Educational objectives and administrative criteria for the National FFA Contest Program

Mack William Smith
Iowa State University

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EDUCATIONAL OBJECTIVES AND ADMINISTRATIVE CRITERIA FOR THE NATIONAL FFA CONTEST PROGRAM

Iowa State University

University Microfilms International 300 N. Zeeb Road, Ann Arbor, MI 48106
Educational objectives and administrative criteria
for the National FFA Contest Program

by

Mack William Smith

A Dissertation Submitted to the
Graduate Faculty in Partial Fulfillment of the
Requirements for the Degree of
DOCTOR OF PHILOSOPHY

Major: Agricultural Education

Approved:

Signature was redacted for privacy.

In Charge of Major Work

Signature was redacted for privacy.

For the Major Department

Signature was redacted for privacy.

For the Graduate College

Iowa State University
Ames, Iowa
1985
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INTRODUCTION

Every year since 1947, the National Future Farmers of America (FFA) Organization has been conducting contests as a part of their convention program in Kansas City, Missouri. Contests have always been an important part of the FFA and vocational agriculture. Indeed, the development of the FFA organization on the local, state, and national levels was strongly influenced by contests since effective contest programs were held for students of vocational agriculture before the FFA was organized in 1928 (41).

Most of the early contests were livestock judging contests held at the local level. Many vocational agriculture teachers recognized the instructional value of and student interest in evaluating classes of livestock and used contests as a means of teaching on this topic. Successful contests conducted at the local level stimulated interest in organizing state contests for vocational agriculture students. As a result of this interest, state contests were held in Alabama and Virginia in 1919. North Carolina, Nebraska, and New Mexico followed in 1920. These local and state contests proved so popular that a strong movement for national contests developed (41).

As early as 1918, a committee headed by Dr. C. H. Lane, Chief of the U.S. Agricultural Education Service, developed plans for a national judging contest for vocational agriculture students to be held in conjunction with the International Livestock Show in Chicago. Officials of the International Livestock Show in Chicago, however,
did not share the committee's interest and rejected the plans. The Chicago show, instead, established their own noncollegiate judging contest in 1919. It was not a separate contest for students in vocational agriculture as the committee had proposed.

The first national contest held for vocational agriculture students was the National Dairy Cattle Judging Contest at the National Dairy Show at Indianapolis, Indiana, October 12, 1925 (3). This contest had been organized by a committee also headed by Dr. C. H. Lane. Seventeen states were represented and it was so successful that a committee again made a proposal to the Chicago Show officials, but as before, the proposal for a separate livestock judging contest was rejected. This led the committee to look elsewhere for a livestock show willing to hold a national livestock judging contest for vocational agriculture students (41).

The search for a place to hold the national contests led Dr. Lane to Kansas City, Missouri, for a conference with officials of the American Royal Livestock and Horse Show concerning the possibility of establishing a contest in conjunction with the American Royal. He and his proposal received an enthusiastic response from not only American Royal officials, but also from the Chamber of Commerce of Kansas City, the Kansas City Livestock Exchange, the Kansas City Stock Yards Company, and the Kansas City Star newspaper. The result of this enthusiasm was the organization of the first National Congress of Vocational Agriculture Students, forerunner of the current National Future Farmers of America Organization (FFA), in November of 1926 to implement national
judging contests (41).

The first Congress was considered very successful with 1524 students from 22 states registered. The program lasted three days and included not only the much sought after contests, but tours of packing plants and business establishments, and a banquet. Interest in establishing national contests had provided the opportunity for a national organization of vocational agriculture students to become a reality (41).

The FFA was organized in 1928, but the national judging contests did not become part of the FFA convention program until 1947. The National Congress of Vocational Agriculture Students continued to sponsor the national judging contests until 1936. From 1936 until 1941, the national judging contests were separate from the FFA convention program. For example, in 1936 they were billed as the Ninth National Convention of Future Farmers of America, and National Contests for Students of Vocational Agriculture. During the war years, 1942 through 1946, national contests were not held, though the FFA convention continued on a restricted basis, due to wartime restrictions such as gasoline rationing, etc. (41).

When the FFA was organized in 1928, it was evident from its program of work that national contests were important. Two of four items listed in the program of work for the National Chapter dealt with the area of national contests. They were as follows (36, p. 9):

2. Encourage and foster national judging contests.
4. To provide, through the National Congress of Vocational Agriculture Students, larger opportunities for the
development of leadership and for giving national recognition to the outstanding achievements of the Future Farmers of the different states.

Item No. 2 obviously indicates the FFA's support of national contests as does item No. 4 when it is remembered that at that time the National Congress of Vocational Agriculture Students was the vehicle used to promote and organize the national contests.

As in the past, the FFA continues to encourage and foster national contests. This is evidenced by the fact that the national contests have continued to be organized by the FFA and large sums of money were invested in these activities ($139,695 in 1983), by the National FFA Foundation who sponsors the contests. The above quoted total does not include the amount spent by local, regional, and state FFA organizations in order to hold contests and send participants to the national contests. The large number of agricultural educators and students involved with these contests undergirds the importance of these contests (22).

Currently, the National FFA Organization provides twelve national contests in the areas of agricultural mechanics, dairy, dairy foods, farm business management, floriculture, forestry (beginning 1985), livestock, meats, nursery/landscape, poultry, and two public speaking contests. These contests, as stated by the National FFA Contests Bulletin No. 4 are (34, p. 2):

... educational activities ... designed to complement classroom instruction by giving students an opportunity to apply classroom knowledge in competitive situations. Each contest has been specifically developed to test skills and knowledge of students in a particular area of agriculture.
These contests have been and are recognized as educational activities that are a natural outgrowth of the vocational agriculture instructional program. They are used by teachers to make vocational agriculture classes more interesting and to encourage the development of special skills (35).

The fact that these contests are recognized as worthwhile and interesting educational activities is evidenced by the 1,392 national contestants representing over 87,000 state contest participants, the multiples of students involved at sub-state and local contests and the large number of agricultural educators involved with contests from all levels within the profession. These contests, as represented by the national contests, have a broad impact on the educational experiences of some 468,953 students enrolled in vocational agriculture and participating in the FFA organization. As such, it is imperative that the National Contests be planned and administered as quality educational activities.

In order for the National Contests to continue as quality educational activities, they must be continuously evaluated and revised. Evaluation requires that criteria relating to administrative functions and educational objectives reflecting desired outcomes of the contests exist. The problem, however, previous to this study was that no educational objectives had been attached to the national contests as a whole, and the administrative criteria developed were either inadequate or not used. The need for objectives and administrative criteria was evident recently when two national contests were temporarily dropped.
from the contest program by the National FFA Board of Directors. This situation prompted the National FFA Contest superintendent to solicit this study.

The purpose of this study was to establish overall educational objectives and administrative criteria for the National FFA Contests. More specifically, the objectives of this study were to: 1) identify educational objectives for the National FFA Contests which encompassed the areas of vocations and careers, basic skills, personal development, sociological and cultural development, health and leisure, and subject matter; 2) identify administrative criteria for the addition, change, or discontinuing of a National FFA Contest; 3) formulate educational objectives and administrative criteria through the use of a modified Delphi technique.
REVIEW OF LITERATURE

Few studies have been made of the national FFA contests. Much of what has been done are studies that sought to assess the educational value of specific contests.

This review of literature regarding formulation of objectives and administrative criteria for the National FFA Contests will be approached from the following perspectives: 1) related literature, and 2) related research.

Related Literature

The literature clearly states that contests were to be educational activities that reflected the instructional program of vocational agriculture. The 1984 Official FFA Manual stated that "All FFA Contests are to be a natural outgrowth of the instructional program" (35, p. 44).

The "National FFA Contests Bulletin No. 4" states (34, p. 2):

The National Contests are educational activities organized by the National FFA Organization and sponsored through the National FFA Foundation, Inc., and Special Industry Sponsors. They are designed to complement classroom instruction by giving students an opportunity to apply classroom knowledge in competitive situations.

The "Advisors Guide to the Student Handbook" (31) expressed the above idea by suggesting to local chapter FFA advisors that no contest should be entered that is not a natural outgrowth of their instructional programs. The above mentioned advisors guide continued by suggesting that assumptions must be made when preparing students for contests. The first assumption presented was "First and foremost, these contests are
designated to be valuable learning experiences" (31, p. 36).

Contests have not always been viewed as "valuable learning experiences." Johnson (23) stated that: "The value and justification of contests as a part of our educational program in vocational agriculture has been questioned on numerous occasions" (p. 76). Mayfield (29) expressed the opinion that contests had originally been designed as educational tools to further develop agricultural competencies and stimulate motivation with winning being secondary. He then stated that: "The priorities today, however, may be reversing" (p. 54). These individuals felt that contests still had educational value, but that changes were needed to improve them.

Probably the most extreme statement was made by Wilson (44, p. 196):

> We should eliminate contests in vocational agriculture. I know this is heresy. I know also that many people would agree with me. Some of them are trying to make contests educational. Some are trying to make them less objectionable. My view is that we should cease trying to improve something that when improved is still not good and should not be a part of an educational program in a democratic society.

It is apparent, though, that the National FFA Organization and most of the agricultural education profession recognize the national contests as valuable educational activities that are a natural outgrowth of the vocational agriculture instructional program.

Even though the national contests are recognized as educational activities, no overall objectives for the National Contest Program have ever been developed. Objectives for individual contests are stated in
"Bulletin No. 4," but no overall or broad educational objectives have been developed for the contest program as a whole.

Purposes for judging or team contests have been stated in the FFA Advisors Handbook (32), the Student Handbook (33), and the Official Manual (35). The purposes stated in the FFA Advisors Handbook were (32, p. 98):

1. To help the individual member develop new and improved leadership abilities and skills.
2. To serve as a practical extension of the classroom.
3. To increase involvement of members in the chapter program.
4. To help publicize the work of the chapter (p. 98).

The purposes stated in the Student Handbook (33) and the 1984 Official Manual (35) were similar and were stated in the 1984 Official Manual as "Contests help develop: (1) technical knowledge; (2) ability to make sound judgments; (3) ability to defend the decisions; and (4) the ability to be a gracious winner or, a good loser" (35, p. 60).

The above mentioned purposes provide little opportunity to use them in the ways proposed by Geis (15). He suggested that purposes or objectives be used to: 1) manage instruction; 2) manage learning; 3) plan instruction; 4) enhance learning; 5) facilitate evaluation; 6) aid in communication; 7) design or redesign curriculum; and 8) produce new insights.

Harlass suggested that objectives are important because (16, p. 21):

1. They tell you, the problem solver, how you will know when you've achieved.
2. Objectives are a convenient way for communicating intended achievements to others.
3. Objectives are the only way that measures of achievement can be made systematically and scientifically.
4. Objectives increase the probability that the remedy you develop will be relevant to the problem.

Educators have long recognized that objectives fall within at least three domains: cognitive, affective and psychomotor. Within each of the domains, a taxonomy has been developed to facilitate the writing and interpretation of educational objectives. The first taxonomy was developed and explained by Bloom (5) in *The Taxonomy of Educational Objectives, Handbook I: Cognitive Domain*, published in 1956. The cognitive domain deals with the recall or recognition of knowledge and the development of intellectual skills and abilities. The taxonomy is hierarchical in nature with six major classifications from simple to complex: 1) knowledge, 2) comprehension, 3) applications, 4) analysis, 5) synthesis, and 6) evaluation. Each of these six major classifications were sub-categorized.

Krathwohl et al. (24) in 1964 developed *The Taxonomy of Educational Objectives, Handbook II: Affective Domain*, which dealt with interests, attitudes, values, appreciations, and emotional sets and biases in the development of objectives. Five major hierarchical classifications were given: 1) receiving, 2) responding, 3) valuing, 4) organization, and 5) characterization. Sub-categories were also developed for these major classifications.

In 1972, Harrow (17) published *A Taxonomy of the Psychomotor Domain* which classified manipulative or motor skill objectives. The major hierarchical categories were: 1) reflex movements, 2) basic-fundamental
movements, 3) perceptual abilities, 4) physical abilities, 5) skilled movements, and 6) non-discursive communication.

Harrow indicated that the purpose of these three taxonomies was to provide a model that can be utilized by educators to assist them in becoming more efficient in organizing their instructional goals and to better evaluate achievement of learning concerned with cognitive, affective, and psychomotor behaviors.

As alluded to by the three domains previously mentioned, McKeachie suggested that objectives should focus on more than the student simply learning a set of facts. He stated that (27, pp. 6-7):

... it is important to begin with the note that the objectives involve educating students; the objectives are not to cover a certain set of topics, but rather to facilitate student learning. Typically, too, we are not concerned simply with the learning of a set of facts, but rather with the learning that can be applied and used in situations outside the course examination. In fact, in most courses we are concerned about helping our students begin a lifelong learning process; that is, we want to develop interest in further learning and provide a base of knowledge and skills that will facilitate further learning. Similarly, each course contributes to other general goals of ... education that transcend specific subject matter, such as being willing to explore ideas contrary to one's own beliefs and knowing when information or data are relevant to an issue and how to find them.

Tyler (42) also indicated that the needs of learners beyond the classroom were important as a source of educational objectives. He suggested that it might be profitable to break down those needs into different phases, or categories to make investigation more convenient and gave the following list as an example (42, p. 9): "1) health, 2) immediate social relationships, including life in the family and
with friends and acquaintances, 3) socio-civic relationships, including the civic life of the school and the community, 4) the consumer aspects of life, 5) occupational life, and 6) recreational.

Roberts (39) reported that the Milwaukee Public Schools identified six categories of goal areas in their model to assess the needs of students. The six areas identified were: 1) communications and other basic skills, 2) cultural and aesthetic values, 3) success in the working world, 4) consumer knowledge, 5) self-esteem, and 6) human relations.

The need for policies and guidelines for the National FFA Contest Program was evident from a review of the literature and was recognized by the National FFA Board of Directors. The "National FFA Contests, Bulletin No. 4 1985/1986/1987" (34) provides the "criteria" used to govern the National FFA Contests. This publication sets forth the standards and rules required for individuals and teams to compete in the National FFA Contests. No mention is made, however, about criteria to be used for adding, changing, or discontinuing a National FFA Contest.

Deyoe (14) stated in 1948 that "Contests which are of questionable value from the educational standpoint must be improved or discarded. Proposals for new contests must be carefully evaluated and the contests adopted only if they rate in this regard" (p. 75). The need for criteria to guide discussion and final approval of contests was again felt in 1981. Carter reported that (7, p. 1):

Questions have been raised regarding adoption of new national FFA contests. The research committee of the
National FFA Board of Directors was asked by the board at the January 1981 meeting to survey the states in an attempt to identify criteria to be used for approving new contests and to report these findings at the July 1981 Board meeting. This study by Carter resulted in five criteria being recommended to the National FFA Board of Directors.

Recently, questions regarding adding, changing, and discontinuing National FFA Contests have been raised which prompted the need for the development of criteria for changing and discontinuing contests, and further research regarding adding contests. The need for these policies and objectives for the National FFA Contest Program resulted in this study.

Corbin (9) identified four methods of collecting expert opinions to formulate goals and objectives. These methods included 1) use of a single expert, 2) use of several experts treated individually, 3) use of a small group or committee, and 4) use of the Delphi technique. The simplest of these methods would be to use a single expert and accept that person's judgment. Rasp (38) reported that a single opinion may be warranted if available evidence is extremely limited and generally known to all practitioners, or if the person chosen stands out clearly as more knowledgeable than all others. These conditions were not present in this study.

The use of several experts treated individually can provide the researcher with a decision-making base, but no process is provided for the experts to reach a consensus opinion. The experts are not able to make their decisions based on the opinions of the other experts since
the researcher attempts to average their opinions without the benefit of the experts interacting with each other. This method limits the opinions of the experts, as Sutphin observed, "to the abilities and perceptions of their author" (40, p. 36). Corbin (9) indicated that there was evidence to suggest that consensus judgments were more accurate than individual opinions.

Small group (round-table discussions) or committee work is the most traditional method for arriving at a consensus opinion or judgment. Beal et al. (2) found that the effectiveness of a committee is generally superior to the work of an individual. However, there are several objectionable factors such as persuasion by the group member with the greatest authority, or loudest voice, unwillingness to abandon opinions, the bandwagon effect, and the time and cost involved with getting the panel together for a meeting or a series of meetings (9, 18).

The fourth method, the Delphi technique, utilizes a series of questionnaires to solicit the opinions, goals and objectives from a panel of experts and reach a consensus of the panel. This procedure attempts to overcome the objections of the more traditional ways of obtaining consensus through round-table discussions or by committee work.

The Rand Corporation is credited with developing the Delphi Technique. Originally, it was used to forecast questions about the future when the area of concern was surrounded by uncertainty and complexity. Essentially, Delphi is an efficient group method of "brainstorming"
that has several advantages as described by Dalkey (12) as being: 1) anonymous response, 2) iteration and controlled feedback, and 3) statistical group response with the group opinion defined as an appropriate aggregate of individual opinions on the final round.

Uhl (43) reported that as originally developed the Delphi technique consisted of four steps: 1) each participant in a Delphi study is asked to write his/her opinion on goal priorities for a specific topic; 2) each participant is asked to evaluate all of the opinions in terms of a given set of criteria; 3) each participant receives the list and a summary of the responses, and if his/her view varies from the majority of the responses, he/she is asked either to revise his/her opinion or to indicate the reason for not doing so; and 4) each participant receives the list with an updated summary including minority opinions and is asked to repeat or revise his/her own opinion. Modifications of the technique to provide for a variety of uses have been suggested by researchers over the years since the original conception of the Delphi technique.

The sequence of events in the Delphi process that had implications for this study were identified by Delbecq et al. (13) and summarized as follows:

1. The first step and key to the Delphi Process was the development of the Delphi questions. Adequate time was given to help respondents answer appropriately and to lessen their frustrations. Users of the Delphi technique should make every effort to clarify exactly what information is needed.
2. The next step in the process was selection of respondents (discussed in more detail later).
3. The size of the respondent panel is the next consideration. Size varies according to how homogenous the group will be.

