

Curriculum Development for Nonformal Education

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Learning by Doing

Tell me and I forget

Show me and I remember

Involve me and I understand

Introduction

The term "curriculum" has different meanings to different people. The term can be very inclusive, incorporating everything involved in the planning, teaching, and learning process in an educational institution, or it can be very limited, merely incorporating the outline of a course of study (Tyler, 1975). For this monograph, I adopt a view of curriculum similar to that of Resnick (1975), who defined curriculum as a "planned intervention for the purpose of education" (p. 35). In this view, any time an educational experience is planned and explicit efforts are made to increase learning and development, a curriculum is being designed. Curriculum under this definition can be very detailed and specific, or it can be very broad and general. It can also vary in duration from one planned activity to a

year long course of study (Posner & Rudnitsky, 1982). When we speak of curriculum in 4-H, we are generally referring to the actual educational materials that are used (Smith, 1996). These materials may be oriented toward various audiences (e.g., youth or adult) in a variety of settings.

Curriculum development, then, is the process through which an initial idea becomes a planned educational experience. In 4-H, the process of curriculum development generally refers to the process of writing educational materials (Smith, 1996). This process is extremely important, as high quality experiences don't generally just happen; the best ones are carefully planned to encourage general development (e.g., life skills) through subject matter content while achieving identified outcomes (Hendricks, 1996). Wulf and Schave (1984), quoting the Cheshire Cat from Alice in Wonderland noted...

If you don't know where you are going, then any path will take you there.

To make sure that you are going down the right path, then, there must be a clear definition of where it is that you want to go. Developing good curriculum takes time and planning!

Good curriculum meets several criteria (Bondi & Bondi, 1989): (a) it is designed to provide rich and varied experiences for a wide diversity of students; (b) it is organized and flexible, so that it can be adapted to meet the educational objectives of the organization; (c) it uses appropriate resources to meet the needs and interests of the learners; and (d) it includes appropriate teaching strategies to carry out the identified learning objectives. To meet these criteria, one must address a number of considerations during the curriculum development process. For this monograph, these considerations are grouped into three distinct stages of curriculum development: preparation, process, and evaluation.

Preparing for Curriculum Development

The Design Team

There are many possible configurations for putting together a curriculum design team. At one end of the spectrum, you have an individual working alone on all aspects of the curriculum design process. On the other end, you have a fully integrated team working in coordination throughout the various phases of the process. Ideally, a team will include members with various areas of expertise relating to the curriculum, including for example a curriculum development specialist, a human development specialist and a subject matter specialist, among others (Zurcher, 1996). Team member tasks should be clearly identified; some tasks will be best handled by an individual team member or a subgroup, other tasks are best handled by the

whole team, depending on the nature of the task and the configuration of the team. It is up to the team to identify and allocate these tasks based on the curriculum and the team.

Historically, most curricula in Cooperative Extension have been developed by subject matter specialists (Hendricks, 1996). These curricula generally focus on a narrow subject (e.g., beef or sewing) and contain primarily content-based facts about the subject (Zurcher, 1996). As curricula change to include integrated subject matter and to include life skills in addition to subject matter content, it has become necessary to adopt a team approach to curriculum development (Cooperative State Research, Education and Extension Service [CSREES], 1992; Smith, 1996). No longer is one person thought to possess all of the skills necessary to produce effective curriculum materials.

Knowing Your Audience

To be effective, a curriculum must meet the needs and expectations of the audience for which it is intended. Even if general information is already available about the target audience, it may still be necessary to fill in the specifics (Ritter & Welch, 1988). Information to gather about your prospective audience include: maturity or developmental level, needs, interests, abilities, prior knowledge (Posner & Rudnitsky, 1982), and potential obstacles to participation (Cobourn & Donaldson, 1997). Sources for such information may include other curricula or programs developed for this group, experts who know the audience, and representatives of the targeted group (Cobourn & Donaldson, 1997). When possible, include members of the intended audience in the development process; design "with them" rather than just "for them" (Cobourn & Donaldson, 1997; Ritter & Welch, 1988).

Youth programmers face the additional challenge of targeting the appropriate developmental level of the young people they wish to address (Hendricks, 1996). Here it is important to have knowledge not only of the subject area, but also of youth development. To be effective with youth, the materials must incorporate age-appropriate content and an age-appropriate delivery strategy. Designing materials for a 9 year old, for instance, is much different from designing materials for a 15 year old. A number of resources about the developmental needs of various aged youth are available from Cooperative Extension sources (see, for example, CSREES, 1992 and Hendricks, 1996).

