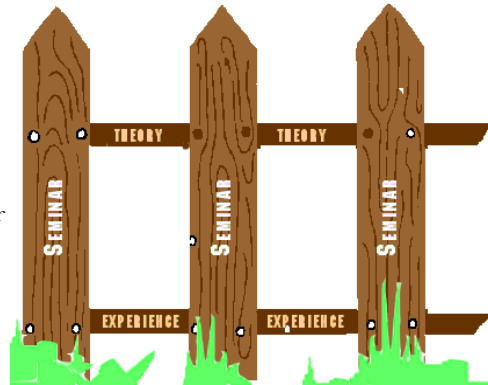




Rail-Fence Analogy for the Education of Professionals¹

Ted Ward

Good educational programming requires a balance and blend among a variety of experiences. Although there is essential agreement among professional educators about what sort of educational experiences are valuable, it is no longer popular to search for the “best way” to educate. The real issue in curriculum design is not what experiences are best, but rather, *how much of what kinds of experiences* should be used to achieve the intended objectives. A variety of acceptable curricular designs are now in use to train professional workers. Rarely do any two institutions use identical curricula to achieve given professional goals. Even the U.S. Office of Education, in its current efforts to seek out and encourage development of “model curricula” for the preparation of teachers, does not attempt to alter this trend. Instead, participating institutions are encouraged to design programs that reflect the particular resources, needs and capacities of local situations.



In this time of increasingly varied and creative approaches to the preparation of competent professionals, there is a special need to seek out a common set of guidelines. Such guidelines must stimulate and direct development projects without imposing limitations of an anachronistic sort. An observable trend in training for the professions (whether in medicine, engineering, architecture, theology or teaching) provides such a common base. Current curriculum development reflects three characteristics: a) increasing use of field experiences, b) more variety in methods of providing cognitive learning and c) greater articulation between field experience and cognitive learning through seminars, symposia, and other forms of “sharing” experiences. These three characteristics are illustrated through a metaphor. The diagram of a two-rail fence provides a useful picture of the three major functions of a curriculum for the education of a professional. The fence has three parts: an upper rail, a lower rail, and fence posts. Each part is labeled in the following manner: the upper rail represents the cognitive input, the lower rail represents field experiences, and the fence posts represent the seminars. The seminars are the linkages between cognitive experience and field experience.

The design for constructing a two-rail fence may be usefully compared to the design of a curriculum: Of what material is the top rail to be constructed? How substantial should it be? How far above the ground? Of what materials will the lower rail be constructed? How substantial should it be? How will it compare with the upper rail, in terms of separation and parallelism? What will be the nature of

¹ An unpublished document, 1960s. See the attachments to this document: Origin of the Rail Fence Analogy, and Commentary by Sam Rowen. See also, The Rail-Fence Analogy for the Education of Leaders. *Common Ground Journal*. Vol. 11 (1) Fall 2013: 47-51 (edited by Ted Ward for CGJ).

the supporting posts? What is the optimum spacing for tying the structure together in a supported, articulated and coordinated whole? In a fence there are two sets of variables that determine the desirable characteristics: the use or function of the fence, and the balance of the components. With reference to the former, a fence is “good” if it performs a designated function over a stipulated period of time. A decorative fence does not need to be strong enough to contain cattle, but a cattle fence may or, may not also need to be decorative. The fence’s function and expected durability in relationship to its cost are important considerations. With reference to the second set of variables, *balance*, the proposition is that a fence’s components, like the links of a chain, need to be selected or designed for balanced strength. The “weakest link” principle pertains; a fence is not made better by increasing the size of the upper rail (unless, of course, that had been the weakest link); conversely, to decrease the strength of the posts weakens the entire system.

More illustrations can be seen in the way the two sets of variables, function and balance, relate to each other. For a start, consider the matter of spacing between the posts: for a decorative function, the spacing can be longer than for a fence that must restrain livestock. Spacing of the rails is also dependent on function—rails must be closer to each other and closer to the ground for sheep than for horses.

The Upper Rail: The Cognitive Input

Although the ability to recall information (facts and figures) isn’t all there is to education, its importance must not be discounted. “Cognitive input” refers to the learning of the informational knowledge. Cognitive input is basic to competence and excellence. What is cognitive (knowable as information) ranges from simple concrete facts to abstract concepts and problem-solving strategies. Cognitive input, in a sense, concerns the “things to be learned”; but it would be more useful to think of cognitive input as *the information that can be learned by reading, hearing, or looking*. Cognitive input is provided through a wide variety of instructional modes: through textbooks, assigned readings, lectures, recordings, films and programmed instruction of several sorts. “New media” of instruction are sometimes employed so that the cognitive input can be more effective or learned more efficiently.

