Abstract: 4-H volunteers and staff are often faced with providing educational programs and opportunities for youth with wide ranges of age and ability. To address this challenge, researchers from the University of California Cooperative Extension developed and tested a Best Practices Matrix that outlines domain-specific, age-appropriate characteristics of youth and their applications to 4-H programming. Post-implementation surveys that included six forced-response and five open-ended questions were collected from 48 adult volunteers who attended volunteer development workshops. Outcomes indicated that participants improved their understanding of youths' developmental characteristics and how to use the matrix to help improve their project and activities.

Introduction

Volunteers are most commonly involved in the 4-H Youth Development Program as non-formal educators who lead projects and activities with youth (Boyd, 2004). Over 550,000 adults are engaged in this capacity nationally on an annual basis (USDA, 2006), and without their commitment of time and energy, the 4-H Youth Development Program could not operate effectively (Boyd; Stedman & Rudd, 2006). However, to be effective, volunteers must have access to training opportunities and educational resources (Hoover & Connor, 2001).
Effective teaching requires that educators differentiate their instruction to meet the needs of their learners (Anderson, 2007). Differentiated instruction means understanding the differences between learners and applying this understanding to planning lessons that maximize the educational impacts on the individuals involved (Anderson, 2007). Differences such as learning styles, skills, and interests can have profound effects on whether or not an educational activity achieves the desired learning outcomes (Anderson, 2007).

In 4-H, projects and published curricula are typically organized around or designed according to specific age groups: 5-8 year-olds, 9-11 year-olds, 12-14 year-olds, and 15-19 year-olds. These groupings are not random; rather, they are based on research related to the developmental characteristics of youth that are both linear (e.g., physical size) and dynamic (e.g., behavior) (Katz, 1996). However, because 4-H projects and activities frequently include youth of mixed age groups, understanding these developmental characteristics becomes essential to volunteers as they plan and implement programs.

**Addressing Developmental Characteristics of Youth: A Best Practices Matrix**

The developmental characteristics of youth are categorized according to ages and domains of youth development (i.e., physical, cognitive, social, emotional). For each of the four defined age groups, there are specific developmental characteristics within each of the four domains. Characteristics of youth are age specific within each domain and thus have implications relative to the design and implementation of 4-H projects and activities. According to Silliman (2007), it is important to understand and use these domains effectively when planning 4-H programs, and that by doing so, practitioners can "improve their knowledge and skills" (p. 6).

Based on Silliman's (2007) work and results from a statewide survey of 4-H staff in California (Dasher et al., 2005), it was determined that a comprehensive resource on youth development concepts that included strategies for authentic application was needed for volunteers. To aid in addressing this need, Extension personnel from the University of California developed the Best Practices Matrix (Figure 1) that outlines domain-specific, age-appropriate characteristics of youth, applicable to 4-H programming. Anchored in similar work (McFarland et al., n.d.; Levings, 2006; Ponzio, Junge, Mangallan, & Smith, 2000; Smith, 1994; Tomek & Williams, 1999), the Best Practices Matrix provides educators a resource to compare developmental characteristics within different domains and across four age groups, or focus on characteristics within each age group and/or domain individually. What distinguishes this matrix from most previous work is the inclusion of best practices that provide practitioners with examples of potential program applications.

**Figure 1.**
Best Practices Matrix
### Physical Development

<table>
<thead>
<tr>
<th>Focus</th>
<th>Characteristics of 5 – 8 year-olds</th>
<th>Characteristics of 9 – 11 year-olds</th>
<th>Characteristics of 12 – 14 year-olds</th>
<th>Characteristics of 15 – 19 year-olds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Development</td>
<td>Youth are mastering physical skills, exhibiting better command of large muscles (e.g., legs) than small muscles (e.g., hands and fingers).</td>
<td>Youth are physically stronger and exhibit better balance and coordination; small muscle coordination is advancing.</td>
<td>Both genders experience physical changes (e.g., height, voice, secondary sex characteristics) that are rapid and profound. Physical strength, balance, and muscle coordination continue to advance.</td>
<td>Most teens have gone through puberty. Physical strength, balance, and muscle coordination are well developed.</td>
</tr>
<tr>
<td>Maturation Rates</td>
<td>Physical growth for this age group is generally gradual and consistent across gender.</td>
<td>Youth are maturing physically at different rates. Most females will be maturing faster than their male counterparts with some females entering puberty.</td>
<td>Sexual maturation and growth rates vary within and between genders; however, changes in females generally occur sooner than for males.</td>
<td>Rates of sexual maturity and growth are similar between genders.</td>
</tr>
<tr>
<td>Best Practices for 5 – 8 year-olds</td>
<td>Provide physical experiences that utilize both large and small muscles, but do not require precision or detail for the youth to be successful.</td>
<td>Provide active learning experiences that allow for more precision-oriented tasks.</td>
<td>Provide fun, active learning experiences such as sports and games.</td>
<td>Youth have achieved a high level of physical competence; activities that require detail, precision, and/or physical endurance are appropriate.</td>
</tr>
<tr>
<td>Program Applications</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Cognitive Development