4. Delphi Questionnaire #1 allows participants to write responses to a broad problem issue in the form of open-ended questions. Pretesting the questionnaire and follow-ups will increase the response rate.

5. Analysis of returned questionnaires (#1) result in a summary list of items identified and comments made. The list should reflect the initial opinions of respondents concerning the objectives, yet be short enough for all respondents to easily review, criticize, support, or oppose.

6. In development of Questionnaire #2, it is important that each item accurately conveys the meaning which respondents attempted to communicate by means of Questionnaire #1. The second questionnaire asks participants to review the summarized responses to the first questionnaire, and rank items to establish preliminary priority among the items.

7. The analysis of Questionnaire #2 should include tally votes for items and a summary of comments about the items. The "vote tally sheet" contains the total votes received by each item and also how votes by respondents differed.

8. Questionnaire #3 (the final one) permits respondents to review previous responses and express their individual judgments as to the importance of each item. This step provides closure for the study.

9. Analysis of Questionnaire #3 follows the same procedure as the analysis of Questionnaire #2. Care should be taken to have clarity of this final statement so that nonparticipants will understand categories and phrasing.


Linstone and Turoff presented six criteria that could lead to using the Delphi technique. They were (25, p. 4):

1. The problem does not lend itself to precise analytical techniques but benefits can be derived from subjective judgments on a collective basis.

2. The individuals needed to contribute to the examination of a broad or complex problem have no history of adequate communication and may represent diverse backgrounds with respect to experience or expertise.

3. More individuals are needed than can effectively interact in a face-to-face exchange.
4. Time and cost make frequent group meetings infeasible.
5. Disagreements among individuals are so severe or politically unpalatable that the communication process must be referred and/or anonymity assured.
6. The heterogeneity of the participants must be preserved to assure validity of the results, i.e., avoidance of domination by quantity or by strength of personality [bandwagon effect].

Helmer (18) felt that the Delphi technique could be used as a method for educational innovation. Hostrop (21) indicated that the Delphi technique provides a more objective means to determine the range of ideas about goals and objectives, provide priority ranking for goals and objectives, and establish the degree of consensus about the goals and objectives. Sutphin (40) observed that the Delphi technique could assist an investigator in assessing the what is and what should be with regard to organizational conditions, goals, and objectives. The Delphi technique has been used to determine and establish educational goals and objectives. McNeil stated that (26, pp. 98-99):

The Delphi method is used by curriculum workers to obtain a consensus on goals and objectives for the future. By this method one tries to obtain the intuitive insights of experts and then uses these judgments systematically. In vocational education, content is often selected through Delphi as a way to find what is likely to be useful to future graduates of the school.

Corbin summarized the advantages found in the literature of using the Delphi technique over other research methodologies. They were (9, p. 51):

(1) an anonymous response is received, (2) controlled feedback can be obtained, (3) statistical group response is offered, (4) it creates some important elements of an ideal debate, (5) a basis for long-range decision making is provided, (6) psychological factors are overcome (ideas are modified on the basis of reason rather than prestige)
or the desire to climb on the bandwagon), (7) it stimulates participants to consider other opinions which they may have easily overlooked, and (8) there is less of an effort for participants to respond to a Delphi Questionnaire than to participate in a conference or meeting.

The Delphi facilitates consensus of opinion without face-to-face meetings among panel members, and thus overcomes the objections to such meetings.

Sample size is an important consideration when using the Delphi technique. Bunning (6) stated that: "No guidelines exist that describe the most appropriate number of experts to select for the Delphi process" (p. 180). Anderson (1) stated that: "Once the number of experts gets beyond 25 or 30, handling the data (especially the arguments advanced) becomes exceedingly cumbersome" (p. 9). Delbecq et al. (13) made the following observations: "The size of the respondent panel is variable. With a homogeneous group of people, ten to fifteen participants might be enough. . . . Our experience indicates that few new ideas are generated within a homogeneous group once the size exceeds thirty well-chosen participants" (p. 89). The literature reveals that a wide range of sample sizes have been used with the Delphi technique.

Sutphin (40) summarizing the literature indicated that the sample size should be held to the minimum number necessary to obtain the needed amount of expertise to effectively conduct the study to reduce cost and reduce an overabundance of data which becomes cumbersome and yields no additional information for the study. Hence, sample size becomes whatever the researcher deems as adequate for the study at hand.
Delbecq et al. (13) suggested that those who serve on a Delphi panel as respondents should 1) feel personally involved in the problem of concern to the decision makers; 2) have pertinent information to share; 3) be motivated to include the Delphi task in their schedule of competing tasks; and 4) feel that the aggregation of judgments of respondent panel will include information which they too value and to which they would not otherwise have access. Pfeiffer (37) observed that opinions of individuals who are knowledgeable and desire to participate are frequently solicited in the Delphi technique. Obviously, unlike traditional mail surveys which often solicit opinions from a sample of participants who have marginal qualifications to respond as an authority on a particular subject area, the Delphi solicits responses from authorities (21). Helmer and Rescher (19) suggested that experts be used because the information and the body of experience at their disposal constitute an assurance that they will select the needed items of background information, determine the character and extent of their relevance, and apply these insights to the formulation of the required personal probability judgments.

Related Research

Herren (20) studied the 1981 National FFA Livestock Judging Contest using the contestants and their FFA advisors as the population. The purpose of the study was to identify the factors associated with the success of the teams that participated in the contest. In relation to this study, he found that in some instances winning may be overpowering
educational value as the primary objective of the contest.

Carter (8) studied six of the national FFA contests (Dairy, Milk Quality and Dairy Foods, Floriculture, Meats, Poultry, and Agricultural Mechanics) using contestant feedback. The study found that over 96% of those participating in the Dairy, Milk Quality and Dairy Foods, and Floriculture contests rated the educational value of participation as "OK" or "Good". Of the same group, over 94% rated the "Effectiveness" of the contests as "OK" or "Good". No "Educational value" rating was reported for the other three contests. However, over 89% of those participating in the Meats, Poultry, and Agricultural Mechanics contests rated the "Effectiveness of Contest" as "Good" or "Excellent."

Howard (22) reported on a study of the National FFA Dairy, and Milk Quality and Dairy Foods Contests. She found, as did Carter, that the participants felt the contests were effective and had educational value.

The studies cited indicate that concern has been expressed about the educational value of the National FFA Contest Program in that evaluation to that effect has been initiated. Objectives and administrative criteria, as earlier stated, would facilitate the evaluation of the contests.

Carter (7) recommended five criteria for approving new national FFA contests. The study identified the five criteria from a list of 11 criteria that were developed by input received from vocational agriculture teachers, state supervisors, teacher educators, and national FFA staff members. A questionnaire was developed from the list of
criteria identified and sent to a sample population representing state supervisors, state executive secretaries, teacher educators, vocational agriculture teachers, and others who had prior involvement with the national FFA contests and/or national FFA organization.

Carter recommended the following five criteria to the National FFA Board of Directors (7, p. 9):

1. At least 50 percent of the states should be conducting instructional programs in the taxonomy area covered in the proposed contest.
2. At least 25 states should be conducting similar contests at the state level.
3. Proposed national FFA contests should be approved by the National FFA Contest Study Committee before considered by the Board.
4. Objective evaluation and scoring should be included in proposed national contests.
5. The skills and competencies required in the proposed contest must be needed by vocational agriculture/agribusiness students.

The study by Carter (7) indicates the interest that the National FFA Board of Directors and others in and associated with the FFA organization have in establishing administrative criteria. It was this interest that prompted the present study.

Crawford and Cossitt (10) did a study comparing three group processes for decision making in an organization. The three processes--regular face-to-face interaction groups, the nominal group technique (NGT), and the Delphi technique--were compared in terms of their ability to facilitate the quantitative and qualitative productivity of a decision making group. They reported that "the results unequivocally supported the superiority of the Delphi procedures" (p. 57).
MacMillan (28) used the Delphi technique to achieve consensus on curriculum goals in a project at Mendocino College. He identified three goal categories to aid in the process. The three categories were knowledge, skills and abilities, and attitudes and values. He also observed that the controlled feedback aspect of the technique served to focus the priority viewpoint without threatening those of dissenting opinions.

In a study to clarify the goals for the School of Education at the University of Virginia, Cyphert and Gant (11) used the Delphi technique. They reported that a considerable amount of administrative work was required with the technique; however, the data generated proved to be useful in formulating the future goals of the School of Education. Cyphert and Gant also felt that the survey had made the influential individuals in the commonwealth aware of the existence of the school and a vested interest in its future accomplishments.

Other studies have used the Delphi technique to set or clarify goals in an educational setting. Anderson (1) indicated that the technique was effective in obtaining consensus toward clarifying and setting objectives. Bentley (4) felt that the results of the technique produce expert consensus that is plausible and convincing in regard to setting goals and priorities.

Corbin in his study to formulate goals and objectives for the High School Division of the Distributive Education Clubs of America concluded (9, p. 170):

The Delphi technique should be given serious consideration
as a research methodology if an investigator wants participants to make better decisions on the topic being investigated. Several researchers have indicated that the Delphi technique is a very potent device for teaching people to think about the topic or subject being investigated in much more complex ways than they ordinarily would.

In summary, the National FFA Contests are recognized as educational activities that are a part of the intra-curricular Future Farmers of America Organization in vocational agriculture. It is evident from this review of literature that educational objectives need to be developed to make the National FFA Contests more efficient and effective. Secondly, objectives should be formulated clearly enough for those involved with or interested in the National FFA Contests to understand. Thirdly, objectives should be written with previously developed taxonomies in mind. Fourth, that educational outcomes beyond those immediately associated with a National FFA Contest should be considered. Fifth, that the establishment of categories or area of concern should help facilitate the formulation of objectives.

It is evident from the review of literature that the National FFA Organization is in need of and seeks administrative criteria to give guidance in adding, discontinuing, and changing National FFA Contests.

The literature reviewed revealed that the Delphi technique had several advantages over other research methods that would facilitate the development of objectives as desired. The Delphi allowed for the soliciting of objectives from individuals knowledgeable about the area of study without a conference or meeting, thus overcoming the problems associated with such meetings as already mentioned. Therefore, the
researcher concluded that it was the best research method available to accomplish the objectives of this study.
METHODS AND PROCEDURES

This chapter presents the research methodology used to formulate the objectives and administrative criteria for the National FFA Contests. Specifically, the chapter will be in two parts: 1) research procedures, and 2) data treatment.

Research Procedures

Instrument development

Three Delphi Questionnaires were developed and used in this study. The design of Delphi Questionnaires one and two were similar to those suggested by Delbecq et al. (13). The third questionnaire utilized an importance scale whereby the respondent could rate the importance of each objective and administrative criteria formulated as a result of information gathered through the first two questionnaires.

A review of literature, research, and consultation with a faculty member in the Agricultural Education Department at Iowa State University indicated that six areas of concern should be addressed to aid in the development of objectives for the National FFA Contests. The six concern areas were: 1) vocations and careers; 2) basic skills; 3) personal development; 4) sociological and cultural; 5) health and leisure; and 6) subject knowledge.

Three areas of concern were identified for development of administrative criteria for the National FFA Contests. They were: 1) adding a new contest; 2) discontinuing a national contest; and 3) changing a national contest.
On the first questionnaire, the six concern areas for developing the objectives and the three concern areas for developing administrative criteria were stated in open-ended question format. A descriptor sentence was added to the six questions used for developing objectives to help clarify for respondents the meaning attached to the terms used in identifying the six concern areas. In addition, four researcher-developed objectives and four researcher-developed administrative criteria were added under the open-ended questions for each of the concern areas to further clarify the meaning of a particular area of concern, and to provide an example to help respondents begin to generate their own objectives and administrative criteria.

The researcher-developed objectives and administrative criteria were added as a result of suggestions made by graduate students in Agricultural Education at Iowa State University who were involved with a pretest of simulated Delphi Questionnaires 1 and 2. The pretest group indicated that generated items would help respondents in the areas already identified above.

The respondents were instructed to indicate whether they agreed or disagreed with the researcher-generated objectives and administrative criteria, write comments about the items, and/or change the items if they felt the need to do so.

In addition, the respondents were asked to write at least one additional objective or administrative criterion under each concern area. A copy of the cover letter and Delphi Questionnaire #1 can be found in Appendix A.
The objectives and administrative criteria formulated by each of the respondents from Delphi Questionnaire #1 were compiled into lists representing the respective concern areas. Like items were combined to formulate revised objectives and administrative criteria lists to be used in the second questionnaire.

Delphi Questionnaire #2 was developed from the lists of objectives and administrative criteria generated from the first questionnaire. The second questionnaire had essentially the same format as the first, six objective concern areas and three administrative criteria concern areas using the same open-ended questions as was generated for the previous questionnaire.

On the second questionnaire, the respondents were asked to rank the revised lists of objectives and administrative criteria with the most important item receiving the lowest number (1 = most important, etc.). This ranking system was employed due to suggestions made after a pretest of a simulated Delphi Questionnaire #2.

The simulated questionnaire was administered to graduate students in Agricultural Education at Iowa State University. The graduate students were requested to rank the items on the questionnaire with the most important item receiving the highest number. This ranking system resulted in some confusion on the part of those involved in the pretest. The suggestions from the pretest respondents, and consultation with faculty in the Department of Agricultural Education at Iowa State University, resulted in the researcher deciding to use the aforementioned ranking system.
Comments from respondents to the first questionnaire were compiled and summarized in two reports covering the objectives and administrative criteria. These reports, along with the second questionnaire, were sent to respondents. Included in the summaries were the reactions to the researcher generated items. A copy of the cover letter, summaries, and Delphi Questionnaire #2 are included in Appendix B.

Delphi Questionnaire #3 was developed after a thorough analysis of the results provided by Delphi Questionnaire #2. The format for the objectives was changed in that the six concern areas were removed and one list of objectives compiled. The list of objectives in the third questionnaire resulted from the researcher combining objectives identified as similar by the respondents and identifying those objectives that were consistently ranked in the top half of each concern area objective list from the second questionnaire. The researcher determined those objectives consistently ranked in the top half of each concern area objective list by 1) dividing the total number of objectives in each list by two for determination of a cut-off point, 2) comparing the calculated cut-off point with the mean rank of each objective within each of the lists, and 3) deleting those objectives from each list with a mean rank greater than the cut-off point. This was done after consultation with a faculty member in the Department of Agricultural Education at Iowa State University.

The administrative criteria lists were left in their original three concern areas to avoid confusion of respondents as to how the criteria would be applied to the National FFA Contests. It was felt from the
responses received on earlier questionnaires that adequate differences existed between the functions of adding, discontinuing, and changing a contest and that those distinctions should continue between the administrative criteria.

The lists of administrative criteria that were included in the third questionnaire resulted from a process similar to the one used to identify the objectives except that those items consistently ranked in the bottom quarter of each list were removed. This was accomplished by dividing the total number of criteria in each list by 1.5, instead of 2, and following the same procedure as listed for the objectives. The parameters were widened when determining which administrative criteria to include in each area because of the small number of criteria in each concern area. In addition, the researcher wanted to maintain a viable list of criteria in each of the three criteria concern areas.

An importance scale with values from 1 to 5 (1 indicating no importance and 5 indicating utmost importance) was selected after a review of literature and discussions with knowledgeable individuals at Iowa State University. The scale provided the respondents with an opportunity to indicate those objectives and administrative criteria they felt to be important for the National FFA Contest program.

A summary was also prepared that explained the preparation of the third questionnaire and summarized the comments received from the second questionnaire. A copy of the cover letter, summary, and Delphi Questionnaire #3 appear in Appendix C.
Selection of Delphi panel

After reviewing the literature and related research, four groups were identified from which individuals could be selected for the Delphi panel. The four groups were: 1) the National FFA Board of Directors; 2) the National FFA Contest Superintendents; 3) the Special Advisory Committee on the National FFA Contests; and 4) industry representatives who had been involved with the National FFA Contests that were nominated by the Contest Superintendents. The total number of individuals contacted to participate in the study was 43. Of the 43 individuals contacted, 33 agreed to participate in the study. This size of Delphi panel was within acceptable standards for this study as dictated by Anderson (1) and the others. A list of the participants can be found in Appendix D.

Respondents who did not wish to participate in the study were asked to return blank questionnaires (three individuals). Those not returning the first questionnaire before the mailing of the second questionnaire, after being contacted by the researcher by telephone, were assumed not to meet the criteria for Delphi panel participation as indicated by the literature review (seven individuals). Of the ten participants who didn't respond, five were industry representatives, three were members of the Special Advisory Committee, and two were members of the National FFA Board of Directors.

It should be noted that two individuals were included, Dr. David Williams and Dr. R. Dale Perritt, who were not members of the four groups previously identified. Dr. Perritt volunteered to be included
when he filled out and returned the first questionnaire, and indicated that the person to whom it had originally been sent was no longer with the university. Dr. Williams received a blank questionnaire that had been returned to the department from an individual who desired not to participate in the study, and he, not knowing this was the case, filled out and returned the questionnaire. He received the returned questionnaire before the department secretaries were alerted to the oversight of the researcher not identifying the return envelopes properly. After consultation with a faculty member at Iowa State University, it was decided that these individuals were qualified to participate in the study and that their inclusion would pose no threat to the validity of the study's results.

The individuals that were selected to participate met the criteria suggested by Delbecq et al. (13) as being important to selection of the Delphi panel. Nash (30) observed that experts in the area under investigation hold the most powerful positions and it is likely that their opinions will come to pass. It was felt that the individuals selected to participate were those that were in a position to either recommend changes, make changes, or both.

Collection of data

The three questionnaires described in this chapter were used in the formulation of objectives and administrative criteria for the National FFA Contests. The questionnaires were printed and mailed, along with appropriate cover letters and summaries, to each Delphi panel.
participant. Copies of the questionnaires, cover letters and summaries can be found in Appendices A, B, and C.