Unfortunately, it is often the cognitive input component that is likely to suffer from a learner’s low motivation and from rapid obsolescence of the content. A curriculum that over-emphasizes cognitive input is likely to be characterized by high drop-out rates (premature withdrawal) and by frequent complaints about irrelevancy.

The Lower Rail: Field Experiences

Recognition of field experiences as part of the curriculum of education for the professions is clearly a trend. For years in the past, internships, apprenticeships, and similar field experiences were suspect as being inferior substitutes for truly scholarly learning. Some said that learning that could not be committed to the form of print should not be recognized as educationally valid. Today many of the problems in the professions are so new that textbook answers are not available. Books alone cannot provide all that is needed for a timely and substantial curriculum. Getting experience “where the action is” seems to be one useful answer for the demand that education be relevant.

Early in this century, clinical experience was recognized as a necessary part of medical education. The Carnegie Foundations’ support of Flexner’s study of medical education in the United States played an important part in this development. First, clinical experience was recognized as an essential part of modern medical education. It then followed that field experiences in general have

been acknowledged increasingly as a valid aspect of the curriculum in virtually every professional field.

Field experiences are not all the same. For example, the degree and kind of supervision varies from one program to another. But the essential ingredient remains the same: exposure to the environment and “life problems” of the practitioner *during* the period of formal educational experience.

Recognition of the validity of field experiences has also had a remarkable impact on the concept of in-service education (sometimes called “continuing education”, to denote its life-long characteristic). The older, and simpler, practice of transplanting the campus-oriented course to some remote point, lock, stock, and barrel (syllabus, text, and professor) is disappearing. The modern extension and continuing education operations capitalize on the fact that in-service professionals are engaged in experiences, day-by-day, that constitute a rich source of material for valuable learning. Experiences of the practitioner’s world thus become the sources of further knowledge, the motivation to learn, and the basis for evaluation, reconsideration, and planning. When extension education makes effective use of the field experiences that confront the in-service practitioner, it is a worthy competitor to the more formal and classical forms of education. A problem-centered approach to extension teaching is certainly a great improvement over the “transplanted course” approach.

The Fence Posts: Seminars

If students are to make a solid connection between the cognitive input and their field experiences, they need others to talk with—preferably those who are learning along with them. Perhaps it isn’t quite a matter, of magic, but something exciting happens when learners get together, to put into *words* how new information relates to their doing an effective job. If left to chance or individual initiative, new information may never result in appropriate changes in the professional practice. Or, worse yet, it can result in incorrect applications to practice. Misunderstandings in the cognitive realm can result in disasters in the realm of practice. The seminar, as an opportunity for reflecting, evaluating and hypothesizing, can reduce the gaps and the misapplications, resulting in more potent and responsible transfers from “theory” to “practice,” and back again to better theory.



“Seminar” is a word carelessly used to mean whatever its user wants it to mean. So maybe it isn’t very useful anymore; but until we find a better word, “seminar” will have to suffice to indicate the less structured experiences that lead to integration of cognitive input and field experiences through sharing and discussion. The hallmarks of a good seminar are the occasions and stimulations to reflect upon and evaluate learnings from both the cognitive input and from the field experiences, with a premium on relating the two. The objectives of a seminar can usually be expressed in terms of applying principles and concepts to problem-solving tasks.

Educators in the past have idealized Mark Hopkins on one end of a log and a student on the other as a model of the pedagogical relationship. This model seems dubious in the light of the research on the value of peer interactions during a learning experience. A more useful model, at least for the education of professionals, may be the two-rail fence—two lines of parallel linear flow, supported and integrated by spaced interactive seminars—a model of the relationships among the three major aspects of a curriculum for educating professionals.

Origin of the Rail Fence Analogy

In the mid to late 1960s, Ted prepared a paper for the United States Office of Education summarizing a number of factors involved in the present state of development of professional curriculum. “I had been asked by this Office on a contract that we were doing to describe what was the common denominator in current, highly developed, professional curriculum. By that I mean curriculum for the development of professional persons regardless of the profession. After writing a lot of high-sounding prose, I wrote that it was like a split rail fence. That was before I ran into a real fence expert who told me that it wasn’t a split rail fence at all. It’s a two rail fence. In the paper, though, I wrote that it was like a split rail fence: the top rail is cognitive experience, and it goes from infinity past to infinity future, because the education of a professional never ends. On the bottom rail is field experience, that sort of experience that the professional has because he or she is a professional in a professional role, carrying out the roles, doing the tasks involved in the profession in the place where these are properly done. These experiences are tied together, whether we’re talking about pre-service training, in-service training, or continuing education, by a series of seminars, the primary purpose of which is to tie the other two rails together.”