Researching Your Subject

When determining the content of curriculum, it is important to review a variety of resources to see if a similar approach has been tried in the past (Tyler, 1975). This step is critical for a couple of reasons. First, if successful materials and/or curricula already exist, then there is no need to duplicate them; it may be possible simply to adapt the items to meet your specific needs. Second, if the materials and/or curricula were already proven unsuccessful, then there is no reason to replicate failure. A few sources to check for available materials include: film catalogs, libraries, textbooks, old curricular materials, and picture testing files (Wulf & Schave, 1984). It is also important to check with other agencies or organizations that may already be in the field trying to meet the same need you have identified (Ritter & Welch, 1988). For Cooperative Extension programs, it may also be helpful to check with curriculum sources at the national level and for other states. There is no need to continually recreate existing materials, as was found to

be the case in a 1986 survey that found 40 different state 4-H beef projects (Smith, 1996).

In addition to past materials and curricula, there are a number of additional sources that should be considered when initially determining the content of the curriculum. A thorough literature review may provide helpful suggestions for the curriculum (Mehlinger, 1975; Wulf & Schave, 1984). In addition, experts in the field for which you are designing materials can also be an excellent source of input. Finally, input from prospective participants can be very useful. This information may be gathered through a formal needs assessments (Wulf & Schave, 1984), or through more informal methods.

The Process of Curriculum Development

Determining the Rationale and Learning Goals of the Curriculum

The rationale is meant to answer the "why" for the curriculum. It is a sentence or paragraph that clearly and concisely describes the curriculum, its purpose, and its intent. The learning goals, or desired impacts, are meant to answer the "what." They are the clear statements of the changes intended for the learner and may include either subject matter knowledge or life skills competencies (Hendricks, 1996; Posner & Rudnitsky, 1982).

In determining the rationale and learning goals, begin by analyzing the needs or problems that prompted the decision to develop a new or revised curriculum (Tyler, 1975). It is important to identify goals which reflect the theory and philosophy of the curriculum. It is also important to make a connection between the goals and the targeted

group of participants (Wulf & Schave, 1984). Clear, appropriate, realistic goals are important, as they will define the curriculum and allow for effective assessment of its success (Hendricks, 1996).

Matching Content to the Rationale and Learning Goals

Two things are important to remember at this point: (1) not everything can be taught in one curriculum, and (2) one can often accomplish more (in depth) by attempting to cover less (in breadth) (Posner & Rudnitsky, 1982). While keeping your rationale and primary learning goals clearly in mind, identify those learning outcomes that are of highest priority from the list of possible learning outcomes. Develop a tentative outline for the learning experiences which contains the major ideas, components or topics of the subject which you are planning. Identify the key concepts which you plan to incorporate; these will follow from the specific sequence or segments of information which you have included (Hendricks, 1996). Be sure to consider both content and life skills goals.

Organizing the Experiences

There are three levels of organization to be planned: (1) the grouping of units, or individual learning experiences, (2) the sequencing of groups, and (3) the sequencing of units within groups (Posner & Rudnitsky, 1982). There are many possible organizing themes. Below are those offered by Posner and Rudnitsky (1982) and Wulf and Schave (1984):

- "World-related sequences" between people, events or objects based on their relationships in time, space, or physical properties. Examples include chronological order or reverse chronological order, historical themes, and near-to-far or far-to-near (in geographical terms).

- "Concept-related sequences" based on connections between ideas, such as class relations, propositional relations, level of sophistication, or logical requirements. Examples include simple to complex, concrete to abstract, and general to specific.
- "Inquiry-related sequences" derived from generating, discovering, or verifying knowledge, including the logic of inquiry (e.g., induction or deduction), or the empirics of inquiry (e.g., descriptions of how scientific inquiry actually proceeds).
- "Learning-related sequences" that are presented based on how people learn, including necessary prerequisites, familiarity, difficulty, interest, development, or internalization.
- "Utilization-related sequences" based on the order of occurrence or the frequency of usage of the item.
- "Frame factors", including availability of materials and facilities, time schedules, weather and climate, and teacher interests or competencies.

