On Instrumental Enrichment: A Conversation with Frances Link

Stephen J. Makler

Frances Link

For the past 18 months Frances Link has been the leading exponent in the United States of Instrumental Enrichment. In this interview she explains how the program helps adolescents and adults become better thinkers.

M: How does Instrumental Enrichment help students develop higher order thinking and problem-solving abilities?

Link: We intervene with experiences and exercises that are, in a sense, content free—that is, free of specific subject matter. The essence of each instrument is what it means to think. There are 14 instruments at the moment, each requiring certain paper-and-pencil tasks. Completion of each task is always followed by discussion—to help learners gain insight, and to give them an opportunity to tell how they feel about their ability to think and solve problems.

For example, the first instrument in the curriculum deals with organizational skills. That instrument transcends just about every cognitive function: the skills of planning, systematic search, the skill of perceiving relationships among and between various school experiences and real life. Each instrument is designed to mediate certain cognitive deficiencies, the ones that were often narrowly called perceptual disabilities.

M: What are some of these disabilities?

Link: Most low performing adolescents are underdeveloped or deficient in such skills as planning, collecting data, seeing relationships. Retarded performing adolescents who are failing, for example, do not automatically compare things in school. That doesn't mean they're unable to compare, but they do not do it spontaneously; they look at most new experiences in an episodic way. One reason is that schools do not help them build relationships among what they've learned. If students never relate anything to anything else, if they do not see wholes and parts, if they do not spontaneously compare, it's because no one mediated to help them see those relationships.

Incidentally, these abilities have an effect on every aspect of life—affective and cognitive.

M: You spoke of students as "retarded performing." What do you mean by "retarded"?

Link: It was Feuerstein who coined the term *retarded performance.* Anyone can be a retarded performer in some ways. Retarded performance results from a lack of mediated learning—not heredity, not emotional disturbance of a child or parents, not poverty of the group one comes from. Lack of adequate cognitive development

comes because no one provided mediation.

To give an example, retarded performers are compulsively impulsive. If you give them a piece of work to do, they may try it, get frustrated, tear up papers, and throw them away. They don't stop to think to collect all the data necessary to learn how to solve the problem, which means they do not have planning behavior—that's a cognitive ability.

"Retarded performers" may include the gifted—that's the field in which I did most of my early research. Some gifted students do not stop to think and plan, to separate relevant from irrelevant data—and some avoid subjects in which they have not succeeded in the past.

With these retarded performing students, we must intervene in a way that promotes both planning and synthesizing behavior until it becomes spontaneous. We must also intervene in affective areas to overcome previous feelings of failure.

M: What's a simple example of a mediated learning experience?

Link: Do you remember your parents saying, "You must wash your hands before you eat"? Remember when your parents no longer said that to you because you were automatically doing it? That's a mediated experience. Working with higher level skills, the way a teacher mediates is through questions like, "How do you know that's a correct answer? How do you check that it's right? Where else in life does this happen? Is there an alternative way of solving that problem?" So the learner begins spontaneously to consider possible alternatives when encountering a new problem to solve.

M: Instrumental Enrichment assumes, then, that failure to learn is due not to lack of innate ability,

but rather to lack of sufficient experiences in fundamental, specifically defined thinking abilities?

Link: That is certainly one major factor that led to Feuerstein's theory of cognitive modifiability. Feuerstein started by saying, "I have to figure out what cognitive structures lead to problem solving and thinking. What precisely needs to be mediated? What is the potential for learning?" He spent 25 years developing what he now calls the Learning Potential Assessment Device. It's an individual set of psychological teach-test procedures to determine where the deficiencies in cognition are. So the identification of the

deficiencies led to paper-and-pencil instruments or tools with which the teacher or counselor mediates, interacts with the student.

M: Interacts in what way?

Link: The materials of Instrumental Enrichment (IE) demand that you ask different kinds of questions of the learner, so that the materials and experiences of the teacher and learner become a kind of continuing interaction. It's a deliberate intervention between an adult and a learner with a very specific outcome in mind. As general intervention, if you're a math, reading, social studies, or industrial arts teacher and you teach IE,

you teach it two or three times a week, bridging into your subject area, bridging into real life. That's the real breakthrough in the curriculum.

Bridging is a vocabulary word of Instrumental Enrichment. We instruct teachers to bridge from the instrument—which in itself appears to be content-free, although it's not—to their own subject areas and to the students' real-life experiences. We used to call it "application." The point is that the questions the teacher asks lead the students to make the bridge.

M: As a teacher, how would you go about working IE into the classroom curriculum?

Link: The instructional sequence begins when I decide which of the cognitive subgoals I need to work on. I have a choice of six major subgoals, all geared toward deficiencies in what Feuerstein calls his cognitive map: the input, elaboration, and output skills at all levels. I introduce a format or a set of exercises by discussion to be sure the students are actually working on the right problem. The definition of the problem is very important in problem solving. The students must gather the data and decide what's relevant and not relevant in order to know what to do.

Then in IE they have a model against which to check the work, so self-checking becomes a part of problem solving. There are error pages—youngsters love those—where you correct someone else's errors. We reverse the process because part of problem solving is knowing how to check whether or not you're right.