Commentary: Samuel F. Rowen

Addiction to new fads is quite human. But after being disappointed enough one develops a sanctified caution about new things—especially since “there is nothing new under the sun.” The phenomenal growth in interest and involvement in Theological Education by Extension (TEE) has excited the interest of many and the skepticism of some. The reason for the great interest is the realization that many of the problems faced in theological education are shared in common.

In the rapid transmission of new movements or new ideas, there is also the multiplication of misconceptions. One popular misconception is that TEE is a noble attempt to make the best of a bad situation. Images are conjured up that things are getting worse and worse and in desperation we must do something to alter the declining effectiveness in the production of trained leaders.

As those engaged in theological education by extension began to give progress reports, a polarization arose as to which was the superior method of training, residence or extension. These discussions often proved unfruitful and a true assessment of theological training became more difficult. In *The Rail Fence Analogy* we can see TEE in its proper perspective as part of a worldwide trend to fashion better procedures of professional training. By definition, professional training is specialized training which prepares an individual for a high-level, client-oriented service. The training of the pastor is professional training in this sense because specialized training is needed to prepare a leader, to serve people. The trend in professional training is to include field-based experiences as an integral part of the curriculum design and to design opportunities to integrate newly acquired knowledge with these experiences.

There are certain psychological foundations which undergird effective learning. Some are well known; others have had little attention given to them in the curriculum design of theological education. Students learn best when they proceed from the known to the unknown. They learn best when they are promptly required to use the new information and promptly receives confirmation or correction of the new learning. But significantly students learn best when they perceive the value of the newly acquired information. Perceived value is just another way of saying that the information is

relevant—and seen to be relevant—to the demands (real-life situation) being placed upon the learner.

It is within the framework of the three functions of curriculum design as explained in *The Rail Fence Analogy* that TEE has developed. The students learn not in an abstract or remote environment, but in the actual experiential context in which the knowledge must be applied. The opportunity for perceiving the value of new information is experientially available. TEE is not an attempt to make the best of a bad situation. It is a part of a worldwide trend based upon substantial research on how people learn. The early advocates and participants in extension programs did not always see the relationships between the extension designs and good learning theory. But the fact that the extension theological education concept respects the necessary conditions for effective learning has attracted little attention of many professional educators, including some who are not directly interested in theological education.

Another issue around which the discussion of TEE has revolved is the qualitative versus the quantitative debate. Some see extension theological training as an attempt to address itself solely to masses of untrained leaders. The conservative estimate that there are 60,000 functional pastors in Latin America without theological training is indeed sobering. So, all too easily in some cases, fixed positions have emerged which see extension as the answer to the quantitative aspect and residence as the answer to the qualitative aspect.

We ought to be sane enough to realize that the issue cannot be easily resolved in a quantitative/qualitative scheme. A sober assessment of the accomplishments of our present institutions, in spite of many positive contributions, reveals that they have not produced the quality of leadership that we desire. In contrast, simply changing to an extension program will not automatically solve the problem. The extension program may merely redirect the inadequacies of the present program. This is just giving a new name to old processes. Designing a sound professional (theological) training is broader, than an institutional management questions—extension or residence. The prior questions are: What constitutes a valid theological education in Manila, or Tokyo, or rural Nigeria? What does the student need to learn to know, to do, to be? How can learning experiences be structured which will achieve these goals?

It is well to note the way in which the word curriculum is used in *The Rail Fence Analogy*. Curriculum does not refer to a list of courses. Curriculum refers to the entire educational process of an institution. It covers the whole range from the Dean's office to courses taught in the classroom. For it is possible to undo in the Dean's office what is accomplished in the classroom. Therefore, improving the curriculum does not refer, simply to the adding or subtracting of courses. It speaks to the necessity of rethinking the entire educational process.

The responsibility to train the leadership of the church is, as always, a necessary and possible task. TEE has opened the door for us to take a fresh look at our training programs by offering an alternate strategy to solving some of the perplexing bottle-necks in theological education. The *Rail Fence Analogy* was originally part of a larger paper, written in relation to the contemporary trends in educating professional persons in general—doctors, lawyers, dentists, architects, and so on. However, these developments in the training of professionals in secular fields offer to us insights into the particular problems we face in theological education.