It is important to consider alternative ways of organizing the materials, as each organization can result in distinct kinds of learning being achieved (Posner & Rudnitsky, 1982). It is also important to recommend a learning environment, including the physical, social and psychological environment, as these can have a profound effect on the learning experiences (Wulf & Schave, 1984). Once the experiences have been organized, it is important to examine the curriculum as a whole, looking for balance in the activities and content included. As needed, eliminate redundancies, fill gaps, check for

consistency, and make necessary revisions
(Posner & Rudnitsky, 1982).

Creating Lessons and Materials

Now that the overall curriculum has been organized, the individual learning experiences, or units, must be developed. A curriculum may have one or many units, depending on the length and structure of the materials. For each unit, an instructional focus should be determined, considering the following: desired audience perception (e.g., fun or challenging), desired emotional climate (e.g., competitive or cooperative), and desired energy level (Posner & Rudnitsky, 1982). The instructional goals for the experience should be derived from the goals of the unit and the overall curriculum (Wulf & Schave, 1984). An instructional plan should be developed which describes (a) the intent of each unit, (b) the learning outcomes for each unit, and (c) potential teaching strategies for each unit (Posner & Rudnitsky, 1982). As mentioned earlier, for 4-H this will involve creating the actual lessons and material to be used.

It is important to consider how to deliver experiential learning opportunities that incorporate the desired skill practice and content information (Hendricks, 1996). Subject matter should be shaped and processed in such a way that targeted life skills are developed through a variety of activities that are based on the subject matter (Zurcher, 1996). It is also important to remember that different students learn in different ways. Some methods are more appropriate than others, and some are more effective than others (Bondi & Bondi, 1989). Also remember that the climate of the program (i.e., the social context) can enhance or diminish the effectiveness of the lessons (Resnick, 1975). In 4-H, educational materials should create "supportive environments for culturally diverse youth and adults to reach their fullest potential" (Smith, 1996, p. 6).

In voluntary educational programs, such as those offered by Cooperative Extension and other nonformal educational groups, it can

be difficult to get people (both youth and adults) to participate in new programs without immediate personal or financial benefit (Cobourn & Donaldson, 1997). It is often necessary, then, to create flexible curricula which offer a variety of experiences to accommodate the diversity of the targeted audience. It is important to consider alternative delivery methods, beyond those traditionally used in education or in Extension itself (Ritter & Welch, 1988). Creative, participatory teaching techniques, such as simulations, games, and role playing, are important "tools of the trade" (DeBord, 1989). Approaches that have high group member involvement while facilitating meaningful learning experiences are imperative. In general, make it fun (Cobourn & Donaldson, 1997). For 4-H, the Experiential Learning Model has proven effective in providing meaningful, hands-on learning opportunities.

Experiential Learning Model

The Experiential Learning Model includes three parts and five steps. This section briefly summarizes the model (for more details, refer to Aamot, 1996; CSREES, 1992; Smith, 1996; or Zurcher, 1996). The three parts are: *Do*, *Reflect* and *Apply*. The first part, *Do*, is the experience, the activity that the participant completes, performs or does. It should be "hands-on" in nature. The second part is where the participant reflects on the activity, where s/he discusses the activity and what was learned from it. The third part is where the participant applies the information learned to another task or situation. The second and third parts are generally accomplished through open-ended questions that move the participant from the concrete (experience/content) level to the more abstract (application/life skill) level.

There are two steps within the *Reflect* part of the model: *Share* and *Process*. During the *Share* step, the participant describes what

happened during the activity. Questions should focus on what the participant did, what happened and how s/he felt. These reactions are discussed further and analyzed during the *Process* step. At this point, common themes are identified and questions are clarified. Questions should focus on important aspects of the content, the experience, or use of the life skill.

The *Apply* part of the model also has two steps: *Generalize* and *Apply*. The participant personalizes the experience and connects the activity to real-world examples during the *Generalize* step. Questions should relate the experience to real life situations which the participant has encountered. The discussion, at this point, will tend to focus more on life skills than on content. Finally, during the *Apply* step, the participant discusses how the new information or knowledge gained can be used in other situations. Questions should help to connect skills and knowledge learned in the activity to other (real life) tasks and situations.