<table>
<thead>
<tr>
<th>Focus</th>
<th>Characteristics of 5 – 8 year-olds</th>
<th>Characteristics of 9 – 11 year-olds</th>
<th>Characteristics of 12 – 14 year-olds</th>
<th>Characteristics of 15 – 19 year-olds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thinking Strategies</td>
<td>Youth this age are concrete thinkers. They base their thinking in the present (here and now) and in absolutes (e.g., right or wrong; yes or no).</td>
<td>Favor concrete thinking, but begin to use reasoning skills and abstract thought. Youth vary greatly in cognitive abilities.</td>
<td>Youth exhibit abilities to think abstractly and hypothetically. Beginning to develop skills using logic; can use reason to understand results and consequences.</td>
<td>Youth are competent abstract thinkers. Have the ability to process information and ideas to explain how and why things occur.</td>
</tr>
<tr>
<td>Interests and Attention</td>
<td>This age group is naturally curious about their immediate environment and relies heavily upon sensory experiences. They generally have a short attention span.</td>
<td>Creative; curious, eager to try new things. Interested in collections and hobbies.</td>
<td>Interests broaden; youth are curious about the world beyond their immediate environment. Begin to show interest in regional, national and global issues.</td>
<td>Exhibit a sense of community awareness and concern for others. Develop personal philosophies and enjoy sharing their knowledge and ideas.</td>
</tr>
<tr>
<td>Best Practices for 5 – 8 year-olds</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Program Applications</td>
<td>The experience is more important that the end product. Activities for this age group should be short, sensory-oriented, and involve physical movement.</td>
<td>Promote success for all participants by planning a variety of short activities for a range of abilities and interests. Directions should be to the point and not too complex.</td>
<td>Engage youth in problem-solving activities; provide supervision, but do not interfere with the process. Encourage youth to evaluate the results of their efforts; provide assistance only when necessary.</td>
<td>To maintain the youths’ interest, provide relevant, meaningful, problem-solving activities. Youth are capable of generating and implementing their own activity ideas. Youth should evaluate the outcomes of their efforts.</td>
</tr>
</tbody>
</table>
Methods

The Best Practices Matrix was field-tested with 4-H volunteers through interactive workshops. Volunteers were asked to draw upon their prior knowledge and experience, and use the Best Practices Matrix to plan an
event or activity for 4-H youth using project group profiles provided by the workshop facilitators. Project
group profiles were designed to simulate 4-H project rosters and included information such as youths’ ages
and genders, size of groups, and the number of years enrolled in 4-H. The participants used the Best Practices
Matrix as a reference to help guide them in the development of activities that addressed domain-specific,
age-appropriate characteristics of the youth represented in the profiles.

At the conclusion of the workshops, participants were asked to complete a survey that included six
forced-response and five open-ended questions. The purpose of the survey was to assess participants’
understanding of the developmental characteristics of different age groups, the Best Practices Matrix, and how
they intended to use this tool in their future work as 4-H volunteers.

Results

Survey results were collected from 48 adult volunteers who attended one of five workshops. Participants
represented an array of volunteer roles, including project leaders, community club leaders, and council
officers, with an experience in a variety of delivery modes (e.g., clubs, camps, afterschool programs). Seventy
percent of the participants had less than 5 years of experience as 4-H volunteers; 10% had 6-10 years of
experience; 10% had more than 15 years; and 10% did not indicate their level of experience. Specific survey
results revealed the following.

• 92% of workshop participants agreed or strongly agreed that their understanding of the differences
between cognitive, emotional, social, and physical development was better after participating in the
workshop than before. Open-ended responses from participants suggested that they would apply
information such as knowing when to insert fine-motor tasks into projects and activities, and how
domain-specific characteristics associated with different age groups can affect youths’ interests.

• 90% of the participants agreed or strongly agreed that they had a better understanding of age-specific
developmental characteristics of youth after attending the workshop than before. They commented
that they believed this understanding would allow them to better meet the needs of 4-H youth in their
programs by choosing activities and tailoring projects for different ages.

• 92% agreed or strongly agreed that they would be able to use the Best Practices Matrix to assist them
in project planning, training and teaching others, and working with teen and junior leaders.

• 94% of the participants agreed or strongly agreed that other 4-H volunteers would benefit from
participating in a similar workshop.

Discussion

Effective volunteer development is critical to the success of the 4-H Youth Development Program (Hoover &
Connor, 2001; Kaslon, Lodl, & Greve, 2005; Smith, Meehan, Enfield, George, & Young, 2004; Van Winkle,
Busler, Bowman, & Manooigan, 2002). One component of effective volunteer development is to provide
materials and informational resources necessary to support volunteers in successfully executing their
responsibilities as non-formal educators (Kerka, 2003; Tingley, 2001). The Best Practices Matrix can help
staff provide critical information related to core competencies for volunteers identified by Culp, McKee, and
Nestor (2001) and help volunteers understand what is expected of them in their role within the 4-H Program.
The Best Practices Matrix can also benefit 4-H volunteers by serving as a practical resource that builds their capacity to organize, plan, and deliver educational projects and activities for youth. Most important, however, is that by understanding the needs of youth as learners and incorporating those requirements and conditions into 4-H programming, the possibility that youth will learn through positive, developmentally appropriate experiences will be enhanced.

Conclusion

Differentiated instruction is an important element of effective teaching (Anderson, 2007). The learning styles, skills, and interests of target audiences must be considered and addressed if desired learning outcomes of educational interventions are to be achieved (Anderson, 2007). The Best Practices Matrix is a comprehensive resource that outlines domain-specific, age-appropriate characteristics of youth and is applicable to 4-H programming. The matrix can be used to enhance volunteer development and educational programming and can help 4-H staff build and maintain a volunteer corps, elements that have been identified as necessary for successful county-based educational programming (Subramaniam, Heck, & Carlos, 2008; Van Winkle, Busler, Bowman, & Manoogian, 2002).

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