The three questionnaires were mailed on December 14, 1984; March 11, 1985; and April 26, 1985, respectively. Each of the individuals receiving a questionnaire were contacted by telephone as a follow-up if the researcher had not received their questionnaire within a week after the stated deadline for return had expired. The stated deadlines for return of the three questionnaires were January 11, 1985; March 20, 1985; and May 8, 1985, respectively. Response rates for the three questionnaires from the Delphi panel were 100%.

Data Treatment

The treatment of data involved the use of percentages, means, and rank order due to the nature of the research process utilized.

Statistical analysis for Delphi Questionnaire #1 involved the calculation and report of the percentages of respondents that agreed, disagreed or did not respond to the researcher generated objectives and administrative criteria.

The statistical analysis process for Delphi Questionnaire #2 involved 1) calculation of the percentage of respondents who indicated a desire to eliminate any of the six concern areas used to formulate the objectives, 2) calculation of a mean rank for each objective and administrative criteria based on the ranking of each item by the respondents, 3) determination of a cut-off point for retaining objectives by dividing the total number of objectives on each list by 2 and
the cut-off point for the administrative criteria on each list by 1.5, and 4) comparison of mean rank calculated in step 2 with the respective cut-off points calculated in step 3 to determine the objectives and administrative criteria to retain.

The statistical analysis process for Delphi Questionnaire #3 was: 1) calculation of a mean importance ranking for each objective and administrative criteria, 2) listing of each objective and administrative criteria according to the mean importance rating calculated in Step 1 from most important to least important, 3) determine a mean importance rating point that would serve to identify the objectives and administrative criteria to be recommended to the National FFA Board of Directors.

The objectives and administrative criteria formulated for the National FFA Contest Program were reported in their order of rated importance with the mean importance rating indicated.
FINDINGS

This chapter presents a summary of responses provided by the Delphi panel from the three questionnaires. The data are organized under the following headings: 1) Delphi Questionnaire #1, 2) Delphi Questionnaire #2, and 3) Delphi Questionnaire #3.

Delphi Questionnaire #1

Data in Table 1 and Table 2 present the percentage of Delphi panel members that were in agreement, disagreement, or had no response to the researcher-generated objectives and administrative criteria according to the concern area question. The researcher-generated objectives and administrative criteria in Table 1 are presented as they appeared in Delphi Questionnaire #1. The concern area questions of the first questionnaire are referred to by number in the following summary of findings.

Concerning Question I, the majority of those responding agreed with the context of all the researcher-generated objectives. Minor wording changes were suggested by the group and were incorporated into the objectives as they were presented in the second questionnaire.

The wording changes made in the four researcher-generated objectives were as follows: Objective 1 changed "Create an awareness" to "Demonstrate an understanding"; Objective 2 changed "Promote" to "Demonstrate an understanding"; Objective 3 changed "Develop an appreciation of good workmanship" to "Demonstrate the ability to do or recognize quality work"; and Objective 4 changed "Create an awareness" to
Table 1. Percent agree, disagree and non-response to researcher-generated questions with objectives

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Percent</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Agree</td>
<td>Disagree</td>
<td>Non-response</td>
<td></td>
</tr>
<tr>
<td>Question I. What should be the educational objectives for all National FFA Contests concerning &quot;vocations and careers&quot;?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Create an awareness of new technologies in industry.</td>
<td>81.8</td>
<td>12.1</td>
<td>6.1</td>
<td></td>
</tr>
<tr>
<td>2. Promote acceptance of industry innovations.</td>
<td>75.8</td>
<td>15.1</td>
<td>9.1</td>
<td></td>
</tr>
<tr>
<td>3. Develop an appreciation of good workmanship</td>
<td>75.8</td>
<td>15.1</td>
<td>9.1</td>
<td></td>
</tr>
<tr>
<td>4. Create an awareness of the requirements, responsibilities, opportunities, etc., of the major careers in industry.</td>
<td>72.7</td>
<td>18.2</td>
<td>9.1</td>
<td></td>
</tr>
<tr>
<td>Question II. What should be the educational objectives for all National FFA Contests pertaining to &quot;basic skills&quot;?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Develop mathematical skills.</td>
<td>57.6</td>
<td>30.3</td>
<td>12.1</td>
<td></td>
</tr>
<tr>
<td>2. Develop communication skills.</td>
<td>75.8</td>
<td>15.2</td>
<td>9.1</td>
<td></td>
</tr>
<tr>
<td>3. Develop decision-making skills</td>
<td>84.8</td>
<td>6.1</td>
<td>9.1</td>
<td></td>
</tr>
<tr>
<td>4. Application of basic skills to contest.</td>
<td>81.8</td>
<td>6.1</td>
<td>12.1</td>
<td></td>
</tr>
<tr>
<td>Question III. What should be the educational objectives for all National FFA Contests regarding &quot;personal development&quot;?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Develop a positive attitude towards lifelong learning.</td>
<td>93.9</td>
<td>0.0</td>
<td>6.1</td>
<td></td>
</tr>
<tr>
<td>2. Develop a sense of accomplishment in completing tasks.</td>
<td>90.9</td>
<td>0.0</td>
<td>9.1</td>
<td></td>
</tr>
<tr>
<td>3. Develop an awareness of self and the relationship between self and work.</td>
<td>69.8</td>
<td>15.1</td>
<td>15.1</td>
<td></td>
</tr>
<tr>
<td>4. Develop an awareness of personal interests and their role in decision making.</td>
<td>72.7</td>
<td>21.2</td>
<td>6.1</td>
<td></td>
</tr>
</tbody>
</table>
Table 1. Continued

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Agree</th>
<th>Disagree</th>
<th>Non-response</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Question IV. What should be the educational objectives for all National FFA Contests regarding &quot;sociological and cultural&quot;?</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Develop an understanding of group interactions and relationships.</td>
<td>69.7</td>
<td>24.2</td>
<td>6.1</td>
</tr>
<tr>
<td>2. Identify social influences and their role in decision-making.</td>
<td>54.6</td>
<td>33.3</td>
<td>12.1</td>
</tr>
<tr>
<td>3. Identify the social and cultural contribution made by agricultural knowledge.</td>
<td>66.7</td>
<td>24.2</td>
<td>9.1</td>
</tr>
<tr>
<td>4. Develop an awareness of the economic impact and importance of agriculture.</td>
<td>84.8</td>
<td>9.1</td>
<td>6.1</td>
</tr>
<tr>
<td><strong>Question V. What should be the educational objectives for all National FFA Contests concerning &quot;health and leisure&quot;?</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Develop ability to use leisure time productively.</td>
<td>63.6</td>
<td>27.3</td>
<td>9.1</td>
</tr>
<tr>
<td>2. Identify safety procedures and health hazards in occupations within a contest area.</td>
<td>81.8</td>
<td>6.1</td>
<td>12.1</td>
</tr>
<tr>
<td>3. Identify agriculturally related activities that could be pursued during leisure time.</td>
<td>48.5</td>
<td>36.4</td>
<td>15.1</td>
</tr>
<tr>
<td>4. Identify relationships between physical fitness and performance.</td>
<td>57.6</td>
<td>27.3</td>
<td>15.1</td>
</tr>
<tr>
<td><strong>Question VI. What should be the educational objectives for all National FFA Contests pertaining to &quot;subject knowledge&quot;?</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Identify technical agriculture knowledge needed in contest area.</td>
<td>84.8</td>
<td>9.1</td>
<td>6.1</td>
</tr>
<tr>
<td>2. Demonstrate ability to apply the needed technical knowledge.</td>
<td>93.9</td>
<td>0.0</td>
<td>6.1</td>
</tr>
<tr>
<td>3. Develop awareness of cross-discipline technical agriculture knowledge needed.</td>
<td>81.8</td>
<td>9.1</td>
<td>9.1</td>
</tr>
<tr>
<td>4. Demonstrate techniques and/or skills that are needed.</td>
<td>90.9</td>
<td>3.0</td>
<td>6.1</td>
</tr>
</tbody>
</table>
"Demonstrate an understanding" and dropped "salaries" out of the objective.

The majority of the panel indicated that at the contests the participants should be demonstrating knowledge in the areas indicated by the objectives. Also, it was indicated that the term "good workmanship" might be too limiting and that a broader term should be used. Salaries were observed to be less important than concern for occupational requirements and opportunities.

The majority of respondents to Question II agreed with the given objectives in context, but did suggest that the word "Develop" in objectives 1 through 3 be changed to "Demonstrate." Objective 4 wording was changed from "Application of" to "Demonstrate and apply the other." The phrase, "associated with the contest area," was added to all the researcher-generated objectives to indicate that different contests stress different skills.

The majority of respondents to Question III agreed with the researcher-generated objectives and they were presented in the second questionnaire without change. It should be noted, however, that several panel members expressed concern as to whether the contests could or should meet the objectives in this concern area.

The majority of responses to Question IV agreed with the researcher-generated objectives and they were presented without change in the second questionnaire. It should be noted, however, that several individuals doubted whether the objectives in this concern area should be included among the objectives for the national contests.
Question V objectives were generally accepted by the group, but by a narrower margin than the other concern areas. Several panel members commented that the concern area covered by Question V would be better dealt with elsewhere in the vocational agriculture curriculum.

Question VI received the strongest support from the Delphi panel members. As a result, the researcher-generated objectives were presented in the second questionnaire with only very minor word changes. The word changes consisted of adding the phrase "in the contest area" to objectives 2, 3 and 4.

Concerning the administrative criteria, the researcher-generated criteria for adding a new contest was generally accepted by the majority of the Delphi panel, except for Criterion 1. Criterion 1 was rejected because of the high number of states required to add a national contest. The number for this criterion was changed from "forty" to "thirty" for the second questionnaire as a result of the comments received from panel members.

A change in Criterion 4 for adding a new contest was also suggested by the panel. The suggested change was to give a range for the "industry review panel." Instead of "10," it was changed for the second questionnaire to read "5-10."

Criteria 2 and 4 for discontinuing a national contest were generally accepted by the panel. However, Criteria 1 and 3 were rejected due to the large number of states that each criterion required. As a result of the comments received from the panel, the words "the national and/or the individual contest objectives" were added to clarify the
Table 2. Percent agree, disagree and non-response to researcher-generated questions with administrative criteria

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Percent Agree</th>
<th>Percent Disagree</th>
<th>Percent Non-Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question I. What criteria should be met when adding a new contest?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Forty or more states should be providing instruction in the area in which the contest is proposed.</td>
<td>30.3</td>
<td>63.6</td>
<td>6.1</td>
</tr>
<tr>
<td>2. Proposed national contests must be approved by the National FFA Contest Study Committee and the National FFA Student Delegate Contest Committee before being considered by the National FFA Board of Directors.</td>
<td>78.8</td>
<td>18.2</td>
<td>3.0</td>
</tr>
<tr>
<td>3. Specific educational benefits (minimum of three) not otherwise provided through existing state and local programs shall be stated in support of the proposed contest.</td>
<td>66.6</td>
<td>27.3</td>
<td>6.1</td>
</tr>
<tr>
<td>4. The content of the proposed new contest must be judged appropriate to existing conditions and trends in the industry it represents by a 10 member industry review panel.</td>
<td>87.9</td>
<td>9.1</td>
<td>3.0</td>
</tr>
<tr>
<td>Question II. What criteria should be met when discontinuing a national contest?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Less than 30 states are providing instruction in the area covered by the contest.</td>
<td>39.5</td>
<td>51.5</td>
<td>9.1</td>
</tr>
<tr>
<td>2. Contest content is outdated or irrelevant as perceived by a panel of industry representatives and a polling of past contest participants.</td>
<td>81.8</td>
<td>9.1</td>
<td>9.1</td>
</tr>
<tr>
<td>3. Less than 30 states are conducting a state contest and/or entering their teams in the national contest.</td>
<td>33.3</td>
<td>51.5</td>
<td>15.2</td>
</tr>
<tr>
<td>4. Contest is not in agreement with contest objectives.</td>
<td>72.7</td>
<td>15.2</td>
<td>12.1</td>
</tr>
</tbody>
</table>
Table 2. Continued

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Agree</th>
<th>Disagree</th>
<th>Nonresponse</th>
</tr>
</thead>
<tbody>
<tr>
<td>Question III. What criteria should be used to change national contests?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. The contest is not focused on skills and competencies required by workers in the industry which the contest represents.</td>
<td>90.9</td>
<td>3.0</td>
<td>6.1</td>
</tr>
<tr>
<td>2. The contest is not in tune with the majority of state contests.</td>
<td>45.5</td>
<td>48.4</td>
<td>6.1</td>
</tr>
<tr>
<td>3. The contest content is not in agreement with the contest objectives.</td>
<td>81.8</td>
<td>9.1</td>
<td>9.1</td>
</tr>
<tr>
<td>4. Evaluations of participating vocational agriculture teachers and students suggest changes in the contest.</td>
<td>81.8</td>
<td>12.1</td>
<td>6.1</td>
</tr>
</tbody>
</table>

The meaning of criterion 4 and the number "30" was changed to "25" in both criteria 1 and 3.

Criteria 1, 3, and 4 for changing a contest were accepted and were not changed for use in the second questionnaire. Criterion 2, however, was changed according to comments received and the fact that no clear majority was established either to accept or reject it. Based on the comments received from the panel, the words "in tune with the majority of state contests" were dropped and the words "representative of the majority of similar state contests" were added. The debate on Criterion 2 centered on whether the national FFA contests should follow the lead of the state contests or vice versa.

The Delphi panel generated, according to concern area question, the
following numbers of objectives: Question I--18, Question II--23, Question III--23, Question IV--17, Question V--14, and Question VI--17, for a total of 112 objectives. The number of administrative criteria generated were: Question I--24, Question II--18, and Question III--14, for a total of 56 criteria.

The following lists of objectives and administrative criteria were formulated as a result of the analysis of Delphi Questionnaire #1. The lists are presented under their respective concern area questions.

I. What should be the educational objectives for all national FFA contests concerning "vocations and careers"?

   1. Demonstrate an understanding of new technologies in industry.
   2. Demonstrate an understanding of industry innovations.
   3. Demonstrate the ability to do or recognize quality work.
   4. Demonstrate an understanding of the requirements, responsibilities, opportunities, etc., of the major careers in industry.
   5. Demonstrate competencies, skills, abilities, and knowledge needed for employment in agricultural occupations related to the contest area. Affective and cognitive as well as psychomotor.
   6. Create an awareness of the importance of quality productivity.
   7. Develop positive attitude in students toward being successful in agricultural occupations.
   8. Create an awareness of current industry standards, procedures, and technology.
   9. Create awareness of the occupational opportunities and fields of interest associated with the contest area.
   10. Develop and enhance the students' perception of the free enterprise and democratic systems.
   11. Develop and encourage entrepreneurial skills related to the
II. What should be the educational objectives for all National FFA Contests pertaining to "basic skills?"

1. Demonstrate mathematical skills associated with the contest area.
2. Demonstrate communication skills associated with the contest area.
3. Demonstrate decision-making skills associated with the contest area.
4. Demonstrate and apply the other basic skills associated with a contest area.
5. Demonstrate and develop management and leadership skills necessary for leaders in agriculture.
6. Demonstrate and develop uses of common organizational and manipulative skills and abilities required in contest area that are related to those necessary in agribusiness and industry.
7. Demonstrate and promote the use of scientific, problem-solving, and higher thinking skills and abilities through practical application within the contest area.
8. Demonstrate skills to differentiate between desirable and undesirable work, products, and/or outcomes in the contest area.
9. Demonstrate an awareness of and appreciation for skills needed in a contest and how they relate to the world of work.
10. Demonstrate ability to communicate in the terminology appropriate to the agribusiness or industry related to the contest area.
11. Develop understanding of importance of "basic skills" to success in agricultural occupations.
12. Reinforce and demonstrate skills and competencies learned in the vocational agriculture program.
13. Develop computer and other technical skills related to the area of the contest.

III. What should be the educational objectives for all National
FFA Contests regarding "personal development?"

1. Develop a positive attitude towards lifelong learning.

2. Develop a sense of accomplishment in completing tasks.

3. Develop an awareness of self and the relationship between self and work.

4. Develop an awareness of personal interests and their role in decision making.

5. Develop and enhance self-confidence and self-esteem by providing opportunities in the contest for students to defend their judgment through oral or written responses, completion of tasks, and recognition for work well done.

6. Develop and enhance leadership potential and management ability.

7. Promote the importance of good grooming and dress for a positive personal appearance.

8. Recognize the relationship between personal development and career development.

9. Develop the individual's awareness of their surroundings, i.e., foods, products, materials, equipment, etc.

10. Promote and develop an appreciation for competition, fair play, and how to both win and lose gracefully.

11. Foster the development of a personal value system congruent with democratic ideals.

12. Develop and promote the importance of learning more about a specific area.

13. Develop awareness of personal interests and their role in completing tasks.

14. Provide an opportunity for students to interact with one another, business and industry people, etc.

15. Provide motivation for student learning.

16. Provide a challenge for students to help them in goal setting.

17. Provide an opportunity for students to increase their self-esteem and self-confidence through active involvement and
achievement.

IV. What should be the educational objectives for all National FFA Contests regarding "sociological and cultural"?

1. Develop an understanding of group interactions and relationships.
2. Identify social influences and their role in decision making.
3. Identify the social and cultural contribution made by agricultural knowledge.
4. Develop an awareness of the economic impact and importance of agriculture.
5. Develop and enhance the importance of team work (working with others toward a common goal) and good relationships with others whether at work or otherwise.
6. Promote the ideals of honesty (in its broad aspect), respect, consideration, service, etc., to others.
7. Recognize the contributions made by agriculture to American culture, i.e., lifestyles, business, industry, government, etc.
8. Recognize that competition is critical and essential to the competitive free enterprise system.
9. Recognize the contest area's importance in food, products, and materials and their effect on society.
10. Develop an awareness of the social and cultural contributions made to agriculture from other areas.
11. Recognize the impact of societal trends and issues on agriculture as related to the contest area.
12. Develop an awareness of adults' interest in and support of youth and their development.
13. Recognize the benefits and importance of participation in worthwhile activities.

