The Curriculum Laboratory in an Urban School System

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CURRICULUM laboratories have traditionally been associated with teacher education institutions, state departments of education, and intermediate school districts. They can, however, have much more concentrated effect, as evidenced by application of the curriculum laboratory concept to at least one major school system—the Detroit Public Schools.

A pressing need exists in urban school systems, and elsewhere in America, for the creation of relevant, effective curriculum procedures and supporting materials. Curriculum laboratories can help satisfy this need.

The Detroit Public Schools Curriculum Laboratories have taken as their task assisting teachers and others involved in the development of improved learning strategies. They do this through the provision of curriculum reference information and instructional materials production facilities. While the Detroit Curriculum Laboratories' production services have proven to be extremely popular, the laboratories' most effective use lies in assisting with the long range development of improved instructional strategies and related materials. In order to systematically accomplish this end, consideration must be given to the nature of the curriculum laboratories, the availability of instructional media, and the process of educational development.

Care should also be exercised regarding the critical difference between the simple devising of an educational product and actually developing a viable, useful, and efficient solution to an instructional need.

The Detroit Curriculum Laboratories

A major point that should be made about the curriculum laboratory is that there is a solid historical and philosophical basis for the concept.1 As indicated previously, curriculum laboratories are mainly found in teacher education institutions, but they have a direct and meaningful function in public school systems also.

In 1932, Henry Harap stated in an article about curriculum laboratories that, "... the curriculum laboratory is to classroom practice what the architectural office is to the finished building." 2 In a more recent


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statement, Carl Byerly, former assistant superintendent of the Detroit Public Schools, said of the curriculum laboratory, “The expectation is that individuals and groups will use this special service to develop new curriculum methods.”

The general goal of the Detroit Curriculum Laboratories is to be a place where teachers and others can assume an active, personal role in a process of continuous educational development and change in relation to specific instructional problems with which they are dealing. More specifically, they offer two types of services:

1. **Information Services**: A collection of curriculum “idea” materials is available for reference use by individuals and groups developing new guides, units, strategies, and otherwise engaged in curriculum development. The following categories are typical of the inclusions in the reference collection:

   - Bibliographies
   - Curriculum guides and manuals
   - Information file materials
   - Lesson plans
   - Local school documents
   - Newsletters and services
   - Resource catalogs
   - Standardized tests
   - Text materials
   - Units of study.

   The laboratory also deals in dissemination of educational information and provides for current awareness of developments, trends, and innovations.


2. **Materials Preparation Services**: A do-it-yourself instructional materials preparation center is available for teachers to create curriculum materials according to their own style of teaching, the local school curriculum, the nature of their students, and their individual goals. A conscious attempt is made to supplement the facilities of the local school and avoid unnecessary duplication by providing those materials and equipment too specialized or costly for the local school to maintain. The materials preparation center is truly do-it-yourself, in that no training or particular talent is assumed on the part of the user. The average user should be able to work successfully with the materials and equipment after a minimum of introduction.

   The three general types of materials production equipment and supplies available are:

   - Graphic materials (bulletin board paper, tape, Dri-Mark, grease pencils, etc.)
   - Production equipment (mounting press, signmaker, tacking machine, paper cutter, etc.)
   - Duplicating equipment (copiers—thermo and dry, transparency producers, stencil maker, etc.).

**Availability of Media**

Instructional media materials can be obtained from commercial producers or can be created locally. As a general rule, it is probably more expedient to utilize the products of commercial efforts providing they are appropriate in terms of technical and content quality, availability, and cost. There are many times, however, when commercial materials are too costly, unavailable, or are unacceptable for most instructional use. This
is particularly true in the case of media for the cultural-minority learners, as the relative recency of this market has produced a flood of materials, many of which are mediocre or of no value at all. The dearth of high quality, appropriate media for the cultural-minority learner has given greater impetus to production activities at the local level.

Two other factors which intensify this trend are: (a) the fact that many school systems, such as that in Detroit, will no longer accept merely the "best available" commercial material, but will reject any items which do not fully measure up to acceptable standards; and (b) the fact that most materials for economically deprived learners, in particular, must be put through an extensive product development procedure, including test and redesign cycles, before they become truly effective. Local development and production is, therefore, a major factor in the availability of instructional media materials for the cultural-minority learner.

