educational materials available to computer users will continue to depend upon thorough-going research, well grounded in learning and instructional theories.

Theories of Learning and Instruction

Learning theory followed two paths. Response-centered learning theory was modeled after simple trial and error; stimulus-centered theory was modeled after cognitive, or field theory learning. Hebb (1949) provided a convenient classification system to separate these two approaches in 1949. He labeled the response-centered theorists "connectionists," and the stimulus-centered theorists "configurationists." Basically, response-centered theorists are concerned with the effects and conditions of practice; stimulus-centered theorists are concerned with concept formation and the association of ideas.

These two approaches have competed for a long time. For example, Thorndike's (1932) *Fundamentals of Learning*, published in 1932, has a strong response-centered orientation. In the same year Tolman (1932) published his book, *Purposive Behavior in Animals and Men*. It has a strong stimulus-centered orientation. The position that programmers took in the debate clearly influenced the way they designed learning programs.

Then, in 1977, Albert Bandura (1977 a) published his *Social Learning Theory*. For people interested in computer-based instruction, Bandura's had made a significant breakthrough. His central argument was that people can learn by observing others. Vicarious experience underlies human changes. In addition, Bandura demonstrated unequivocally that modeling behavior could have as much impact on what we learn as can direct experience. Computers could provide this vicarious experience in rich amounts. Later Bandura argued that learners process and weigh information concerning their own capabilities, and on that basis, make choices about their behavior and the effort they will bring to a learning situation (1977 b) . He termed this weighing and processing "efficacy expectation," and suggested that people use four types of information to form such an expectation: (1) personal accomplishments, (2) social comparison to the successes or failures of others who seem similar in ability, (3) rhetorical effect, in which we are persuaded of our capabilities, and (4) emotional arousal, meaning that we feel less able to cope with some aversive situation if we feel tense or agitated.

Clearly, computers are exceptionally well designed to provide these four kinds of interactive information. Bandura's work informed much of the vibrant thinking that produced early examples of computer-assisted instruction.

Goal setting and feedback.

About the same time Bandura brought out his social learning theory, Locke (1981) and his colleagues published a piece tying goal setting to task performance. Their paper has profound implications for interactive multimedia designers. After careful review of the literature about the effects of goal setting on behavior, they reported that in 90-percent of the lab and field studies, specific and challenging goals lead to higher learner performance than do easy goals, "do your best" instruction, or no goals at all. They also found that feedback concerning the degree to which the goals are being achieved is essential if goal setting is to have the desired effect. In other words, the materials must constantly challenge and motivate the learner. Moreover, the learners must accept the goals of the instruction, and they must believe that the instruction will help them to achieve other valued outcomes—for example, a raise, or a promotion (Raynor 1970).

The role feedback plays in effective learning depends on such variable as the type of feedback given, the frequency of feedback, and the delay between the feedback and instruction (Jonassen & Hannum 1990). In general, effective feedback is mature, positive, and varied. If the feedback is about an error, it should provide corrective or remedial information, hints, explanations, or cues toward the correct response. And the feedback should exist in sufficient amount to help the learner understand the material without overburdening him. These findings gave rise to the basic linear and branching designs in programmed instruction back in the 1960s, and they are directly relevant to our efforts in interactive multimedia today.

Thus learning theory underpins instructional decision-making for the new media. But learning theory is not a theory of instruction. A theory of instruction must guide the decisions about what a designer should do.

Gagne's Theory of Instruction

As early as 1962, in the infancy of paper-based programmed instruction, Robert Gagne (1962) argued that the best known learning principles were inadequate to handle the job of designing effective training. What was needed, he believed, was a grounded theory of instruction. A theory of instruction must ". . . attempt to relate specified events comprising instruction to learning processes and learning outcomes, drawing upon knowledge generated by learning research and theory (Gagne & Dick 1983)." In 1985 Gagne (1985) published his benchmark work, *The Conditions of Learning and Theory of Instruction.* In this book he outlines three central themes that constitute the core concepts of his thinking.

First, learning is best conceived as a set of internal processes that transform stimulation from the individual's environment into various forms of information to be stored and used. Second, learning outcomes, and therefore, instructional materials designed to achieve them, must aim at five categories of learning: (1) intellectual skills, (2) cognitive strategies, (3) verbal information, (4) attitudes, and (5) motor skills. Third, specific operations that yield the desired learning outcomes will be different for each of the five categories.

Based upon these three themes, Gagne proposed a series of external events that can be used to guide the learning process. They inform what programmers and instructional designers ought to do. It seems to us that they also clearly identify the essential categories of a research program.