V. What should be the educational objectives for all National FFA Contests concerning "health and leisure"?

1. Develop ability to use leisure time productively.
2. Identify safety procedures and health hazards in occupations within a contest area.

3. Identify agriculturally related activities that could be pursued during leisure time.

4. Identify relationships between physical fitness and performance.

5. Recognize the relationship of well-being both physically and mentally to competitive abilities and success in work related endeavors.

6. Recognize the need for safety precautions and performing tasks safely.

7. Develop appreciation for and conservation of natural resources during leisure activities.

8. Develop an appreciation for agriculturally related activities that could be pursued during leisure time.

9. Develop an appreciation for working in a healthy environment as it relates to agricultural careers.

10. Develop skills and abilities, i.e., cognitive, affective and/or psychomotor, which transfer to recreational and leisure activities.

11. Promote the development of leisure time activities in the local program of activities.

12. Develop an appreciation for the value and rewards of hard work.

VI. What should be the educational objectives for all National FFA Contests pertaining to "subject knowledge"?

1. Identify technical agriculture knowledge needed in contest area.

2. Demonstrate ability to apply the needed technical knowledge in the contest area.

3. Develop awareness of cross-discipline technical agriculture knowledge needed in the contest area.

4. Demonstrate techniques and/or skills that are needed in the contest area.
5. Demonstrate ability to locate and properly use resource information and/or technical assistance required to complete tasks in pertinent areas of agriculture.

6. Recognize the effect of changing technical knowledge on our society and how it changes us over time.

7. Recognize the importance and effects of being an informed consumer and how consumer information has effected agriculture.

8. Demonstrate and develop students' understanding and skills in completing tasks common to occupations in agricultural areas focused on by the contest.

9. Demonstrate ability to synthesize and use contest area technical knowledge (competences) developed to solve problems in practical work simulations.

10. Recognize the importance of using the latest technical knowledge in the contest area.

11. Recognize the difference in real and artificial agricultural products related to the contest area.

12. Recognize the interrelationships between agricultural and other industries' technical knowledge.

13. Recognize the international scope of agricultural knowledge.

14. Demonstrate technical knowledge common throughout the country and not unique to a specific region as it applies to a specific contest area.

15. Develop appreciation of the importance of technical knowledge.

I. What criteria should be met when adding a new contest?

1. Thirty or more states should be providing instruction in the area in which the contest is proposed.

2. Proposed national contests must be approved by the National FFA Contest Study Committee and the National FFA Student Delegate Contest Committee before being considered by the National FFA Board of Directors.

3. Specific educational benefits (minimum of three) not otherwise provided through existing state and local programs shall be stated in support of the proposed contest.
4. The content of the proposed new contest must be judged appropriate to existing conditions and trends in the agricultural business or industry it represents by a 5-10 member industry/business review panel.

5. Adequate resources must be available to conduct the contest, i.e., financial (industry sponsorship), facilities, equipment, staffing, etc., in a way that provides a quality educational experience for participants.

6. Twenty-five or more states must petition for a new national contest to the National FFA Board of Directors.

7. The new national contest must compliment the content and instruction of pertinent agricultural education areas taught in vocational agriculture classes nationally.

8. A panel of FFA teachers who teach in the proposed contest area must evaluate and recommend it to the Board.

9. Strive to maintain an equitable balance between production and agribusiness contests.

10. A national survey must be taken of all Vo-Ag departments and 85% of the departments within each state must approve it before being forwarded to the National FFA Board of Directors.

11. The contest content should reflect the instructional program of thirty or more states before being approved.

12. Specific educational benefits that are not provided in other national contests must be developed and presented before approval.

13. New contests should be added based on the number of students served by the instructional area rather than by state, with consideration given to increased numbers of students being taken out of school and the additional time away from school it would require.

14. Teachers or whoever should provide justification for a new contest based on its educational value for students beyond that accomplished by local and state levels.

II. What criteria should be met when discontinuing a national contest?

1. Less than 25 states are providing instruction in the area covered by the contest.
2. Contest content is outdated or irrelevant as perceived by a panel of business/industry representatives and a polling of past contest participants.

3. Less than 25 states are conducting a state contest and/or entering their teams in the national contest.

4. Contest is not in agreement with the national and/or individual contest objectives.

5. Lack of resources and/or support to provide a quality educational experience for participants.

6. The contest no longer is relevant to current instructional goals and objectives, and/or agribusiness and industry occupational needs as determined by a research study.

7. The cost of a contest financially and time wise outweighs the benefits derived by the number of students participating.

8. Less than "from 20 to 45" state or associations are participating in the contest.

9. Contest deleted only after input from industry and/or agribusiness people, vo-ag teachers, contest committee, and past contest participants has been received and approves its deletion.

10. Less than 85% of the student enrollment in less than 30 states is in the instructional area covered by the contest.

III. What criteria should be used to change national contests?

1. The contest is not focused on skills and competencies required by workers in the industry which the contest represents.

2. The contest is not representative of the majority of similar state contests.

3. The contest content is not in agreement with the stated national or individual contest objectives.

4. Evaluations of participating vocational agriculture teachers and students suggest changes in the contest.

5. The contest does not represent current skills or competencies needed in the current marketplace.

6. Contests reviewed to determine if too large, if so, then
perhaps they should be split into other contests.

7. Evaluations by vocational educators (local, state, and national), agribusiness and industry representatives, sponsors, past participants, and other interested parties every one to three years are needed to update and/or re-direct the contest.

8. National Contest Study Committee should review contests yearly to determine if changes are needed.

9. Contest does not utilize application of knowledge gained or developed in the instructional program.

10. Contest change due to change in available resources.

11. Current contest does not use instructional materials of the instructional program.

12. Topic of contest is no longer a major part of the curricula in most schools and states.

The above listed objectives and administrative criteria were used in Delphi Questionnaire #2.

Delphi Questionnaire #2

The second questionnaire provided an opportunity for the Delphi panel to indicate their approval of the six concern areas used to help formulate the objectives. The results were that Concern Areas II, III, and VI received 100% approval and Concern Areas I, IV, and V received 97% approval. One dissenting opinion was observed for each of concern areas I, IV, and V.

Data in Tables 3 and 4 present the mean of respondent rankings of the objectives and administrative criteria as calculated from the responses received on the second questionnaire. The objectives and criteria are listed according to concern area questions, and appear as
Table 3. Mean of respondent rankings of objectives for Delphi Questionnaire #2

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Mean rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>QUESTION I. What should be the educational objectives for all National FFA Contests concerning &quot;vocations and careers&quot;?</td>
<td></td>
</tr>
<tr>
<td>1. Demonstrate an understanding of new technologies in industry.</td>
<td>6.9</td>
</tr>
<tr>
<td>2. Demonstrate an understanding of industry innovations.</td>
<td>8.0</td>
</tr>
<tr>
<td>3. Demonstrate the ability to do or recognize quality work.</td>
<td>5.3</td>
</tr>
<tr>
<td>4. Demonstrate an understanding of the requirements, responsibilities, opportuni ties, etc., of the major careers in industry.</td>
<td>4.8</td>
</tr>
<tr>
<td>5. Demonstrate competencies, skills, abilities, and knowledge needed for employment in agricultural occupations related to the contest area. Affective and cognitive as well as psychomotor.</td>
<td>1.8</td>
</tr>
<tr>
<td>6. Create an awareness of the importance of quality productivity.</td>
<td>5.6</td>
</tr>
<tr>
<td>7. Develop positive attitude in students toward being successful in agricultural occupations.</td>
<td>5.1</td>
</tr>
<tr>
<td>8. Create an awareness of current industry standards, procedures, and technology.</td>
<td>4.4</td>
</tr>
<tr>
<td>9. Create awareness of the occupational opportunities and fields of interest associated with the contest area.</td>
<td>5.5</td>
</tr>
<tr>
<td>10. Develop and enhance the students' perception of the free enterprise and democratic systems.</td>
<td>9.0</td>
</tr>
<tr>
<td>11. Develop and encourage entrepreneurial skills related to the contest area.</td>
<td>7.2</td>
</tr>
</tbody>
</table>

QUESTION II. What should be the educational objectives for all National FFA Contests pertaining to "basic skills"?

<table>
<thead>
<tr>
<th>Objectives</th>
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</tr>
</thead>
<tbody>
<tr>
<td>1. Demonstrate mathematical skills associated with the contest area.</td>
<td>7.8</td>
</tr>
<tr>
<td>2. Demonstrate communication skills associated with the contest area.</td>
<td>6.7</td>
</tr>
<tr>
<td>3. Demonstrate decision-making skills associated with the contest area.</td>
<td>4.1</td>
</tr>
</tbody>
</table>
Table 3. Continued

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Mean rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. Demonstrate and apply the other basic skills associated with a contest area.</td>
<td>8.6</td>
</tr>
<tr>
<td>5. Demonstrate and develop management and leadership skills necessary for leaders in agriculture.</td>
<td>7.1</td>
</tr>
<tr>
<td>6. Demonstrate and develop uses of common organizational and manipulative skills and abilities required in contest area that are related to those necessary in agribusiness and industry.</td>
<td>6.0</td>
</tr>
<tr>
<td>7. Demonstrate and promote the use of scientific, problem-solving, and higher thinking skills and abilities through practical application within the contest area.</td>
<td>4.6</td>
</tr>
<tr>
<td>8. Demonstrate skills to differentiate between desirable and undesirable work, products, and/or outcomes in the contest area.</td>
<td>7.1</td>
</tr>
<tr>
<td>9. Demonstrate an awareness of and appreciation for skills needed in a contest and how they relate to the world of work.</td>
<td>7.3</td>
</tr>
<tr>
<td>10. Demonstrate ability to communicate in the terminology appropriate to the agribusiness or industry related to the contest area.</td>
<td>7.6</td>
</tr>
<tr>
<td>11. Develop understanding of importance of &quot;basic skills&quot; to success in agricultural occupations.</td>
<td>5.1</td>
</tr>
<tr>
<td>12. Reinforce and demonstrate skills and competencies learned in the vocational agriculture program.</td>
<td>6.0</td>
</tr>
<tr>
<td>13. Develop computer and other technical skills related to the area of the contest.</td>
<td>10.4</td>
</tr>
</tbody>
</table>

QUESTION III. What should be the educational objectives for all National FFA Contests regarding "personal development"?

1. Develop a positive attitude towards lifelong learning. 8.2
2. Develop a sense of accomplishment in completing tasks. 8.7
3. Develop an awareness of self and the relationship between self and work. 9.4
4. Develop an awareness of personal interests and their role in decision making. 8.2
<table>
<thead>
<tr>
<th>Objectives</th>
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</tr>
</thead>
<tbody>
<tr>
<td>5. Develop and enhance self-confidence and self-esteem by providing opportunities in the contest for students to defend their judgment through oral or written responses, completion of tasks, and recognition for work well done.</td>
<td>3.9</td>
</tr>
<tr>
<td>6. Develop and enhance leadership potential and management ability.</td>
<td>7.7</td>
</tr>
<tr>
<td>7. Promote the importance of good grooming and dress for a positive personal appearance.</td>
<td>12.5</td>
</tr>
<tr>
<td>8. Recognize the relationship between personal development and career development.</td>
<td>9.0</td>
</tr>
<tr>
<td>9. Develop the individual's awareness of their surroundings, i.e., foods, products, materials, equipment, etc.</td>
<td>13.1</td>
</tr>
<tr>
<td>10. Promote and develop an appreciation for competition, fair play, and how to both win and lose gracefully.</td>
<td>8.8</td>
</tr>
<tr>
<td>11. Foster the development of a personal value system congruent with democratic ideals.</td>
<td>10.0</td>
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<tr>
<td>12. Develop and promote the importance of learning more about a specific area.</td>
<td>10.2</td>
</tr>
<tr>
<td>13. Develop awareness of personal interests and their role in completing tasks.</td>
<td>10.4</td>
</tr>
<tr>
<td>14. Provide an opportunity for students to interact with one another, business and industry people, etc.</td>
<td>10.1</td>
</tr>
<tr>
<td>15. Provide motivation for student learning.</td>
<td>6.4</td>
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<tr>
<td>16. Provide a challenge for students to help them in goal setting.</td>
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<td>17. Provide an opportunity for students to increase their self-esteem and self-confidence through active involvement and achievement.</td>
<td>5.6</td>
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</table>

QUESTION IV. What should be the educational objectives for all National FFA contests regarding "sociological and cultural"?

1. Develop an understanding of group interactions and relationships.                                                                                                                                             | 6.2       |
| 2. Identify social influences and their roles in decision making.                                                                                                                                              | 6.8       |
Table 3. Continued

<table>
<thead>
<tr>
<th>Objectives</th>
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<tbody>
<tr>
<td>3. Identify the social and cultural contribution made by agricultural knowledge.</td>
<td>7.1</td>
</tr>
<tr>
<td>4. Develop an awareness of the economic impact and importance of agriculture.</td>
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<tr>
<td>5. Develop and enhance the importance of teamwork (working with others toward a common goal) and good relationships with others whether at work or otherwise.</td>
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<tr>
<td>6. Promote the ideals of honesty (in its broad aspect), respect, consideration, service, etc., to others.</td>
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<td>7. Recognize the contributions made by agriculture to American culture, i.e., lifestyles, business, industry, government, etc.</td>
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<td>8. Recognize that competition is critical and essential to the competitive free enterprise system.</td>
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<td>12. Develop an awareness of adults' interest in and support of youth and their development.</td>
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<tr>
<td>13. Recognize the benefits and importance of participation in worthwhile activities.</td>
<td>7.9</td>
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QUESTION V. What should be the educational objectives for all National FFA Contests concerning "health and leisure"?

1. Develop ability to use leisure time productively. | 5.9
2. Identify safety procedures and health hazards in occupations within a contest area. | 5.0
3. Identify agriculturally related activities that could be pursued during leisure time. | 6.3
4. Identify relationships between physical fitness and performance. | 6.7

...
Table 3. Continued

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<tr>
<td>5. Recognize the relationship of well-being both physically and mentally to competitive abilities and success in work-related endeavors.</td>
<td>4.4</td>
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<tr>
<td>6. Recognize the need for safety precautions and performing tasks safely.</td>
<td>5.0</td>
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<tr>
<td>7. Develop appreciation for and conservation of natural resources during leisure activities.</td>
<td>6.9</td>
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<tr>
<td>8. Develop an appreciation for agriculturally related activities that could be pursued during leisure time.</td>
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<td>9. Develop an appreciation for working in a healthy environment as it relates to agricultural careers.</td>
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<td>12. Develop an appreciation for the value and rewards of hard work.</td>
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QUESTION VI. What should be the educational objectives for all National FFA Contests pertaining to "subject knowledge"?

1. Identify technical agriculture knowledge needed in contest area.                                                                                             | 5.5       |
2. Demonstrate ability to apply the needed technical knowledge in the contest area.                                                                             | 4.3       |
3. Develop awareness of cross-discipline technical agriculture knowledge needed in the contest area.                                                             | 8.7       |
4. Demonstrate techniques and/or skills that are needed in the contest area.                                                                                   | 5.1       |
5. Demonstrate ability to locate and properly use resource information and/or technical assistance required to complete tasks in pertinent areas of agriculture. | 5.1       |
6. Recognize the effect of changing technical knowledge on our society and how it changes us over time.                                                        | 9.7       |
7. Recognize the importance and effects of being an informed consumer and how consumer information has effected agriculture.                                      | 10.2      |
Table 3. Continued

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<tr>
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<tr>
<td>8. Demonstrate and develop students' understanding and skills in completing tasks common to occupations in agricultural areas focused on by the contest.</td>
<td>5.2</td>
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<td>9. Demonstrate ability to synthesize and use contest area technical knowledge (competences) developed to solve problems in practical work simulations.</td>
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<td>11. Recognize the difference in real and artificial agricultural products related to the contest area.</td>
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<td>12. Recognize the interrelationships between agricultural and other industries' technical knowledge.</td>
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<td>14. Demonstrate technical knowledge common throughout the country and not unique to a specific region as it applies to a specific contest area.</td>
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Table 4. Mean of respondent rankings of administrative criteria for Delphi Questionnaire #2

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<tr>
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<tr>
<td>QUESTION I. What criteria should be met when adding a new contest?</td>
<td></td>
</tr>
<tr>
<td>1. Thirty or more states should be providing instruction in the area in which the contest is proposed.</td>
<td>6.9</td>
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<tr>
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<td>5.2</td>
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<tr>
<td>3. Specific educational benefits (minimum of three) not otherwise provided through existing state and local programs shall be stated in support of the proposed contest.</td>
<td>6.7</td>
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<tr>
<td>4. The content of the proposed new contest must be judged appropriate to existing conditions and trends in the agricultural business or industry it represents by a 5-10 member industry/business review panel.</td>
<td>5.0</td>
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<td>5. Adequate resources must be available to conduct the contest, i.e., financial (industry sponsorship), facilities, equipment, staffing, etc., in a way that provides a quality educational experience for participants.</td>
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<tr>
<td>6. Twenty-five or more states must petition for a new national contest to the National FFA Board of Directors.</td>
<td>8.1</td>
</tr>
<tr>
<td>7. The new national contest must complement the content and instruction of pertinent agricultural education areas taught in vocational agriculture classes nationally.</td>
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</tr>
<tr>
<td>8. A panel of FFA Teachers who teach in the proposed contest area must evaluate and recommend it to the Board.</td>
<td>8.0</td>
</tr>
<tr>
<td>9. Strive to maintain an equitable balance between production and agribusiness contests.</td>
<td>9.4</td>
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<td>10. A national survey must be taken of all Vo-Ag departments and 85% of the departments within each state must approve it before being forwarded to the National FFA Board of Directors.</td>
<td>10.6</td>
</tr>
<tr>
<td>11. The contest content should reflect the instructional program of thirty or more states before being approved.</td>
<td>6.8</td>
</tr>
<tr>
<td>12. Specific educational benefits that are not provided in other national contests must be developed and presented before approval.</td>
<td>8.2</td>
</tr>
</tbody>
</table>
Table 4. Continued

<table>
<thead>
<tr>
<th>Administrative criteria</th>
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<tbody>
<tr>
<td>13. New contests should be added based on the number of students served by the instructional area rather than by state, with consideration given to increased numbers of students being taken out of school and the additional time away from school it would require.</td>
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<td>14. Teachers or whoever should provide justification for a new contest based on its educational value for students beyond that accomplished by local and state levels.</td>
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QUESTION II. What criteria should be met when discontinuing a national contest?

