TABULATING CAREER DEVELOPMENT EVENTS;
A CONTEST MANAGEMENT APPROACH

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Career development event tabulations can benefit from an approach that integrates the tabulations process throughout the preparation and operation of the career development event. Integration of the tabulations process moves some effort to the event preparation and reduces tabulation time. Tabulations that occur during the event make troubleshooting easier since contestants and judges are available should questions arise. Treating tabulations as a part of the entire event rather than a separate process will improve tabulations accuracy and reduce the stress for the contest advisors. The methods described in this paper are applicable to all career development events that require individual and team tabulations and will work with most computerized tabulations systems.

Introduction
Participation in FFA and 4H has been shown to have a significant positive effect on student GPA and obtainment of baccalaureate degrees (Ball & Garton, 2002). Colleges of Agriculture commonly sponsor the career development events (CDE) for FFA and 4H. These events or contests are a recruiting tool for students in FFA and 4H. Hosting CDEs is also an important service to secondary agricultural education and 4H. Although the organization of these events varies widely from campus to campus, faculty are commonly asked to advise these contests. Organizing the contest requires knowledge of the
contest rules, preparation of materials and classes (areas of the contest), and the tabulation of the results. At most institutions CDEs are held once a year so experience and practice in hosting the event is limited. In many cases tabulations is treated as simply a collation and summary of the contest scoring, however the systematic approach described here can increase tabulations success and reduce the stress of hosting the CDE. Implementing a systematic tabulations process that is integrated into the entire contest organization is the objective.

The goal of CDE tabulations should be to provide accurate results in a timely manner with minimum effort. For many host schools the CDEs are conducted during a span of less than six hours and final results are expected soon after the contest is concluded. The tabulations system should be designed around the following principles: Tabulations that are performed at the contest site and conducted as the contest is in progress are easier to troubleshoot because contestants and judges are still at the CDE venue. Well identified contest materials are more likely to be processed correctly than materials where students have to write their name or ID number on the materials. Double checking of tabulations is a key to quality assurance.

Contest Preparation
The CDE tabulations process should begin well in advance of the actual event with a review of the contest rules. The tabulations programs should be configured for changes in the contest rules and class or category name
changes. These should be checked well in advance of the contest. It is particularly important that subtle issues such as determining sub-contest awards and tie breaking be worked out in advance. The quality of contest rules varies widely from state to state and contest to contest (California Agricultural Teachers’ Association, 2007). Advisors are encouraged to work with governing bodies to clarify the rules if the rules are ambiguous.

Contest materials should be pre-labeled with the class and contestant number. Additional benefit can be obtained by pre-printing the rotation group on the materials so they can be easily sorted. It is most important that similar materials such as Scantron test sheets and placing cards be clearly identified since they can be easily mixed up by the contestants or the tabulators. The tabulations program can be used for this labeling or labels can be “mail merged” onto contest materials. Modern copy machines that can serve as printers can be used as an efficient and cost effective way to print materials customized with contestant number.

Contest Management
Registration should be conducted in an organized way to distribute contestants into balanced rotation groups and make the best use of contest materials. This is most easily accomplished by using name tags pre-printed with the contestant number and rotation group. Name tags are handed out in numerical contestant order during the registration process to contestants grouped into teams. No numbers are skipped if a team is not complete. Pre-
assignment of groups assures that team members are in different groups. An example of ID number and the group assignments for six rotation groups is shown in Table 1.

Table 1 – Example of ID number assignments.

<table>
<thead>
<tr>
<th>ID Number</th>
<th>Rotation Group</th>
<th>Team/Contestant</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>Team 1/1</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>Team 1/2</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>Team 1/3</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>Team 1/4</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>Team 2/1</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td>Team 2/2</td>
</tr>
<tr>
<td>7</td>
<td>1</td>
<td>Team 2/3</td>
</tr>
<tr>
<td>8</td>
<td>2</td>
<td>Team 3/1</td>
</tr>
<tr>
<td>9</td>
<td>3</td>
<td>Team 3/2</td>
</tr>
<tr>
<td>10</td>
<td>4</td>
<td>Team 3/3</td>
</tr>
<tr>
<td>11</td>
<td>5</td>
<td>Team 3/4</td>
</tr>
</tbody>
</table>

Contest group leaders can easily separate contestants because the group is printed on the name tag. Using the same methods as contest material labeling the name tags can be prepared by the tabulations program or by “mail merging”.

During the contest, materials should be picked up after each rotation. Each group of materials should be examined for missing materials and switched materials. For example a contestant used the wrong placing card for a class. A tabulations system should report the number or percentage of scores processed with each rotation which will help determine if materials are missing or that an entire area or class is missing a group of scores. Quick identification of
problems gives the contest advisor more time to troubleshoot and correct the problem while the contestants and judges are available.

**Quality Assurance**

Quality assurance checks the correct entry of the contestants and their scores as well as the correct tabulation of the scores. Before scores are entered, the contestant ID number, name, and team should be double checked. Data entry of scores by experienced people typically results in 5-10 errors per 1000 entries based on measured error entry of 2 digit scores. However, there are many other places to inject errors into the process that need to be examined such as multiplying or weighting a machine scored test, transcribing contest materials onto a score card, calculating a placing score, and adding up a score sheet. Ideally, your tabulations system should use the raw score and minimize any human computation that can induce errors prior to tabulation. Such manipulations induce additional errors that are hard to double check. Data entry can be easily checked by either double checking each batch of scores entered against the original materials or by entering scores on two different computers and comparing the results electronically.

Correct tabulations involve the addition of scores, breaking of ties, selecting of contestants for team scoring, and reporting. The addition is the easy part and can be accomplished by simple spreadsheets. Selection of the top three out of four contestants for total team scores requires more complex programming. Tie breaking can be a complex programming task depending on the number of
levels used to break ties. For some contests the lack of tie breaking rules is equally troublesome. Develop a plan to deal with ties prior to the contest. Testing the computational part of tabulations prior to the contest helps identify issues and prevents mistakes during the contest. Contest advisors are well served to be engaged in the tabulations process because they have intimate knowledge of the contest and are the most likely people to spot a problem. For example if scores are low in a class the advisor will know if the class is just difficult or if a tabulations problem exists.

Conclusion
Effective tabulations begin with good organization and a systems approach such as the one described above. Advisors are encouraged to develop a checklist that follows the steps for contest materials preparation, contest management, and quality assurance. Each contest will be different. Do tabulations require a specialized computer program? No. However a program that provides a framework for the tabulations system is helpful for insuring smooth and accurate tabulations. The system the contest advisor develops needs to be flexible since even the best organized events will have unexpected issues arise.

References
Agricultural Education Research Conference Proceedings. Las Vegas, NV.