Let me bridge. Why are errors important? Why did it take three weeks for top level people from government to identify seven possible errors at Three Mile Island? Why is it important for us to learn how to check our own errors or

someone else's? So that's a "mini-bridge." My "maxi-bridge" is when I can bridge directly into my subject matter.

M: You've been leading in-service sessions in IE for more than a year now. How are teachers responding?

Link: Training teachers to teach IE is very exciting. They come up to me and say, "Frances, I never knew I had so much in my head." Teachers begin to look at learners differently. They perceive what their problems might be, what their cognitive deficiencies might be.

Also, the instruments give a teacher an almost instant way of diagnosing a youngster's difficulty without going through any more testing. And it gets at the issue of relevance. Students no longer say, "What's this got to do with me and the world? Why am I studying this?" It's pretty marvelous for a teacher to say, "You're not only going to learn how to think; you're going to learn how to talk about how you think." And the students do. They'll say, "Boy, I really screwed up. I didn't systematically search. I didn't use the strategies." It's highly motivating. There's a tremendous power in being able to solve problems.

M: If students have not developed habits of logical thinking by the time they are in high school or junior high, it seems almost too late—but Instrumental Enrichment is intended for older students, isn't it?

Link: You can intervene at a later age; it's not too late. In fact, IE should not be used with children under ten. It is intended for adolescents on the verge of being pushed into representational paths. From that age on you can intervene at fifth, sixth, or seventh grade. You can have a three-year program, grades six through eight, or you can have a high school program, grades nine through eleven. We require that the program spans at least two years. In one year you'll develop motivation; you'll develop vocabulary; you'll get students thinking more positively about what it means to think; but you will not develop intellectual structures in one year.

M: Nicholas Hobbs suggests that such an optimistic approach to children's learning capacities could only have been developed in a country like Israel under pressure to make the most of its human potential. How did it come about and what are the parallels, if any, to educational problems here?

Link: It's interesting to be implementing a curriculum developed in Israel. Feuerstein is a Piagetian scholar but is foremost a man of the Holocaust. He spent his early teenage years in concentration camps but more importantly taking children across the borders from Central Europe and Africa to Israel. It was after the war, after working in Geneva and ultimately going to the Sorbonne—that Feuerstein was examining children and adults coming into Israel using clinical techniques of that time to see what kinds of education they needed. And he found something very interesting. In examining Moroccan Jews, who had come from rural areas of the country and "ghettoized" themselves in the cities, he found that being tested with the crude methods we still use—the Binet and the Wechsler—thousands of them would have been classified as mentally retarded.

Simultaneously he was examining Yemenite Jews, people who had lived in the hills and had no contact with the outside world for several generations. And here he found something very different—highly developed cultural groups with a sense of pride in themselves who were coming out on these tests as being very bright people. He found that when the Yemenites got to Israel, all you had to do was teach them the language, and they would influence the culture. If you visit Israel today you find that the music, the art, the dance of the Yemenites has indeed been influential. The question was—why?

I give you the history because I think it's taken 25 years for many in this country to decide how crude the standard methods of testing intelligence are. Feuerstein's generalization is not too deep. It is just that intelligence tests are merely testing what people have been taught, not what their learning potential is.

M: You seem to be saying that much of the aptitude testing done today harms rather than helps.

Link: We have learned to assess people so well and label them and group them—particularly ten year olds and above—and we leave them there. We leave them there

Frances Link (left) is Vice President of Curriculum Development Associates, Inc., Washington, D.C.; Stephen J. Makler is a free-lance writer in Washington, D.C.

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Evelyn Robinson replies:

My paper carefully and persistently calls for balance and moderation in the use of teaching approaches. It applauds the development of new analyses and promising educational trends, then deplores their misguided or excessive use.

My position is emphatically not one of either/or, the dichotomy of which I regard as a philosophical trap. Groff has been caught in it. This trap has been the bane of education for years, causing Dewey endless distress which resulted in *Experience and Education,* among other writings. Analytic and holistic teaching are not necessarily incompatible.

Link interview

by giving them a watered-down curriculum, by never challenging them in the areas these instruments are designed for. Can you imagine being in a high school math lab and being given third grade material? I mean, the motivation is dead—they're way beyond that. And that's what I call the hit-and-run curriculum: "Well, if we can just teach them to compute or to get through this next text, we'll have done a little something." That's nonsense.

Where adolescents are developmentally is ready to develop higher cognitive structures. You don't give them watered-down content; you stretch and develop those abilities so they can learn to solve problems at higher cognitive levels.

M: A number of recent studies, including reports of the National Assessment of Educational Progress in mathematics, paint a pretty dismal picture of student problem-solving abilities. Could IE change that?

Link: I want to help prove that all youth, especially inner-city students, can learn, and learn at higher cognitive levels. You mention National Assessment. I was excited to hear the educational leadership finally saying, "Sure, students can compute a little better, but they're not being taught problem solving, which means they're not being taught how to think." We now have a curriculum to intervene. E_L