1. Less than 25 states are providing instruction in the area covered by the contest. | 5.0       |
2. Contest content is outdated or irrelevant as perceived by a panel of business/industry representatives and a polling of past contest participants. | 3.1       |
3. Less than 25 states are conducting a state contest and/or entering their teams in the national contest. | 5.5       |
4. Contest is not in agreement with the national and/or individual contest objectives. | 5.4       |
5. Lack of resources and/or support to provide a quality educational experience for participants. | 5.4       |
6. The contest no longer is relevant to current instructional goals and objectives, and/or agribusiness and industry occupational needs as determined by a research study. | 3.2       |
7. The cost of a contest financially and time wise outweighs the benefits derived by the number of students participating. | 6.0       |
8. Less than "from 20 to 45" states or associations are participating in the contest. | 7.9       |
9. Contest deleted only after input from industry and/or agribusiness people, vo-ag teachers, contest committee, and past contest participants has been received and approves its deletion. | 4.2       |
10. Less than 85% of the student enrollment in less than 30 states is in the instructional area covered by the contest. | 8.4       |
Table 4. Continued

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>QUESTION III. What criteria should be used to change national contests?</td>
<td></td>
</tr>
<tr>
<td>1. The contest is not focused on skills and competencies required by workers in the industry which the contest represents.</td>
<td>3.4</td>
</tr>
<tr>
<td>2. The contest is not representative of the majority of similar state contests.</td>
<td>7.6</td>
</tr>
<tr>
<td>3. The contest content is not in agreement with the stated national or individual contest objectives.</td>
<td>6.5</td>
</tr>
<tr>
<td>4. Evaluations of participating vocational agriculture teachers and students suggest changes in the contest.</td>
<td>5.5</td>
</tr>
<tr>
<td>5. The contest does not represent current skills or competencies needed in the current marketplace.</td>
<td>4.5</td>
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<tr>
<td>6. Contests reviewed to determine if too large, if so, then perhaps they should be split into other contests.</td>
<td>9.9</td>
</tr>
<tr>
<td>7. Evaluations by vocational educators (local, state, and national), agribusiness and industry representatives, sponsors, past participants, and other interested parties every one to three years are needed to update and/or redirect the contest.</td>
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</tr>
<tr>
<td>8. National Contest Study Committee should review contests yearly to determine if changes are needed.</td>
<td>6.0</td>
</tr>
<tr>
<td>9. Contest does not utilize application of knowledge gained or developed in the instructional program.</td>
<td>4.7</td>
</tr>
<tr>
<td>10. Contest change due to change in available resources.</td>
<td>9.0</td>
</tr>
<tr>
<td>11. Current contest does not use instructional materials of the instructional program.</td>
<td>7.5</td>
</tr>
<tr>
<td>12. Topic of contest is no longer a major part of the curricula in most schools and states.</td>
<td>5.8</td>
</tr>
</tbody>
</table>
they were on Delphi Questionnaire #2. The concern area items on the second questionnaire are referred to by number in the following summary.

Objectives 1, 2, 6, 10, and 11 were deleted from the objective list of Question I as a result of the analysis of responses from the panel. The decision to delete was made by the procedure given in Chapter 3 under Data Treatment. The cut-off point calculated for Question I was 5.5. Objectives with mean ranks above 5.5 were deleted from the list. Objectives 4 and 9 were considered to be similar by the panel and merged into objective 4. It should be noted that deleted objective 6 was considered similar to objective 3.

The wording changes made reflected the desire of the panel to make the objectives student-oriented and measurable, clarify the objectives and administrative criteria, continue the refinement of the objectives and administrative criteria by the researcher, and the merging of similar objectives and criteria when indicated by comments from panel members.

The wording changes made in the remaining objectives for Question I were as follows: Objective 3 changed "do or recognize quality work" to "recognize and perform quality work"; Objective 4 changed "Demonstrate an understanding of" to "Describe" and "industry" to "industries represented by the contest"; Objective 5 changed "competencies, skills, abilities, and knowledge" to "competencies"; Objective 7 changed "Develop positive attitude in students" to "Exhibit positive attitude"; and Objective 8 changed "Create an awareness of" to
"Describe."

Question II objectives deleted because of mean ranks higher than the cut-off point of 6.5 were 1, 2, 4, 5, 8, 9, 10, and 13. Objectives 3 and 7 were merged because the panel perceived them as being similar. Objectives 1, 2, 4, 5, and 11 were also perceived as similar by the panel, with Objective 11 being considered as inclusive of the other four objectives as indicated by comments received.

The wording changes made in the objectives of Questions II were: Objective 5, the words "and develop uses of" were dropped; Objective 7, the words "Develop understanding of importance of 'basic skills' to success in agricultural occupations" were changed to "Use correct 'basic skills' in completing agricultural tasks in contest"; and Objective 12 changed "Reinforce and demonstrate skills and competencies" to "Demonstrate competencies."

Question III objectives deleted because of mean ranks higher than the cut-off point of 8.5 were 2, 3, 7, 8, 9, 10, 11, 12, 13, and 14. Objective 17 was considered by the group to be similar to and included in Objective 5. It should also be noted that even though Objectives 2 and 13 were deleted, they were considered similar to both Objectives 5 and 17.

The wording changes made in the objectives of Question III were: Objective 1 changed "Develop" to "Exhibit"; Objective 4 changed "Developed an awareness of" to "Understand"; Objective 5 changed "Develop and enhance self-confidence and self-esteem by providing opportunities in the contest for students to defend their" to
"Demonstrate" (it was indicated that the students' self-esteem and self-confidence would be developed and enhanced if they participated in the aforementioned activities); Objective 6 changed "Develop and enhance" to "Demonstrate"; Objective 15 changed "Provide motivation for student learning" to "Exhibit motivation toward learning of competencies in contest areas"; and Objective 16 changed "Provide a challenge for students to help them in goal setting" to "Demonstrate goal setting ability by meeting the challenge of participating in a contest."

Question IV objectives deleted due to mean ranks higher than the cut-off point of 6.5 were 2, 3, 9, 10, 11, 12, and 13. Objectives 4 and 7 were considered to be similar and were merged into Objective 4. It should be noted that deleted Objective 3 was considered to be similar to both objectives 4 and 7.

The wording changes of objectives in Question IV were: Objective 1 changed "Develop an understanding of group interactions and relationships" to "Demonstrate group interaction and relationship skills"; Objective 4 changed "Developed an awareness of" to "Recognize" and added the phrase "to American culture, i.e., lifestyles, business, industry, government, etc." to the end of the objective. Objective 5 changed "Develop and enhance the importance of" to "Demonstrate"; Objective 6 changed "Promote" to "Demonstrate." Objective 8 remained unchanged.

Question V objectives deleted because of mean ranks higher than the cut-off point of 6.0 were 3, 4, 7, 8, 9, 11, and 12. Objectives 2 and 6 were merged into Objective 2 after comments from the panel.
indicated that they were similar. It should be noted that Objective 10 was considered similar to deleted Objectives 3 and 8.

The wording changes in Question V objectives were: Objective 2 changed "Identify safety procedures and health hazards" to "demonstrate safety procedures and recognize health hazards"; and Objective 10 changed "Develop skills and abilities, i.e., cognitive, affective, and/or psychomotor" to "Demonstrate cognitive, affective, and/or psychomotor skills and abilities." Objectives 1 and 5 remained unchanged.

Question VI objectives deleted because of mean ranks higher than the cut-off point of 7.5 were 3, 6, 7, 10, 11, 12, 13, 14, and 15. Objectives 2, 4, 8, and 9 were merged into one objective as a result of similarities identified by the Delphi panel.

The wording changes in Question VI objectives were: Objective 1 changed "Identify technical agriculture knowledge needed in contest area" to "Demonstrate ability to apply the needed agricultural technical knowledge in the contest area"; and Objectives 2, 4, 8, and 9 were changed to "Demonstrate knowledge and skills in completing tasks common to occupations in agricultural areas focused on by the contest." Objective 5 remained unchanged after analysis.

Concerning administrative criteria, Question I criteria deleted because of mean ranks higher than the cut-off point of 9.3 were 9, 10, and 13. Criteria 1 and 11 were considered by the panel to be expressing the same thought and as a result, 11 was dropped. Criteria 3, 12, and 14 were also perceived as similar by the panel with Criterion 3 being retained to represent all three criteria.
The wording changes in Question I criteria were: Criterion 1 changed "area" to "topic area"; Criterion 2 changed "National FFA Contest Study Committee" to "Special Advisory Committee for National Contests"; and Criterion 4 changed "member industry/business review panel" to "member review panel consisting of representatives from the industries and business represented by the contest." Criteria 3, 5, 6, 7, and 8 remained unchanged.

Question II criteria deleted because of mean ranks higher than the cut-off point of 6.7 were 8 and 10. Criteria 2 and 6 were perceived as similar by the panel and Criterion 6 was merged into Criterion 2.

The wording change made in Question II criteria was: Criterion 2 changed "and a polling of past contest participants" to "a polling of past contest participants, and evidence secured through studies of the contest." Criteria 1, 3, 4, 5, 7, and 9 remained without change.

Question III criteria deleted because of mean ranks higher than the cut-off point of 8.0 were 6 and 10. Criteria considered similar by the panel were 1 and 5, and 4, 7, and 8. Criterion 5 was indicated to be included in Criterion 1 and was dropped to avoid repetition. Criteria 4 and 8 were merged into Criterion 7. Criteria 1, 2, 3, 9, 11, and 12 were not changed; however, Criterion 7 word changes were "vocational educators" to "vocational agricultural educators," "one to three" to "three" and "needed" to "made."

The following list of objectives and administrative criteria lists were formulated as a result of the analysis of Delphi Questionnaire #2. The objectives are presented as one list under the heading of
Educational Objectives, and the administrative criteria are presented under their respective concern areas.

**Educational objectives**

1. Describe the requirements, responsibilities, opportunities, etc., of the major careers in industries represented by the contest.

2. Demonstrate competencies needed for employment in agricultural occupations related to the contest area (affective and cognitive as well as psychomotor).

3. Exhibit positive attitude toward being successful in agricultural occupations.

4. Describe current industry standards, procedures, and technology.

5. Demonstrate the use of scientific, problem-solving, and decision-making skills and abilities through practical application within the contest area.

6. Use correct "basic skills" in completing agricultural tasks in contests.

7. Demonstrate judgment through oral or written responses, completion of tasks, and recognition for work well done.

8. Recognize the economic impact and importance of agriculture to American culture, i.e., lifestyles, business, industry, government, etc.

9. Demonstrate teamwork (working with others toward a common goal) and good relationships with others whether at work or otherwise.

10. Demonstrate the ideals of honesty (in its broad aspect), respect, consideration, service, etc., to others.

11. Demonstrate safety procedures and recognize health hazards in occupations within a contest area.

12. Recognize the relationship of well-being, both physically and mentally, to competitive abilities and success in work related endeavors.

13. Demonstrate cognitive, affective and/or psychomotor skills and
abilities, which transfer to recreational and leisure activities.

14. Demonstrate ability to apply the needed agricultural technical knowledge in the contest area.

15. Demonstrate ability to locate and properly use resource information and/or technical assistance required to complete tasks in pertinent areas of agriculture.

16. Demonstrate knowledge and skills in completing tasks common to occupations in agricultural areas focused on by the contest.

17. Demonstrate the ability to recognize and perform quality work.

18. Demonstrate common organizational and manipulative skills and abilities required in contest areas that are related to those necessary in agribusiness and industry.

19. Demonstrate competencies learned in the vocational agriculture program.

20. Exhibit a positive attitude towards lifelong learning.

21. Understand personal interests and their role in decision making.

22. Demonstrate leadership potential and management ability.

23. Exhibit motivation toward learning of competencies in contest areas.

24. Demonstrate goal setting ability by meeting the challenge of participating in a contest.

25. Demonstrate group interaction and relationship skills.

26. Recognize that competition is critical and essential to the competitive free enterprise system.

27. Develop ability to use leisure time productively.

Administrative criteria

Adding contests

1. Proposed national contests must be approved by the Special Advisory Committee for National Contests and the National
FFA Student Delegate Contest Committee before being considered by the National FFA Board of Directors.

2. The content of the proposed new contest must be judged appropriate to existing conditions and trends in the agricultural business or industry it represents by a 5-10 member review panel consisting of representatives from the industries and businesses represented by the contest.

3. The new national contest must compliment the content and instruction of pertinent agricultural education areas taught in vocational agriculture classes nationally.

4. Thirty or more states should be providing instruction in the topic area in which the contest is proposed.

5. Specific educational benefits (minimum of three) not otherwise provided through existing state and local programs shall be stated in support of the proposed contest.

6. Adequate resources must be available to conduct the contest, i.e., financial (industry sponsorship), facilities, equipment, staffing, etc., in a way that provides a quality educational experience for participants.

7. Twenty-five or more states must petition for a new national contest to the National FFA Board of Directors.

8. A panel of FFA teachers who teach in the proposed contest area must evaluate and recommend it to the Board.

Discontinuing contests

1. Less than 25 states are providing instruction in the area covered by the contest.

2. Contest content is outdated or irrelevant as perceived by a panel of business/industry representatives, a polling of past contest participants, and evidence secured through studies of the contest.

3. Contest is not in agreement with the national and/or individual contest objectives.

4. Contest deleted only after input from industry and/or agribusiness people, vo-ag teachers, contest committee, and past contest participants has been received and approves its deletion.
5. Less than 25 states are conducting a state contest and/or entering their teams in the national contest.

6. Lack of resource and/or support to provide a quality educational experience for participants.

7. The cost of a contest financially and timewise outweighs the benefits derived by the number of students participating.

**Changing contests**

1. The contest is not focused on skills and competencies required by workers in the industry which the contest represents.

2. Evaluations by vocational agricultural educators (local, state, and national), agribusiness and industry representatives, sponsors, past participants, and other interested parties every three years are made to update and/or redirect the contest.

3. Contest does not utilize application of knowledge gained or developed in the instructional program.

4. The contest content is not in agreement with the stated national or individual contest objectives.

5. Topic of contest is no longer a major part of the curricula in most schools and states.

6. The contest is not representative of the majority of similar state contests.

7. Current contest does not use instructional materials of the instructional program it represents.

The above listed objectives and administrative criteria were used in Delphi Questionnaire #2.

**Delphi Questionnaire #3**

Data in Tables 5 and 6 present the mean importance rating for each of the objectives (Table 5) and administrative criteria (Table 6) as calculated from the responses received on the third questionnaire. The objectives and administrative criteria appear, without change, under
the same headings as was used in the third questionnaire. The objectives and criteria are, however, listed in order of importance from the most important to the least important.