Another trend which has promoted more local development and production of instructional materials is the steady movement toward greater individualization of instruction. The closer an educational program approaches true individualization of instruction, the greater the necessity of creating tailor-made materials to fit individual needs. The very process of individualization connotes constant restructuring, adaptation, and invention of a wide range of resources in line with curricular objectives.

Local production can be found on at least two levels. In some cases, particularly in large city school systems, the production level can be at or very near commercial quality. As in Detroit, most large school systems have full-fledged television and other production facilities with supporting staffs, as well as departments with content specialists who can provide subject area expertise at a very high level. The same situation exists at many universities. When media products are generated under these circumstances, they are usually created at a level of quality which can equal commercial materials. This type of local production is not the one which usually comes to mind, however. The great majority of local production is carried on by local teachers, and in some instances students, at a relatively low level of technical sophistication but with great positive effect.

Educational Development

One of the most significant, yet neglected procedures for meeting today's educational needs is the process of educational development. Virgil Blanke, of Ohio State University, has characterized educational development as "the invention and design of better solutions to problems in teaching-learning situations." David Clark and Egon Guba state that development has four objectives: (a) to identify operational problems; (b) to solve operational problems; (c) to design solutions to work in schools; and (d) to assess the effectiveness and efficiency of these solutions. Guba and Clark see development as the second step in a four-stage process which leads to educational change. The full continuum includes: research, development, diffusion, and utilization.

Richard Schutz, Director of the Southwest Regional Laboratory for Research and Development, states that development at his laboratory centers around six elements: (a) instructional design; (b) test of prototype; (c) production; (d) quality verification; (e) instructional technology; and (f) staff training.

Hemphill has suggested a specific sequential process for carrying out educational development. The steps in the sequence are:

1. Judicious selection of the product or process to be produced
2. A careful review of the state of the art and knowledge from which the product or process is to be developed
3. Invention and design
4. Preparation of a preliminary version (mock-up or prototype) of the product
5. Product tryout, including testing or examination of performance
6. Assembly of a revised version of the product or process which incorporates the experience from the tryout of the earlier version, again subjecting this revised model to a performance examination
   (Steps 5 and 6 may be repeated any number of cycles before moving to Step 7, depending upon how successful the design—feedback—redesign operation has been.)
7. Field testing is carried out once a product or process is produced which appears to perform to specifications. This field testing should be done under rigorous conditions in a situation that duplicates most of the known relevant characteristics of the operating environment
8. The final step is operational testing. This differs from the field testing in that the person responsible for the development work retires from direct involvement in the testing of the product or process. If the operational tests are successful, the product is ready for dissemination.

Educational development is, therefore, a process which “entails the creation of products and processes that provide viable alternatives in improving classroom learning.”

A Development Cycle

Utilizing the Hemphill sequence as an accurate description of the process of educational development, the curriculum laboratories have their main impact at the first, second, third, fourth, and sixth steps in the development cycle. The information services aspect of the laboratories can assist in the judicious selection of the product or process (Step 1) by: suggesting ideas which have merit, but have not been tried; providing an idea of what has already been done and with what results; and building a context for the all-important process of serendipity. Laboratory information services can also provide the necessary codified intellectual resources necessary for the formulation of an accurate state-of-the-art analysis of the area within which the product or process is to be developed (Step 2).

Once an idea of the type of product or process desired is delineated, the “laboratory” aspect of the development procedure sets in. Here the curriculum laboratories can operate as their name implies and literally provide the setting for the experimentation necessary for the invention and design process (Step 3). The materials production facilities of the laboratories can be utilized for physical experimentation, and the information services for intellectual stimulation and back checking. The preparation of a preliminary mock-up or prototype of the product (Step 4) can also be carried out through the laboratories’ materials production services. After initial product tryout (Step 5), the assembly of a revised version can be done at the laboratory (Step 6) prior to further field testing (Step 7). It should be noted that Steps 6 and 7 can be repeated for any number of cycles until the product is either perfected or is found to be flawed and wanting.

The point cannot be made too strongly that educational products or processes have to be tested and retested in the real world prior to dissemination. Mere devising of a product and immediately replicating it for dissemination is the worst possible procedure for the creation of a viable, longitudinally effective curricular procedure or item of instructional media.

The role of the curriculum laboratories is not in the volume of replication of untried (or even perfected) products and processes, but is directly connected to the selection, invention, design, prototype development, and redesign of educational products and processes to provide viable alternatives to improve classroom learning.