Moving through this model requires the active involvement of participants. It also requires an experienced leader or helper to work with the participant. Merely providing experiences is not adequate if one truly wants the participant to understand the knowledge and skills that are being targeted in the curriculum. For full understanding, it is necessary to reflect on and find applications for the information gained.

Evaluation During Curriculum Development

In these times of decreasing budgets, it is becoming increasingly important to be accountable for resources expended by documenting program impact (Hendricks, 1996) and participation. Evaluation, the key to obtaining this information, is integral at every step of the curriculum development process. Feedback about the curriculum

must be gathered throughout the design and implementation phases, as well as after the program is complete. There are many ways in which a curriculum can be evaluated; planning a meaningful evaluation will depend on the nature of the proposed learning activities (Wulf & Schave, 1984). The source of the data will also depend on the purpose and nature of the information gathered. Numerous subcategories of evaluation activity have been identified over the years. Some of the most important and widely accepted are the following:

Formative Evaluation

Formative evaluation includes any evaluation activities geared to the development or improvement of a curriculum. The information may be used for making decisions during the development of a new curriculum or for improving existing curricula (Posner & Rudnitsky, 1982; Wulf & Schave, 1984). This type of evaluation is generally of most interest to a program's staff or members of the curriculum development team who wish to maximize its effectiveness and usefulness.

Summative Evaluation

A summative evaluation is conducted at the completion of a curriculum, after the final modifications have been made. Information may be collected about both processes and outcomes. Decisions such as whether to continue using a curriculum, whether to disseminate it to other sites, and whether to continue its funding may be determined from a summative evaluation (Stevens, Lawrenz, & Sharp, 1993). This type of evaluation is generally of most interest to potential users of a program or curriculum, who wish to choose the most effective existing product to suit their needs. Ultimately, the value of any program depends on its ability to bring about the desired changes, and how it works in the field (Resnick, 1975).

Implementation Evaluation

An implementation evaluation assesses whether the curriculum is being conducted as planned. It is designed to answer all types of delivery questions. This type of assessment should occur several times during the life of the curriculum development process. Before you can adequately assess the outcomes of a curriculum, you must make sure that it is happening as planned (Stevens, Lawrenz, & Sharp, 1993).

Outcome Evaluation

An outcome evaluation assesses the effect that the curriculum has had on the participants. One critical requirement is to determine which types of outcomes you are interested in measuring: Are you most interested in knowledge, attitudes, skills, aspirations, or some combination (Hendricks, 1996)? The evaluation plan should describe the indicators to be used for the identified learning objectives (Posner & Rudnitsky, 1982). It is important to clearly identify the observable indicators of change targeted in the curriculum, as these become the criteria for measuring the curriculum's impact (Hendricks, 1996). An outcome evaluation is generally conducted after a curriculum has been delivered, though it may also be part of the formative process.

Evaluation is more than just collecting information. The information collected must be organized, analyzed, and presented in a way that permits people to understand it and apply it to decision making activities (Hendricks, 1996). Evaluation may be either quantitative or qualitative. Quantitative evaluation involves numerical data which can be analyzed statistically. Examples of this type of data are pre- and post-tests and surveys. Qualitative evaluation involves text-based data (e.g., verbal interview responses) which are rich

and descriptive. Examples of this approach are in-depth interviewing and focus groups. Data collection methods are often combined as a way to gather a variety of information about the program or to cross-validate findings.

Closing

Each of the stages—preparation, process, and evaluation—is critical to developing a well thought out, organized and effective curriculum. In preparing to design curriculum, it is important to establish the design team, know the target audience, and research the subject of the curriculum. During the development process, the rationale and goals of the curriculum must be determined and matched to the content, learning experiences must be organized and lessons and materials must be created. When developing curriculum for 4-H, the Experiential Learning Model is an effective format to follow. Finally, an evaluation plan must be established for all phases of the development process. By incorporating all of these considerations into your curriculum development plan, you will be able to develop a good curriculum that meets the previously mentioned criteria: (a) it is designed to provide rich and varied experiences for a wide diversity of students; (b) it is organized and flexible, so that it can be adapted to meet the educational objectives of the organization; (c) it uses appropriate resources to meet the needs and interests of the learners; and (d) it includes appropriate teaching strategies to carry out the identified learning objectives (Bondi & Bondi, 1989).

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Ella Madsen, 4-H CYD Research Associate served as editorial consultant for this monograph.