The researcher decided that objectives with a mean importance rating of 3.5 and higher would be retained to recommend to the National FFA Board of Directors. The mean importance rating of 3.5 and higher would indicate the objectives that were consistently rated as of "Much Importance" or "Utmost Importance" by the Delphi panel. The range of mean importance ratings for each of the descriptors on the questionnaire were as follows: "No Importance" from -0.5 to 1.5, "Little Importance" from 1.5 to 2.5, "Moderate Importance" from 2.5 to 3.5, "Much Importance" from 3.5 to 4.5, and "Utmost Importance" from 4.5 to 5.5. It should be noted, however, that only two objectives had mean importance ratings below 2.6 and that none of the criteria had mean importance ratings below 3.0.
Table 5. Mean importance ratings of respondents to objectives for Delphi Questionnaire #3

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Mean rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educational Objectives</td>
<td></td>
</tr>
<tr>
<td>17. Demonstrate the ability to recognize and perform quality work.</td>
<td>4.6</td>
</tr>
<tr>
<td>5. Demonstrate the use of scientific, problem-solving, and decision-making skills and abilities through practical application within the contest area.</td>
<td>4.5</td>
</tr>
<tr>
<td>14. Demonstrate ability to apply the needed agricultural technical knowledge in the contest area.</td>
<td>4.4</td>
</tr>
<tr>
<td>19. Demonstrate competencies learned in the vocational agriculture program.</td>
<td>4.4</td>
</tr>
<tr>
<td>2. Demonstrate competencies needed for employment in agricultural occupations related to the contest area (affective and cognitive as well as psychomotor).</td>
<td>4.4</td>
</tr>
<tr>
<td>6. Use correct &quot;basic skills&quot; in completing agricultural tasks in contests.</td>
<td>4.3</td>
</tr>
<tr>
<td>16. Demonstrate knowledge and skills in completing tasks common to occupations in agricultural areas focused on by the contest.</td>
<td>4.2</td>
</tr>
<tr>
<td>18. Demonstrate common organizational and manipulative skills and abilities required in contest area that are related to those necessary in agribusiness and industry.</td>
<td>4.2</td>
</tr>
<tr>
<td>11. Demonstrate safety procedures and recognize health hazards in occupations within a contest area.</td>
<td>4.1</td>
</tr>
<tr>
<td>3. Exhibit positive attitude toward being successful in agricultural occupations.</td>
<td>4.1</td>
</tr>
<tr>
<td>7. Demonstrate judgment through oral or written responses, completion of tasks, and recognition for work well done.</td>
<td>4.1</td>
</tr>
<tr>
<td>4. Describe current industry standards, procedures, and technology.</td>
<td>4.0</td>
</tr>
<tr>
<td>15. Demonstrate ability to locate and properly use resource information and/or technical assistance required to complete tasks in pertinent areas of agriculture.</td>
<td>4.0</td>
</tr>
</tbody>
</table>
Table 5. Continued

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Mean rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>10. Demonstrate the ideals of honesty (in its broad aspect), respect, consideration, service, etc., to others.</td>
<td>4.0</td>
</tr>
<tr>
<td>9. Demonstrate teamwork (working with others toward a common goal) and good relationships with others whether at work or otherwise.</td>
<td>4.0</td>
</tr>
<tr>
<td>22. Demonstrate leadership potential and management ability.</td>
<td>3.7</td>
</tr>
<tr>
<td>20. Exhibit a positive attitude towards lifelong learning.</td>
<td>3.6</td>
</tr>
<tr>
<td>26. Recognize that competition is critical and essential to the competitive free enterprise system.</td>
<td>3.5</td>
</tr>
<tr>
<td>24. Demonstrate goal setting ability by meeting the challenge of participating in a contest.</td>
<td>3.5</td>
</tr>
<tr>
<td>23. Exhibit motivation toward learning of competencies in contest areas.</td>
<td>3.4</td>
</tr>
<tr>
<td>1. Describe the requirements, responsibilities, opportunities, etc., of the major careers in industries represented by the contest.</td>
<td>3.4</td>
</tr>
<tr>
<td>8. Recognize the economic impact and importance of agriculture to American culture, i.e., lifestyles, business, industry, government, etc.</td>
<td>3.3</td>
</tr>
<tr>
<td>25. Demonstrate group interaction and relationship skills.</td>
<td>3.2</td>
</tr>
<tr>
<td>21. Understand personal interests and their role in decision making.</td>
<td>3.1</td>
</tr>
<tr>
<td>12. Recognize the relationship of well-being, both physically and mentally, to competitive abilities and success in work-related endeavors.</td>
<td>3.0</td>
</tr>
<tr>
<td>13. Demonstrate cognitive, affective and/or psychomotor skills and abilities, which transfer to recreational and leisure activities.</td>
<td>2.6</td>
</tr>
<tr>
<td>27. Develop ability to use leisure time productively.</td>
<td>2.6</td>
</tr>
</tbody>
</table>
Table 6. Mean importance ratings of respondents to administrative criteria for Delphi Questionnaire #3

<table>
<thead>
<tr>
<th>Administrative criteria</th>
<th>Mean rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adding Contests</td>
<td></td>
</tr>
<tr>
<td>3. The new national contest must complement the content and instruction of pertinent agricultural education areas taught in vocational agriculture classes nationally.</td>
<td>4.5</td>
</tr>
<tr>
<td>2. The content of the proposed new contest must be judged appropriate to existing conditions and trends in the agricultural business or industry it represents by a 5-10 member review panel consisting of representatives from the industries and businesses represented by the contest.</td>
<td>4.3</td>
</tr>
<tr>
<td>6. Adequate resources must be available to conduct the contest, i.e., financial (industry sponsorship), facilities, equipment, staffing, etc., in a way that provides a quality educational experience for participants.</td>
<td>4.3</td>
</tr>
<tr>
<td>1. Proposed national contests must be approved by the Special Advisory Committee for National Contests and the National FFA Student Delegate Contest Committee before being considered by the National FFA Board of Directors.</td>
<td>4.1</td>
</tr>
<tr>
<td>4. Thirty or more states should be providing instruction in the topic area in which the contest is proposed.</td>
<td>3.7</td>
</tr>
<tr>
<td>5. Specific educational benefits (minimum of three) not otherwise provided through existing state and local programs shall be stated in support of the proposed contest.</td>
<td>3.4</td>
</tr>
<tr>
<td>7. Twenty-five or more states must petition for a new national contest to the National FFA Board of Directors.</td>
<td>3.4</td>
</tr>
<tr>
<td>8. A panel of FFA teachers who teach in the proposed contest area must evaluate and recommend it to the Board.</td>
<td>3.0</td>
</tr>
<tr>
<td>Discontinuing Contests</td>
<td></td>
</tr>
<tr>
<td>2. Contest content is outdated or irrelevant as perceived by a panel of business/industry representatives, a polling of past contest participants, and evidence secured through studies of the contest.</td>
<td>4.3</td>
</tr>
</tbody>
</table>
Table 6. Continued

<table>
<thead>
<tr>
<th>Administrative criteria</th>
<th>Mean rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>4. Contest deleted only after input from industry and/or agribusiness people, vo-ag teachers, contest committee, and past contest participants has been received and approves its deletion.</td>
<td>4.2</td>
</tr>
<tr>
<td>6. Lack of resources and/or support to provide a quality educational experience for participants.</td>
<td>3.9</td>
</tr>
<tr>
<td>3. Contest is not in agreement with the national and/or individual contest objectives.</td>
<td>3.8</td>
</tr>
<tr>
<td>7. The cost of a contest financially and timewise outweighs the benefits derived by the number of students participating.</td>
<td>3.8</td>
</tr>
<tr>
<td>5. Less than 25 states are conducting a state contest and/or entering their teams in the national contest.</td>
<td>3.5</td>
</tr>
<tr>
<td>1. Less than 25 states are providing instruction in the area covered by the contest.</td>
<td>3.5</td>
</tr>
</tbody>
</table>

Changing Contests

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<table>
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<tr>
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<tbody>
<tr>
<td>2. Evaluations by vocational agricultural educators (local, state, and national), agribusiness and industry representatives, sponsors, past participants, and other interested parties every three years are made to update and/or redirect the contest.</td>
<td>4.5</td>
</tr>
<tr>
<td>1. The contest is not focused on skills and competencies required by workers in the industry which the contest represents.</td>
<td>4.4</td>
</tr>
<tr>
<td>3. Contest does not utilize application of knowledge gained or developed in the instructional program.</td>
<td>4.2</td>
</tr>
<tr>
<td>4. The contest content is not in agreement with the stated national or individual contest objectives.</td>
<td>4.0</td>
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<tr>
<td>5. Topic of contest is no longer a major part of the curricula in most schools and states.</td>
<td>3.9</td>
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<td>7. Current contest does not use instructional materials of the instructional program it represents.</td>
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</table>
Table 6. Continued

<table>
<thead>
<tr>
<th>Administrative criteria</th>
<th>Mean rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>6. The contest is not representative of the majority of similar state contests.</td>
<td>3.2</td>
</tr>
</tbody>
</table>
DISCUSSION

The purpose of this study was to formulate overall or broad educational objectives and administrative criteria for the National FFA Contest Program. Generalizations made on the basis of this study are somewhat limited due to the research procedures utilized. The purposefully selected Delphi panel, however, consisted of individuals knowledgeable about the national contests and representing several groups within vocational agriculture participated in this study. On the basis of the combined knowledge, experience, opinion, and thought provided by these individuals, educational objectives and administrative criteria were formulated, observations made, and conclusions drawn.

The review of literature indicated that the National Contest Program was generally recognized as an instructional tool of educational value, though not without some controversy. This study confirmed the existence of that controversy from the comments received from the panelists.

The researcher had expected to find all of the panelists supportive of the national contests; this was not the case. One panel member indicated that contests beyond the state level served little or no educational purpose. He felt that the contests served only to build the egos of vocational agriculture teachers and that the contests should be the first thing eliminated if financial problems began to plague the organization. Interestingly, this individual continued to respond to all the questionnaires and returned them on time, indicating to the researcher an interest in improving the contests if they were to
continue to exist.

It should be noted that some panelists wanted it made clear that the contests were only a part of the total vocational agriculture and FFA programs—an instructional tool that would serve as an incentive to the student to demonstrate skills and knowledge gained in the classroom. It is the opinion of the investigator that contests should help make learning interesting and challenging and reward extra effort on the part of the students involved.

As one panel member stated, "A continued effort needs to be made to point out that contests are not the primary objective and culmination of instruction. Contests are solely an instructional tool, among others, to meet program goals and develop competence." The researcher agrees with the panel members who expressed concern over the ability of the contest to meet the broad range of student needs indicated by the six concern areas and the educational objectives formulated.

The National FFA Contests were made to have educational value as an instructional tool. They should, however, be recognized as only a part of the total program of vocational agriculture and not as a primary objective.

The first objective of this study was to establish educational objectives for the National FFA Contests which encompassed the areas of vocations and careers, basic skills, personal development, health and leisure, and subject matter. A list of objectives for the contests were formulated that did include at least one objective from each of the original six concern areas. This was determined by the researcher
tracing the objectives from the third questionnaire back to the six concern areas in order to see if the first objective had been met.

The educational objectives formulated and recommended by this study were as follows:

Demonstrate the ability to recognize and perform quality work.

Demonstrate the use of scientific, problem-solving, and decision-making skills and abilities through practical application within the contest area.

Demonstrate ability to apply the needed agricultural technical knowledge in the contest area.

Demonstrate competencies learned in the vocational agriculture program.

Demonstrate competencies needed for employment in agricultural occupations related to the contest area (affective and cognitive as well as psychomotor).

Demonstrate knowledge and skills in completing tasks common to occupations in agricultural areas focused on by the contest.

Use correct "basic skills" in completing agricultural tasks in contests.

Demonstrate common organizational and manipulative skills and abilities required in contest area that are related to those necessary in agribusiness and industry.

Demonstrate safety procedures and recognize health hazards in occupations within a contest area.

Exhibit positive attitude toward being successful in agricultural occupations.

Demonstrate judgment through oral or written responses, completion of tasks, and recognition for work well done.

Describe current industry standards, procedures, and technology.

Demonstrate ability to locate and properly use resource information and/or technical assistance required to complete tasks in pertinent areas of agriculture.
Demonstrate the ideals of honesty (in its broad aspect), respect, consideration, service, etc., to others.

Demonstrate teamwork (working with others toward a common goal) and good relationships with others whether at work or otherwise.

Demonstrate leadership potential and management ability.

Exhibit a positive attitude towards lifelong learning.

Recognize that competition is critical and essential to the competitive free enterprise system.

Demonstrate goal setting ability by meeting the challenge of participating in a contest.

The educational objectives formulated are, for the most part, either cognitive or psychomotor if one were to classify them according to taxonomy or domain. This was expected, given the vocational education or industrial orientation of the individuals involved in the study and the continued desire of the Delphi panel to have measurable objectives relating to the demonstration of competencies. The researcher did, however, find five of the nineteen objectives that would be classified as in the affective domain. They were: exhibit a positive attitude toward being successful in agricultural occupations; demonstrate the ideals of honesty (in its broad aspect), respect, consideration, service, etc. to others; demonstrate teamwork (working with others toward a common goal) and good relationships with others whether at work or otherwise; exhibit a positive attitude towards lifelong learning; and recognize that competition is critical and essential to the competitive free enterprise system.

Two other objectives, demonstrate competencies needed for employment in agricultural occupations related to the contest area and
demonstrate leadership potential and management ability, were felt by the researcher to include elements of all three domains.

The fact that all three domains were represented by the list of objectives was encouraging to the researcher because it has been the experience of the researcher to find very few vocationally oriented lists of objectives that reflected the affective domain. This study would indicate that the affective domain has a place of some importance to those involved with the national contests. The researcher believes that the affective domain cannot be ignored because of the effect it can have on the other two domains, and for the reason that the affective domain also reflects the needs of the students.

The desire of the panel members to make the objectives more measurable was evidenced by their comments to that effect and the wording changes made to reflect that desire. Words such as "develop, understand, and appreciate" were changed to "demonstrate" to reflect the idea that contests were for the demonstration of measurable competencies. Also, the difficulty associated with measuring understandings, appreciations, attitudes, etc. were aptly described when a panel member wrote, "Teach me the appreciation of a front-end loader on a tractor by having me shovel a 10-ton load of sand."

Another area of concern for panel members were three of the six concern areas developed by the researcher. As previously reported, they were all accepted, but not without comment. Most of the time this concern was expressed by panel members questioning whether the contests could or should address the objectives in the concern areas of vocations
and careers, sociological and cultural, and health and leisure. The greatest amount of concern was expressed by the Delphi panel about the latter two concern areas.

Interestingly enough, however, when given the opportunity to reject the concern areas, only two individuals responded. The researcher expected more individuals to take the opportunity to respond to the concern areas based on comments received from the first questionnaire. Either the directions were not read by the respondents closely enough, or the respondents felt that some elements of the concern areas in question were of importance. Judging by the results of this study, the researcher believes the latter to be more representative of the feelings of the panel.

The second objective of this study was to establish administrative criteria for adding, changing or discontinuing a National FFA Contest. The administrative criteria formulated and recommended by this study were as follows.

Criteria for adding new contests:

The new national contest must complement the content and instruction of pertinent agricultural education areas taught in vocational agriculture classes nationally.

The content of the proposed new contest must be judged appropriate to existing conditions and trends in the agricultural business or industry it represents by a 5-10 member review panel consisting of representatives from the industries and businesses represented by the contest.

Adequate resources must be available to conduct the contest, i.e., financial (industry sponsorship), facilities, equipment, staffing, etc., in a way that provides a quality educational experience for participants.
Proposed national contests must be approved by the Special Advisory Committee for National Contests and the National FFA Student Delegate Contest Committee before being considered by the National FFA Board of Directors.

Thirty or more states should be providing instruction in the topic area in which the contest is proposed.

Specific educational benefits (minimum of three) not otherwise provided through existing state and local programs shall be stated in support of the proposed contest.

Twenty-five or more states must petition for a new national contest to the National FFA Board of Directors.

Criteria for discontinuing contests:

Contest content is outdated or irrelevant as perceived by a panel of business/industry representatives, a polling of past contest participants, and evidence secured through studies of the contest.

Contest deleted only after input from industry and/or agribusiness people, vo-ag teachers, contest committee, and past contest participants has been received and approves its deletion.

Lack of resources and/or support to provide a quality educational experience for participants.

Contest is not in agreement with the national and/or individual contest objectives.

The cost of a contest financially and timewise outweighs the benefits derived by the number of students participating.

Less than 25 states are conducting a state contest and/or entering their teams in the national contest.

Less than 25 states are providing instruction in the area covered by the contest.

Criteria for changing contests:

Evaluations by vocational agricultural educators (local, state, and national), agribusiness and industry representatives, sponsors, past participants, and other interested parties every three years are made to update and/or redirect the contest.

The contest is not focused on skills and competencies required by workers in the industry which the contest represents.
Contest does not utilize application of knowledge gained or developed in the instructional program.

The contest content is not in agreement with the stated national or individual contest objectives.

Topic of contest is no longer a major part of the curricula in most schools and states.

Current contest does not use instructional materials of the instructional program it represents.

The administrative criteria selected reflected the concerns of the Delphi panel that the national contests have national significance in that the topic area represented by a contest is representative of and complimentary to the curriculum of vocational agriculture nationally, that the content of a contest reflect the competencies and knowledge required currently within the area represented by a contest, be evaluated by appropriate individuals to ensure educational value and quality, be in agreement with stated objectives (overall and individual), and have adequate resources to provide a quality educational experience.

In comparing the results of this study with those of Carter (7), it is apparent that the first three concerns were addressed in both studies, though it should be remembered that the study by Carter only identified criteria for the addition of national contests. The last two areas of concern identified by this study related to stating objectives and providing adequate resources were not apparent in the criteria recommended by Carter. The area of objective evaluation and scoring dealt with in the Carter study was not identified as a concern in this study.

The difference between this and the Carter study concerning the
contests being in agreement with stated objectives is best explained by the fact that the contest would have to be in operation in order to determine whether or not the objectives were being met. This view is supported by the fact that criteria dealing with contest objectives in this study were only formulated under the discontinuing and changing contests headings and not for adding a contest as was the intent of the study by Carter (7). Because this study determined criteria for changing and deleting contests in addition to criteria for adding contests, concern for the contest being in agreement with objectives emerged as important criteria to consider when evaluating contests.

Adequate resources as a concern that was identified in this study under adding and discontinuing contests, probably due to the financial problems in education that have arisen in recent years. The justification for educational expenditures and balancing costs with benefit received has become a major priority in education.

Objective evaluation and scoring was not identified as a concern in this study, probably because the contests have been moving toward objective evaluation and scoring. Subsequently, they were not viewed by the Delphi panel members as a problem at the time the present study was conducted.

The researcher made another observation in connection with the study by Carter that was both interesting and disconcerting. It was observed that only one member of the Delphi panel made mention of the criteria that Carter had recommended and had been approved by the National FFA Board of Directors. It is interesting that all those on
the panel had been involved with the national contests, yet only one mentioned the fact that an approved set of criteria for adding national contests already existed. It was disconcerting because of the apparent lack of awareness about the existence of the previously approved criteria. It is hoped that the recommendations made by this study will be made available to all agricultural educators and used by those involved with the National FFA Contest Program to direct the national contest program.

Generally, the Delphi panel expressed that a national contest should be national in its scope and not dictated by regional need. Some indicated that the national contests should be the leader and not be subject to the limits that similar state contests could impose. In other words, the state contests should conform to the national contests, not vice versa.

Keeping the contests updated to reflect current industry standards was constantly mentioned by panel members. The desire to keep the contests relevant to the changing needs of agriculture is probably due in part to the accountability issue raised by those both in and outside of the education profession. It is practical to assume that vocational education programs (such as the contests) should reflect these changes in their instructional programs.

Evaluation of the contests on a regular basis was accepted as necessary by the Delphi panel if the educational value of the contests was to be maintained. Evaluation should be conducted by educators, contest participants, and industry representatives.
The time, effort and thought contributed to this study by the members of the Delphi panel indicated to the researcher that those who participated in the study generally felt that the national contests were instructional tools of educational value. It was clear from the comments, objectives, and criteria that they offered that these individuals were trying to provide input to improve the national contests. At the same time, however, it was equally clear that the contests need to remain in proper perspective and not become an end toward which vocational agriculture instruction would be directed.