1. Gain attention.

2. Inform the learners of the learning objectives.

3. Stimulate recall of prior learning.

4. Present the new material.

5. Guide the individual through the learning experience.

6. Elicit performance to determine that learning has occurred.

7. Provide appropriate feedback.

8. Enhance retention and transfer.

Recall that interactivity is a design concept that involves exchanging information in real time between the learner and the medium that the learner is using—a thinking function, not a computer function. Recall that a truly interactive program both engages the learner and responds to learner interests and prior knowledge, and that it is modified as it is used *because the learner makes the choices about what information will be presented, and how the information will be presented.* The question we do not know how to answer is, "How can interactive multimedia best be used to meet the eight requirements in Gagne's theory?"

Attractive, colorful interactive programs can obviously gain and hold attention. But what are the limits? How much interactivity is too much? Does movement, color, interactivity, etc., ever saturate a learner's ability to stay with a programmer's ideas? If so, when, and under what circumstances?

It is easy to use interactivity to help learners identify the learning objectives we have set out for them, but how can we guarantee that they subscribe to those objectives? Can we design into our programs a rhetoric that guarantees learners will accept the goals we set? Research can help us, but the research has not yet been accomplished.

Interactive multimedia are excellent instruments to stimulate recall of prior learning, but developers do not consistently incorporate efforts to do so into their instructional designs. Can we rely upon interaction with multimedia materials to trigger this important learning event in the user? Do we know how best to tap into what a learner already knows—for example, about how to organize ideas?

Possibly the greatest draw toward interactive multimedia flows from their ability to present new material in interesting and involving ways, to guide individuals through carefully contrived learning experiences. Computer based instructional materials are powerful in testing and record keeping. We know how to determine that learning has occurred. And, clearly, interactive multimedia are capable of providing appropriate feedback. Indeed, this may be the greatest strength of computer based instruction. It is, or can be, completely individualized, personal, and instantaneous. But do the interactive media enhance retention and transfer of learning? We think so, of course, but we cannot say for sure.

Other questions spring to mind. Chief among them, how do we keep the learners close to our materials if we provide them with free-wheeling and powerful opportunities to follow their own curiosity onto the Internet and onto the World Wide Web? How do we draw them back? And what are the risks to our carefully planned instructional efforts if we fail?

We have come full circle since the 1960s. The questions that faced us then still remain to be answered. Only, now, the need for answers has become more urgent. We have a lot to do if we are to realize the promise of the interactive multimedia.

References

Bandura, A. (1977 a). Self-efficacy: toward a unifying theory of behavior change. *Psychological Review, 84,* 191-215.

Bandura, A. (1977 b). *Social Learning Theory.* Englewood Cliffs, NJ: Prentice-Hall.

Como, L. & Snow, R. E. (1986). Adapting teaching to individual differences among learners. *Handbook of Research on Teaching.* New York: MacMillan, 605-699.

Gagne, R. M. (1962). Military training and principles of learning. *American Psychologist, 17.* 83-91.

Gagne, R. M. (1985). *The Conditions of Learning and Theory of Instruction.* New York: Holt, Rinehart, and Winston.

Gagne, R. M. & Dick, W. Instructional psychology. *Annual Review of Psychology.* Palo Alto: Annual reviews.

Gayeski, D. M. (1995). *Designing Multimedia: An Interactive Toolkit, Second Edition.* Falls Church, Virginia: Future Systems Inc.

Gray, S. (1989). The effects of locus of control and sequence control on computerized information retrieval and retention. *The Journal of Educational Computing Research, 5:4,* 459-471.

Hanna, M. S. (1971). *A Comparative Investigation of Three Modes of Instruction in Organization of Ideas.* Unpublished doctoral dissertation. University of Missouri, Columbia.

Hanna, M. S. , & Gibson, J. W. (1983). Programmed Instruction in Communication Education: An Idea Behind Its Time. *Communication Education, 32:1,* 1-7.

Hebb, D. O. (1949). *The organization of Behavior*. New York: John Wiley and Sons.

Jonassen, D. H. & Hannum, W. H. Research-based principles for designing computer software. *Educational Technology 21:2*. 106-117.

Locke, E. A., Shaw, K. N., Saari, L. M., & Latham, G. P. (1981). Goal setting and task performance. *Psychological Bulletin, 90*. 125-152.

Raynor, J. O. (1970). Relationships between achievement-related motives, future orientation, and academic performance. *Journal of Personality and Social Psychology, 15*. 28-33.

Thorndike, E. L. (1932). *The Fundamentals of Learning*. New York: Columbia University Teachers College.

Tolman, E. C. (1932). *Purposive Behavior in Animals and Men*. New York: Century.

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