

# HOSA APPENDIX A

## HOSA METHOD FOR DETERMINING FINALISTS IN COMPETITIVE EVENTS REQUIRING MULTIPLE SECTIONS

Due to the large number of competitors in many of our Competitive Events, necessity has dictated that a method be derived to expedite the running of the events. After examining multiple alternatives, HOSA uses a mathematical method to determine finalists at the International Leadership Conference. The following is the rationale for this technique and its use.

1. **FAIRNESS TO THE COMPETITOR**—Competitors are randomly assigned to sections when multiple sections are used in HOSA competitive events. The mathematical formula balances judge subjectivity between the sections and prevents the unreasonable elimination of competitors that could happen if only the 2 or 3 highest scoring competitors from each section move forward. The mathematical formula eliminates the need for a final competition and allows for the possibility of the best competitors being recognized.
2. **DIFFERENCES BETWEEN JUDGES AMONG SECTIONS** -- Regardless of the specificity of the rating instrument, there will always be differences among judges. A means of compensating for these differences is necessary. The mathematical method accomplishes this.
3. **TIME** -- Running finals in any event requires a great deal of additional time and personnel. Mathematically calculating the finalists eliminates the need for a final run-off competition and is more cost-effective for competitors.
4. **CHANGE** – There will always be variables in competition, both with the judges and the competitors. Final rounds show who scored the highest at that moment, with those judges, but so does having one competition with multiple sections and using the mathematical formula.
5. **ELEMENT OF SURPRISE MAINTAINED** -- Whenever a final run-off competition is announced, the element of surprise is significantly reduced. For those who did not make the finals, there is no sense of anticipation for the awards ceremony. HOSA's mathematical formula maintains this element of surprise until finalists are announced at the awards ceremony.

### **EVENTS WHERE THE MATHEMATICAL FORMULA IS USED:**

#### HEALTH PROFESSIONS AND EMERGENCY PREPAREDNESS EVENTS

Clinical Specialty	MRC Partnership
Public Health	Family Medicine Physician
Mental Health Promotion	

#### LEADERSHIP EVENTS

Extemporaneous Writing- Health Policy	Extemporaneous Health Poster
Health Career Photography	Healthy Living & Foundations of Healthy Living
Health Career Preparation	Job Seeking Skills & Interviewing Skills
Prepared Speaking & Speaking Skills	Research. Persuasive Wrtg & Speaking
Research Poster	

#### TEAMWORK EVENTS

Community Awareness	Parliamentary Procedure
Creative Problem Solving	First Step Career Skills
Health Education	Public Service Announcement
Health Career Display	Forensic Science
Medical Innovation & Exploring Medical Innovation	Dynamic Decisions

\*If entries for any competitive event total only a number sufficient for one section, this event is not subjected to the computerized mathematical process.

## HOSA'S STEPS FOR DETERMINING FINALISTS IN COMPETITIVE EVENTS REQUIRING MULTIPLE SECTIONS

Implementing the HOSA Mathematical Method for Multiple Section Finalists Identification is explained by first identifying symbols for scores/sections, listing the steps in the process, and providing an example using hypothetical scores.

### SYMBOLS FOR SCORES AND SECTIONS

ICAS	- Individual Competitor Average Score
AJS	- Average of Judges' Scores for all competitors in a particular section
JDS	- Judges' Differential in Scoring between two (2) sections
AJDS	- Average Judges' Differential in Scoring between three (3) or more sections
CS	- Control Section -- the Section having the highest AJS (highest AJS if three or more sections are used)
AICAS	- Adjusted Individual Competitor Average Score
FCS	- Final Competitor Score

### STEPS IN IMPLEMENTING THE MATHEMATICAL METHOD

1. Determine an **Individual Competitor Average Score** (ICAS) for each competitor in each section.  
- Add all scores (one per judge) for each competitor divided by the number of judges; the result equals the ICAS per competitor.
2. Determine the **Average of Judges' Scores** (AJS) for each section.  
- Add all Individual Competitor Average Scores (ICAS) separately by section; divide total by number of competitors in a particular section; result equals the AJS for each section.
3. Determine the **Control section** (CS)  
- Compare the average of Judges' Scores (AJS) for all sections. The section with the highest AJS (or highest AJDS if three or more sections are used) becomes the Control Section.
4. Determine the **Judges' Differential in Scoring** (JDS) between sections.  
- An average of the AJS totals for all sections must be obtained by adding these AJS totals and dividing by the number of sections in the event.
5. Determine an **Adjusted Individual Competitor Average Score** (AICAS) for each competitor in each section - Add or subtract the amount of the Judges Differential in Scoring (JDS) to each Competitor Average Score (ICAS). Add to the ICAS if the AJS for that section is lower than the JDS for the event and subtract from the ICAS if the AJS for that section is higher than the JDS for the event.
6. Identify the **Final Competitor Score** (FCS) for each competitor.  
- For all other sections, the Adjusted Individual Competitor Average Score (AICAS) becomes each competitor's Final Competitor Score (FCS).
7. Determine the Rank Order of each Final Competitor Score (FCS). - Assign a rank number to each Final Competitor Score (FCS).
8. Identify the top 10 ranked Final Competitor Scores (FCS) as finalists.

### EXAMPLE OF USE OF MATHEMATICAL METHOD

Hypothetical Event: (Individual) - Prepared Speaking  
or  
(Team) - Parliamentary Procedure

Number of Competitors/Teams: 20 (10 per section)

Number of Sections: 2

[To ensure the accuracy of results, each section should include a minimum of ten competitors or ten teams if possible.]

The competitors' AJS is 72 in Section One and 98 in Section Two.

(Is it possible that all of the great speakers ended up in one section, or is it more likely that the Section Two judges are having a great day and love everybody, and the Section One judges may be in a bad mood?)

The JDS is 13 (the difference between the two groups is 26 divided by two sections).

Section One will receive 13 additional points for their ICAS, while Section Two will each receive 13 points deducted from their scores. Consequently, both sections will now have the same judges' average.

This new number becomes the competitor's adjusted score to determine the winners.