The Delphi technique was an important part of this study as it was the research method used to formulate the educational objectives and administrative criteria. The results of this study indicate that the technique was successful in leading the research to satisfying the study objectives.

The researcher found that the Delphi technique was very useful in the formulation of educational objectives. It was also found to be equally useful in formulating the administrative criteria for this study.

The modification of the third questionnaire from the ranking system usually employed to the importance rating scale proved satisfactory as a means of obtaining the panel members' rating of importance on the objectives and criteria. The scale provided the flexibility for respondents to rate objectives and criteria they perceived to be of equal importance without having to rank one more important than another. The scale also facilitated the combining of the six concern areas
studied into a single list of objectives as desired, since the ranking of 27 objectives by an individual seemed quite impractical. Respondents made mention of this fact when responding to the second questionnaire and when there were ten or more objectives listed.

The researcher would caution those who would use the Delphi technique to allow for adequate time to complete the study. Even though there is little in the way of statistical analysis when using this research procedure, there is a great deal of word, word meaning, and phrase analysis to be done to determine if similarities exist between items being studied.

The administrative details were also time consuming which, as indicated earlier (1 and 13), can limit the size of the respondent group. Administrative details such as preparing and mailing three questionnaires and following up on panel members who do not return their questionnaires on time compound scheduling problems with each questionnaire.

Implications and Recommendations

As a result of this study, several important implications and recommendations were made by the researcher. These implications and recommendations are directed toward those involved with the National FFA Contest Program and other interested individuals.

The National FFA Contests were generally accepted by the Delphi panel as having educational value as an instructional tool. The time and effort spent by the group responding to this study indicate and imply that those involved with the contests should continue to improve
the contests to ensure that their educational value is maintained.

It was also implied by comments and suggestions made by the panel that the contests should remain a part of the total program of the FFA and vocational agriculture. The contests, however, should never become the focus of or the end toward which instruction is directed. As such, those who are involved with the contests should make every effort to ensure that contests result from instruction and not instruction from contests.

The main purpose of this study was to formulate educational objectives and administrative criteria for the National FFA Contest Program. It is recommended that the National FFA Board of Directors and National FFA Contest Program Staff carefully review the objectives and criteria formulated. The objectives and criteria represent the consensus of individuals involved with the national contests and should be used in making decisions for future activities associated with the National FFA Contest Program.

The importance of evaluating present contests every three years was suggested by this study. These objectives and criteria should be used to aid in evaluating the contests. Such efforts will help ensure that the contests maintain and improve their educational value.

It is recommended that these objectives be used when developing the objectives for individual contests to aid in the planning and operation of present and future national contests.

It is recommended that the administrative criteria be used when decisions are made concerning adding, changing, or discontinuing a
The educational objectives and administrative criteria should be approved by the National FFA Board of Directors and published in the National FFA Contests Bulletin No. 4 so that those involved with the contests would become familiar with them. This would also serve to communicate to other interested parties the educational objectives of the national contests.

The inclusion of more than just past contest participants and their FFA advisors is recommended when considering conducting research on any national contest. This would be especially true if the research involved an evaluation of the contest.

The Delphi technique was proved to be an appropriate technique for this study and would be recommended for similar types of studies that seek to develop objectives or criteria.

The importance scale modification used on the third questionnaire was found to be appropriate for this study and should be considered for similar Delphi studies seeking to determine the importance of items.

The findings of this study suggest that further research be conducted in several areas.

1) Research will be needed to determine how effective these objectives and criteria are in directing local, state, and national contests and in introducing, discontinuing, and changing national contests.

2) Further research needs to be conducted on individual national


contests to determine what changes, if any, need to be made to ensure and enhance the educational value of the contests.

3) Research should be conducted to identify whether or not the educational objectives formulated in this study are being met by the national contests.

4) Studies should be conducted to ensure that the competencies required by a national contest are relevant to the agricultural industry that the contest represents and that the competencies stressed by a national contest reflect the appropriate competencies taught in the vocational agriculture program on a national basis. Such a procedure would verify whether or not the national contests are an outgrowth of the vocational agriculture instructional program.

5) Research needs to be conducted to determine if similar state contests have educational objectives. If not, they should be developed with the educational objectives identified in this study considered as a model.
SUMMARY

This study was undertaken to: 1) establish educational objectives for the National FFA Contest Program encompassing the areas of vocations and careers, basic skills, personal development, sociological and cultural development, health and leisure, and subject matter; 2) establish administrative criteria for adding, changing or discontinuing a national contest, and 3) formulate the educational objectives and administrative criteria through the use of a modified Delphi technique.

A review of literature and research was used to establish the need for educational objectives and administrative criteria and to provide insight into the use of the Delphi technique for formulating objectives and criteria. These activities identified a need for the objectives and criteria, and helped in the design of the study.

The Delphi technique is a research method that seeks information from interested individuals involved with the question being studied. Through a series of three questionnaires, input was received from a Delphi panel of 33 members that generated possible objectives and criteria, and then later identified those objectives and criteria felt to be most important.

The 33 member panel began by responding to the first questionnaire and formulating 112 objectives in six separate concern areas and 56 criteria in three separate concern areas. These objectives and criteria were combined and refined, according to comments received from the panel, by the researcher into a second questionnaire.
The second questionnaire had the panel rank the objectives and criteria in order of importance in each of the concern areas. The objectives and criteria consistently ranked more important by the panel were then further refined and merged, according to comments from respondents, by the researcher into a third questionnaire.

The third questionnaire presented one list of 27 objectives and three lists of criteria, and requested that respondents rate the importance of each objective or criterion. The rating of importance was based on a five point scale (1 = no importance and 5 = utmost importance). The mean importance rating of each educational objective and administrative criterion was calculated and those objectives rating 3.5 or above (those having much importance and utmost importance) were recommended to the National FFA Board of Directors.

The educational objectives formulated were, for the most part, either within the cognitive and/or psychomotor domain. This was expected given the vocational education and industrial orientation of those involved in the study. Five of the nineteen objectives, however, were within the affective domain, while two others were determined to have elements of all three domains.

The panel members generally desired to have the objectives written in measurable terms. Words that indicated behaviors hard to measure were changed to words indicating more measurable behaviors.

The administrative criteria selected reflected the concerns of the Delphi panel that the national contests have national significance in that 1) the topic area represented by a contest is representative or
complementary to the curriculum of vocational agriculture nationally, 2) the content of a contest reflect the competencies and knowledge required in the industry represented by a contest, 3) the contest be evaluated by appropriate individuals to ensure educational value and quality, 4) the contest be in agreement with stated objectives (overall and individual), and 5) it have adequate resources to provide a quality educational experience.

The Delphi technique was observed to be an effective tool in identification and formulation of the educational objectives. The technique also proved to be equally effective in the formulation of the administrative criteria. Modification of the third questionnaire to provide a five point importance rating scale was considered both effective and efficient in collecting the desired data from the Delphi panel. It should be noted, however, that the time required by this technique could prove restrictive to individuals under time constraints.

The educational value of the contests as an instructional tool was implied by the Delphi panel. The panel, however, did caution that the contests should not be the focus or become the end toward which instruction in vocational agriculture is directed.

Further research was suggested to determine the effectiveness of these objectives in influencing local, state, and national contests and in adding, discontinuing or changing national contests. Research was encouraged to study the contests as a whole and individually to identify changes needed, whether formulated objectives are being met, and if competencies required by the contests were representative of
agricultural industry and vocational agriculture instructional programs nationally. Additionally, states were encouraged to conduct similar studies to identify objectives for state FFA contests.
BIBLIOGRAPHY


Dear Mr. Buker:

The National FFA contests are considered teaching methods of great importance. It is imperative that they are based on sound educational principles. To date, there are no published overall educational objectives for the National FFA contests. It is felt that these overall objectives need to be developed.

We need your help! We have been asked by Mr. Ted Amick, program specialist in charge of contests, and the National FFA Board of Directors to establish the educational objectives and administrative criteria for the National FFA contests. We, in turn, are asking you to assist us in this important task. These objectives and criteria are necessary for the planning and directing of future contests.

You and other educational and/or agricultural experts are being asked to participate in a group process using the "Delphi Technique". This technique will involve a series of three questionnaires that will consolidate the thinking of the group into a set of educational objectives and criteria statements. The format of the first questionnaire is open-ended so you will get a chance to "brainstorm" with the other professionals involved. The following two questionnaires will ask you to respond to ideas and comments of the other participants, which may modify your previous thoughts.

We challenge you to be creative! We are working to establish the educational and administrative criteria for many years to come. As such, we want to be thinking of the educational and industrial needs of the present and future. Let us be innovative and help the FFA contests provide education that will aid individuals regardless of what the future brings.

The amount of time the questionnaire takes to complete is largely up to you. Please mail it back to us by January 11 (the sooner the better). If there are any questions or concerns, please call us at the above phone number.

Thank you very much!

Alan A. Kahler
Professor

Mack W. Smith
Research Assistant
DELPHI QUESTIONNAIRE #1

Part I

Instructions: On the following six pages there are six questions that are designed to help you generate overall objectives for all National FFA contests.

Please react to the four objectives already provided on each page by circling the letter "A" if you agree that the objective should be included or the letter "D" if you disagree and feel it should not be included. Please comment and explain the reason for your feelings.

After reacting to the provided objectives, please add at least one objective of your own that you feel is important to each of the six objective lists! You may add as many as you feel would be important, but at least one is requested. Use the space provided on each page to add your objective(s), use the back if necessary.

NOTE: Your name will not be associated with individual responses. If you do not wish to participate in this process, please return a blank questionnaire so that we will not lose track of who does wish to take part in helping determine the educational objectives and administrative criteria for the National FFA contests.
I. What should be the educational objectives for all National FFA contests concerning "vocations and careers"? Vocations and careers refer to all aspects of future employment of contest participants.

**Comments**

A D 1. Create an awareness of new technologies in industry.

A D 2. Promote acceptance of industry innovations.

A D 3. Develop an appreciation of good workmanship.

A D 4. Create an awareness of the requirements, responsibilities, opportunities, salaries, etc. of the major careers in industry.

Additional objective(s) you feel should be included:
II. What should be the educational objectives for all National FFA contests pertaining to "basic skills"? Basic skills include cognitive (math, reading, etc.) and psycho-motor (guided responses, coordination, etc.).

Comments

A D 1. Develop mathematical skills.

A D 2. Develop communication skills.

A D 3. Develop decision-making skills.

A D 4. Application of basic skills to contest.

Additional objective(s) you feel should be included:
III. What should be the educational objectives for all National FFA contests regarding "personal development"? Personal development includes training in matters such as self-esteem, sense of accomplishment, etc.

A D 1. Develop a positive attitude towards lifelong learning.

A D 2. Develop a sense of accomplishment in completing tasks.

A D 3. Develop an awareness of self and the relationship between self and work.

A D 4. Develop an awareness of personal interests and their role in decision-making.

Additional objective(s) you feel should be included:
IV. What should be the educational objectives for all National FFA contests regarding "sociological and cultural"? Sociological and cultural objectives involve getting along with and understanding differences in others.

**Comments**

AD 1. Develop an understanding of group interactions and relationships.

AD 2. Identify social influences and their role in decision-making.

AD 3. Identify the social and cultural contribution made by agricultural knowledge.

AD 4. Develop an awareness of the economic impact and importance of agriculture.

Additional objective(s) you feel should be included:
V. What should be the educational objectives for all National FFA contests concerning "health and leisure"? Health and leisure criteria includes physical fitness, well-being, and use of leisure time.

A D 1. Develop ability to use leisure time productively.

A D 2. Identify safety procedures and health hazards in occupations within a contest area.

A D 3. Identify agriculturally related activities that could be pursued during leisure time.

A D 4. Identify relationship between physical fitness and performance.

Additional objective(s) you feel should be included:
VI. What should be the educational objectives for all National FFA contests pertaining to "subject knowledge"? Subject knowledge refers to the technical agriculture knowledge needed in a contest area.

A D 1. Identify technical agriculture knowledge needed in contest area.

A D 2. Demonstrate ability to apply the needed technical knowledge.

A D 3. Develop awareness of cross-discipline technical agriculture knowledge needed.

A D 4. Demonstrate techniques and/or skills that are needed.

Additional objective(s) you feel should be included:
Instructions: On the following three pages are three questions relating to the development of administrative criteria for the addition, change, or discontinuance of National FFA contests.

Please react to the criteria statements that are given by circling the letter "A" if you agree the statement should be included as part of the criteria or the letter "D" if you feel it should not be included. Your comments on the statements are encouraged.

After reacting to the provided objectives, please add at least one criteria statement of your own that you feel is important to each of the three criteria statement lists! You may add as many as you feel would be important, but at least one is requested. Use the space provided on each page to add your criteria statement(s), use the back if necessary.
I. What criteria should be met when adding a new contest?

AD 1. Forty or more states should be providing instruction in the area in which the contest is proposed.

AD 2. Proposed national contests must be approved by the National FFA Contest Study Committee and the National FFA Student Delegate Contest Committee before being considered by the National FFA Board of Directors.

AD 3. Specific educational benefits (minimum of three) not otherwise provided through existing state and local programs shall be stated in support of the proposed contest.

AD 4. The content of the proposed new contest must be judged appropriate to existing conditions and trends in the industry it represents by a 10 member industry review panel.

Additional criteria you feel should be included:
II. What criteria should be met when discontinuing a national contest?

A D 1. Less than 30 states are providing instruction in the area covered by the contest.

A D 2. Contest content is outdated or irrelevant as perceived by a panel of industry representatives and a polling of past contest participants.

A D 3. Less than 30 states are conducting a state contest and/or entering their teams in the national contest.

A D 4. Contest is not in agreement with the contest objectives.

Additional criteria you feel should be included:
III. What criteria should be used to change national contests?

Comments

AD 1. The contest is not focused on skills and competencies required by workers in the industry which the contest represents.

AD 2. The contest is not in tune with the majority of state contests.

AD 3. The contest content is not in agreement with the contest objectives.

AD 4. Evaluations of participating vocational agriculture teachers and students suggest changes in the contest.

Additional criteria you feel should be included:
March 11, 1985

Terry Buker
Missouri Farm Bureau
Box 658
Jefferson, MO 65102

Dear Mr. Buker:

We would like to thank you for your response to our first questionnaire and to agreeing to participate in this study and assist us in establishing educational objectives and administrative criteria for the National FFA Contests. We much appreciate the time and help you have given us, and we look forward to your continued support.

Enclosed you will find summaries of the first delphi questionnaire and the second delphi questionnaire. The summaries are provided for you to read and use when responding to the current questionnaire.

Please fill out the questionnaire and return it to us by MARCH 20 (before if possible). It is very important for us to receive them back promptly so that turn around time on the third questionnaire (the last one) will be as short as possible.

Again, thank you for your help in this important task. If there are any questions or concerns about the current questionnaire or study, please call us at the above phone number and we will be happy to answer your questions.

Sincerely,

Alan A. Kahler
Professor

Mack W. Smith
Research Assistant
The purpose of this paper is to give you some idea as to the response we received from the first questionnaire, so that you will be able to determine what changes were made as a result of your comments and suggestions.

Concerning Question I, the majority of those responding agreed with the context of all the given objectives (those objectives which the researchers had generated). Although, minor wording changes were suggested by the group which have been incorporated in the objectives as they are presented in the second questionnaire.

The wording changes made in the four given objectives were as follows: Objective 1 changed "Create" to "Demonstrate and further develop"; Objective 2 changed "Promote" to "Demonstrate and develop an appreciation"; Objective 3 changed "good workmanship" to "quality work"; and Objective 4 changed "Create" to "Demonstrate" and dropped "salaries" out of the objective.

The majority of the group felt that at the contests the participants should be demonstrating and perhaps further developing knowledge in the areas indicated by the objectives. Also, it was felt that the term "good workmanship" might be to limiting and that a broader term should be used. Salaries were felt to be less important than concern for requirements and opportunities.

The additional objectives that you will find under Question I and the other Questions II - VI are those that were given by the group. Generally, these objectives are composite objectives, since two or more individuals came up with either the same or similar objectives.

The majority of respondents to Question II also agreed with the given objectives in context, but did suggest that the word "Develop" in objectives 1 - 3 be changed to "Demonstrate". Objective 4 wording change was from "Application of" to "Demonstrate and apply the other". Also, the phrase "associated with the contest area" was added to all the given objectives to indicate that different contests have different skills associated with them.

The majority of respondents to Question III agreed with the given objectives and they are presented again without change. But, it should be noted that several individuals expressed concern whether the contests could meet the objectives in this area.

The majority of respondents to Question IV agreed with the given objectives and they are presented again without change. It should be noted, however, that several individuals doubted whether this area should be included among the objectives for the contests.

Question V objectives were generally accepted by the group, but by a narrower margin than the other areas. Several individuals felt that the area covered by this Question would be better dealt with elsewhere and not in the contests.

Question VI received the strongest support from the respondent group, as a result, the given objectives are presented again with only very minor word changes. The word changes consisted of adding the phrase "in the contest area" to objectives 2, 3 and 4.
NATIONAL FFA CONTEST CRITERIA
SUMMARY OF FIRST QUESTIONNAIRE

This paper will summarize the results of Part II of the first questionnaire that dealt with the criteria for adding, changing, and dropping national contests. It is hoped that it will help you as you make decisions regarding the second questionnaire.

The given criteria for adding a new contest was generally accepted by the majority of the group, except for criteria 1 which was rejected because of the high number of states required. The number has been changed from "Forty" to "Thirty" as a result of the comments received.

Another change which was suggested and made was in criteria 4 for adding a new contest. The change made was to give a range for the industry review panel, instead of "10" it now reads "5 - 10".

