Developing and Using 4-H Curriculum Materials to Maximize Learning for Youth

Learning by Doing, Constructivism, and Authentic Contexts

The origins of the 4-H Youth Development Program can be traced back to the turn of the twentieth century with the appearance of Boys and Girls Agricultural Clubs in different parts of the country (Enfield, 2001). The focus of these clubs was on practical, relevant education that utilized a "learning by doing" strategy, which remains a core element in 4-H today (Enfield, 2001).

The theory associated most closely with "learning by doing" is **constructivism**, which holds that knowledge is developed through experience (Fosnot, 1996). More specifically, experiences are interactions between learners and their environment, and each new experience draws upon prior ones and modifies them in some way. Additionally, to clarify their understanding and maximize learning, individuals must be provided adequate time and opportunity to actively reflect upon their experiences (Fosnot, 1996; Lambert et al., 2002; von Glaserfeld, 1990).

Although learners develop knowledge through constructivist processes that require personal reflection, learning is a social endeavor where dialogue and reflection with others are critical (Loucks-Horsley et al., 1998; Lave & Wenger, 1991; Vygotsky, 1978). Furthermore, the context of the learning environment is important. It is critical that the learning setting where social interactions occur be situated within "authentic contexts that reflect the way the knowledge will be used in real life" (Herrington & Oliver, 2000, p. 30). The use of new knowledge and skills in authentic settings allows learners to adjust and solidify their understanding (Kolb, 1984). This helps make "learning last."

A Curriculum is More than an Activity

A curriculum, by definition, is more than a single activity. It consists of "a scope, or breadth of content, in a given subject area and of a sequence of concepts and activities for learning" (National Research Council, 2012, p. 246). Learning goals are established within the curriculum contents, and achievement of those goals is targeted through specific activities that involve the use of materials, tasks, discussions, illustrations, and demonstrations (National Research Council, 2012).

According to Jerome Bruner (1996), concepts presented by a curriculum need to be revisited and reexamined over time in order to deepen learners' understanding. This process of revisiting and reexamining salient points is referred to as **"spiraling"** and is a fundamental premise of curriculum development and, by extension, curriculum implementation. Thus, it is critical that learning experiences be planned in a sequential fashion over extended periods of time whereby learners return again and again to basic concepts in order to help them develop a full and more in-depth understanding.

Maximizing Learning for Youth through Effective Curriculum Development and Implementation

Building upon recommendations for effective curriculum design (Howard, 2007; Taba, 1962; Tyler, 1949; Wiggins & McTighe, 1998), as well as taking into consideration the importance of emphasizing constructivist-based learning in authentic settings as part of 4-H experiences, it is recommended that the following steps be considered when **developing and implementing 4-H curriculum materials** in order to **maximize learning for youth**:

1. Define learning goals with measurable outcomes.
2. Identify learning experiences that correspond to learning goals.
3. Organize learning experiences in a sequence that spirals learning and targets a cumulative effect.
4. Implement activities such that youth have opportunities to engage and dialogue with others; include time for active reflection.
5. Implement learning experiences in authentic settings.
6. Evaluate learning outcomes.

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