The additional criteria that you will now see under adding, changing, and dropping a contest was the result of input from the respondent group. In cases where similar criteria were given a composite was made and presented in the current questionnaire.

Criteria 2 and 4 for discontinuing a national contest were generally well accepted by the group, but criteria 1 and 3 were rejected due to the number of states that each required. As a result of the comments received the words "the national and/or the individual contest objectives" were added to clarify meaning in criteria 4 and the "30" was changed to "25" in criteria 1 and 3.

The criteria 1, 3, and 4 for changing a contest were all accepted and were not changed. Criteria 2, however, was changed due to comments received and the fact that no clear majority was established either to accept or reject it. The words "in tune with the majority of state contests" were dropped and the words "representative of the majority of similar state contests" were added. The debate on the criteria centered on whether the National Contests should follow the lead of the state contests or visa-versa.
INSTRUCTIONS: On the following six pages there are six questions that are designed to generate overall objectives for all National FFA Contests.

Please react to the objectives that have been generated under each of the six questions by ranking the objectives from one to the highest numbered objective given under each question. Use 1 to indicate the most important objective.

If you feel that an objective needs to be changed or added please feel free to do so and comment on the change you have made. But, if you add an objective to a question it must be ranked with the other objectives that are already given.

When reading the objectives keep in mind that each of the objectives, except for the first four, were generated from the Delphi group.

Some participants felt that some of the areas covered by the six questions either could not or should not be addressed by the National FFA Contests. If you feel this to be the case, indicate it by writing a "No" in the right margin opposite the question and do not rank the objectives under that question.

If you should do as indicated above, but wish to retain one or more of the objectives listed under that question simply add the objective(s) selected to another question or questions you feel appropriate and rank them as previously discussed when making a change or addition.

NOTE: Your name will not be associated with individual responses. PLEASE return as soon as possible.
I. What should be the educational objectives for all National FFA Contests concerning "vocations and careers"? Vocations and careers refer to all aspects of future employment of contest participants.

  1. Demonstrate an understanding of new technologies in industry.
  2. Demonstrate an understanding of industry innovations.
  3. Demonstrate the ability to do or recognize quality work.
  4. Demonstrate an understanding of the requirements, responsibilities, opportunities, etc., of the major careers in industry.
  5. Demonstrate competencies, skills, abilities, and knowledge needed for employment in agricultural occupations related to the contest area. Affective and cognitive as well as psychomotor.
  6. Create an awareness of the importance of quality productivity.
  7. Develop positive attitude in students toward being successful in agricultural occupations.
  8. Create an awareness of current industry standards, procedures, and technology.
  9. Create awareness of the occupational opportunities and fields of interest associated with the contest area.
 10. Develop and enhance the students' perception of the free enterprise and democratic systems.
 11. Develop and encourage intreprenueral skills related to the contest area.
II. What should be the educational objectives for all National FFA Contests pertaining to "basic skills"? Basic skills include cognitive (math, reading, etc.) and psycho-motor (guided responses, coordination, etc.).

1. Demonstrate mathematical skills associated with the contest area.

2. Demonstrate communication skills associated with the contest area.

3. Demonstrate decision-making skills associated with the contest area.

4. Demonstrate and apply the other basic skills associated with a contest area.

5. Demonstrate and develop management and leadership skills necessary for leaders in agriculture.

6. Demonstrate and develop uses of common organizational and manipulative skills and abilities required in contest area that are related to those necessary in agribusiness and industry.

7. Demonstrate and promote the use of scientific, problem-solving, and higher thinking skills and abilities through practical application within the contest area.

8. Demonstrate skills to differentiate between desirable and undesirable work, products, and/or outcomes in the contest area.

9. Demonstrate an awareness of and appreciation for skills needed in a contest and how they relate to the world of work.

10. Demonstrate ability to communicate in the terminology appropriate to the agribusiness or industry related to the contest area.

11. Develop understanding of importance of "basic skills" to success in agricultural occupations.

12. Reinforce and demonstrate skills and competencies learned in the vocational agriculture program.

13. Develop computer and other technical skills related to the area of the contest.
III. What should be the educational objectives for all National FFA Contests regarding "personal development"? Personal development includes training in matters such as self-esteem, sense of accomplishment, etc.

___ 1. Develop a positive attitude towards lifelong learning.
___ 2. Develop a sense of accomplishment in completing tasks.
___ 3. Develop an awareness of self and the relationship between self and work.
___ 4. Develop an awareness of personal interests and their role in decision-making.
___ 5. Develop and enhance self-confidence and self-esteem by providing opportunities in the contest for students to defend their judgement through oral or written responses, completion of tasks, and recognition for work well done.
___ 6. Develop and enhance leadership potential and management ability.
___ 7. Promote the importance of good grooming and dress for a positive personal appearance.
___ 8. Recognize the relationship between personal development and career development.
___ 9. Develop the individual's awareness of their surroundings, ie. foods, products, materials, equipment, etc.
___ 10. Promote and develop an appreciation for competition, fair play, and how to both win and lose gracefully.
___ 11. Foster the development of a personal value system congruent with democratic ideals.
___ 12. Develop and promote the importance of learning more about a specific area.
___ 13. Develop awareness of personal interests and their role in completing tasks.
___ 14. Provide an opportunity for students to interact with one another, business and industry people, etc.
___ 15. Provide motivation for student learning.
___ 16. Provide a challenge for students to help them in goal setting.
___ 17. Provide an opportunity for students to increase their self-esteem and self-confidence through active involvement and achievement.
IV. What should be the educational objectives for all National FFA contests regarding "sociological and cultural"? Sociological and cultural objectives involve getting along with and understanding differences in others.

1. Develop an understanding of group interactions and relationships.
2. Identify social influences and their role in decision-making.
3. Identify the social and cultural contribution made by agricultural knowledge.
4. Develop an awareness of the economic impact and importance of agriculture.
5. Develop and enhance the importance of team work (working with others toward a common goal) and good relationships with others whether at work or otherwise.
6. Promote the ideals of honesty (in its broad aspect), respect, consideration, service, etc., to others.
7. Recognize the contributions made by agriculture to American culture, i.e. lifestyles, business, industry, government, etc.
8. Recognize that competition is critical and essential to the competitive free enterprise system.
9. Recognize the contest area's importance in food, products, and materials and their effect on society.
10. Develop an awareness of the social and cultural contributions made to agriculture from other areas.
11. Recognize the impact of societal trends and issues on agriculture as related to the contest area.
12. Develop an awareness of adults interest in and support of youth and their development.
13. Recognize the benefits and importance of participation in worthwhile activities.
V. What should be the educational objectives for all National FFA Contests concerning "health and leisure"? Health and leisure criteria includes physical fitness, well-being, and use of leisure time.

1. Develop ability to use leisure time productively.

2. Identify safety procedures and health hazards in occupations within a contest area.

3. Identify agriculturally related activities that could be pursued during leisure time.

4. Identify relationships between physical fitness and performance.

5. Recognize the relationship of well-being both physically and mentally to competitive abilities and success in work related endeavors.

6. Recognize the need for safety precautions and performing tasks safely.

7. Develop appreciation for and conservation of natural resources during leisure activities.

8. Develop an appreciation for agriculturally related activities that could be pursued during leisure time.

9. Develop an appreciation for working in a healthy environment as it relates to agricultural careers.

10. Develop skills and abilities, ie. cognitive, affective and/or psychomotor, which transfer to recreational and leisure activities.

11. Promote the development of leisure time activities in the local program of activities.

12. Develop an appreciation for the value and rewards of hardwork.
VI. What should be the educational objectives for all National FFA Contests pertaining to "subject knowledge"? Subject knowledge refers to the technical agriculture knowledge needed in a contest area.

1. Identify technical agriculture knowledge needed in contest area.
2. Demonstrate ability to apply the needed technical knowledge in the contest area.
3. Develop awareness of cross-discipline technical agriculture knowledge needed in the contest area.
4. Demonstrate techniques and/or skills that are needed in the contest area.
5. Demonstrate ability to locate and properly use resource information and/or technical assistance required to complete tasks in pertinent areas of agriculture.
6. Recognize the effect of changing technical knowledge on our society and how it changes us over time.
7. Recognize the importance and effects of being an informed consumer and how consumer information has effected agriculture.
8. Demonstrate and develop students' understanding and skills in completing tasks common to occupations in agricultural areas focused on by the contest.
9. Demonstrate ability to synthesize and use contest area technical knowledge (competences) developed to solve problems in practical work simulations.
10. Recognize the importance of using the latest technical knowledge in the contest area.
11. Recognize the difference in real and artificial agricultural products related to the contest area.
12. Recognize the interrelationships between agricultural and other industries' technical knowledge.
13. Recognize the international scope of agricultural knowledge.
14. Demonstrate technical knowledge common throughout the country and not unique to a specific region as it applies to a specific contest area.
15. Develop appreciation of the importance of technical knowledge.
INSTRUCTIONS: On the following three pages there are three questions that are designed to generate administrative criteria for all National FFA Contests.

Please react to the criteria that have been generated under each of the three questions by ranking the criteria from one to the highest numbered objective given under each question. Use 1 to indicate the most important criteria.

If you feel that a criteria needs to be changed or added please feel free to do so and comment on the change you have made. But, if you add a criteria to a question it must be ranked with the other criteria that are already given.

When reading the criteria keep in mind that each of the criteria, except for the first four, were generated from the Delphi group.
I. What criteria should be met when adding a new contest?

1. Thirty or more states should be providing instruction in the area in which the contest is proposed.

2. Proposed national contests must be approved by the National FFA Contest Study Committee and the National FFA Student Delegate Contest Committee before being considered by the National FFA Board of Directors.

3. Specific educational benefits (minimum of three) not otherwise provided through existing state and local programs shall be stated in support of the proposed contest.

4. The content of the proposed new contest must be judged appropriate to existing conditions and trends in the agricultural business or industry it represents by a 5-10 member industry/business review panel.

5. Adequate resources must be available to conduct the contest i.e. financial (industry sponsorship), facilities, equipment, staffing, etc., in a way that provides a quality educational experience for participants.

6. Twenty-five or more states must petition for a new national contest to the National FFA Board of Directors.

7. The new national contest must compliment the content and instruction of pertinent agricultural education areas taught in vocational agriculture classes nationally.

8. A panel of FFA Teachers who teach in the proposed contest area must evaluate and recommend it to the Board.

9. Strive to maintain an equitable balance between production and agribusiness contests.

10. A national survey must be taken of all Vo-Ag departments and 85% of the departments within each state must approve it before being forwarded to the National FFA Board of Directors.

11. The contest content should reflect the instructional program of thirty or more states before being approved.

12. Specific educational benefits that are not provided in other national contests must be developed and presented before approval.

13. New contests should be added based on the number of students served by the instructional area rather than by state, with consideration given to increased numbers of students being taken out of school and the additional time away from school it would require.

14. Teachers or whoever should provide justification for a new contest based on its educational value for students beyond that accomplished by local and state levels.
II. What criteria should be met when discontinuing a national contest?

1. Less than 25 states are providing instruction in the area covered by the contest.

2. Contest content is outdated or irrelevant as perceived by a panel of business/industry representatives and a polling of past contest participants.

3. Less than 25 states are conducting a state contest and/or entering their teams in the national contest.

4. Contest is not in agreement with the national and/or individual contest objectives.

5. Lack of resources and/or support to provide a quality educational experience for participants.

6. The contest no longer is relevant to current instructional goals and objectives, and/or agribusiness and industry occupational needs as determined by a research study.

7. The cost of a contest financially and time wise outweighs the benefits derived by the number of students participating.

8. Less than "from 20 to 45" state or associations are participating in the contest.

9. Contest deleted only after input from industry and/or agribusiness people, vo-ag teachers, contest committee, and past contest participants has been received and approves its deletion.

10. Less than 85% of the student enrollment in less than 30 states is in the instructional area covered by the contest.
III. What criteria should be used to change national contests?

1. The contest is not focused on skills and competencies required by workers in the industry which the contest represents.

2. The contest is not representative of the majority of similar state contests.

3. The contest content is not in agreement with the stated national or individual contest objectives.

4. Evaluations of participating vocational agriculture teachers and students suggest changes in the contest.

5. The contest does not represent current skills or competencies needed in the current market place.

6. Contests reviewed to determine if too large, if so, then perhaps they should be split into other contests.

7. Evaluations by vocational educators (local, state, and national), agribusiness and industry representatives, sponsors, past participants, and other interested parties every one to three years are needed to update and/or redirect the contest.

8. National Contest Study Committee should review contests yearly to determine if changes are needed.

9. Contest does not utilize application of knowledge gained or developed in the instructional program.

10. Contest change due to change in available resources.

11. Current contest does not use instructional materials of the instructional program.

12. Topic of contest is no longer a major part of the curriculums in most schools and states.
April 26, 1985

Terry Buker
Missouri Farm Bureau
Box 658
Jefferson, MO 65102

Dear Mr. Buker:

We would like to express our appreciation for your response to our second questionnaire and your participation in this study to establish educational objectives and administrative criteria for the National FFA Contests. We are very much aware of and appreciate the time and help you have given us, and we look forward to receiving your input on this final questionnaire.

Enclosed you will find a summary of the second delphi questionnaire and the third and final delphi questionnaire. The summary is provided to let you know how the current questionnaire was developed.

Please fill out the questionnaire and return it to us by MAY 8 (before if possible). It is very important for us to receive them back promptly so that a final report can be generated for the National FFA Board of Directors.

Again, we express our thanks for your sustained support in this extended study and important task. If there are any questions or concerns about the current questionnaire, please call us at the above phone number and we will be happy to answer your questions.

Sincerely,

Alan A. Kahler
Professor

Mack W. Smith
Research Assistant
Contest Objectives

In the current questionnaire you will notice that we have listed the objectives that were ranked by the group without placing them under a question area as previously done. This previous grouping was used to provide for thought and discussion in areas that might otherwise have been missed, and provide a broad base from which objectives could be developed. Since the above purposes were accomplished, the grouping is no longer needed.

The contest objectives that appear in the current list are those that were consistently ranked highest by the group as determined by an average rank being calculated for each objective with those that ranked in the upper half from each of the six question areas being placed in the current questionnaire.

Also, the list was further refined by merging similar objectives and using more appropriate language for broad educational objectives. The language was made consistent as to student perspective and the objectives are now written with student performance in mind.

Contest Administrative Criteria

The criteria were handled in much the same way as the objectives, except that the upper three-fourths of each of the three question areas were retained and the grouping was continued.

The reason the parameters were widened on the criteria was because there were less criteria to begin with as compared to the total number of objectives that were generated. The grouping was continued to maintain the delineation between the different functions of adding, discontinuing, and changing a contest.
Instructions:

Please select a number on the scale below which most accurately represents your feelings about the importance of each objective or criteria. Make your selection based on the National FFA Contest program. If you think that the objective or criteria is of the utmost importance, write a 5 in the space in front of the item. If you think that the objective or criteria is of no importance, write a 1 in the space. Use the numbers in the scale to indicate your true feelings about the importance of each objective and criteria. Please respond to all the objectives and criteria.

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Example: _4 Develop ability to use leisure time productively._

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**Part I**

**Educational Objectives**

1. Describe the requirements, responsibilities, opportunities, etc., of the major careers in industries represented by the contest.
2. Demonstrate competencies needed for employment in agricultural occupations related to the contest area (affective and cognitive as well as psychomotor).
3. Exhibit positive attitude toward being successful in agricultural occupations.
4. Describe current industry standards, procedures, and technology.
5. Demonstrate the use of scientific, problem-solving, and decision-making skills and abilities through practical application within the contest area.
6. Use correct "basic skills" in completing agricultural tasks in contests.
7. Demonstrate judgement through oral or written responses, completion of tasks, and recognition for work well done.
8. Recognize the economic impact and importance of agriculture to American culture, i.e. lifestyles, business, industry, government, etc.
9. Demonstrate team work (working with others toward a common goal) and good relationships with others whether at work or otherwise.
10. Demonstrate the ideals of honesty (in its broad aspect), respect, consideration, service, etc., to others.

11. Demonstrate safety procedures and recognize health hazards in occupations within a contest area.

12. Recognize the relationship of well-being, both physically and mentally, to competitive abilities and success in work related endeavors.

13. Demonstrate cognitive, affective and/or psychomotor skills and abilities, which transfer to recreational and leisure activities.

14. Demonstrate ability to apply the needed agricultural technical knowledge in the contest area.

15. Demonstrate ability to locate and properly use resource information and/or technical assistance required to complete tasks in pertinent areas of agriculture.

16. Demonstrate knowledge and skills in completing tasks common to occupations in agricultural areas focused on by the contest.

17. Demonstrate the ability to recognize and perform quality work.

18. Demonstrate common organizational and manipulative skills and abilities required in contest area that are related to those necessary in agribusiness and industry.

19. Demonstrate competencies learned in the vocational agriculture program.

20. Exhibit a positive attitude towards lifelong learning.

21. Understand personal interests and their role in decision-making.

22. Demonstrate leadership potential and management ability.

23. Exhibit motivation toward learning of competencies in contest areas.

24. Demonstrate goal setting ability by meeting the challenge of participating in a contest.

25. Demonstrate group interaction and relationship skills.

26. Recognize that competition is critical and essential to the competitive free enterprise system.

27. Develop ability to use leisure time productively.
Part II
Administrative Criteria

Adding Contests.

1. Proposed national contests must be approved by the Special Advisory Committee for National Contests and the National FFA Student Delegate Contest Committee before being considered by the National FFA Board of Directors.

2. The content of the proposed new contest must be judged appropriate to existing conditions and trends in the agricultural business or industry it represents by a 5-10 member review panel consisting of representatives from the industries and businesses represented by the contest.

3. The new national contest must compliment the content and instruction of pertinent agricultural education areas taught in vocational agriculture classes nationally.

4. Thirty or more states should be providing instruction in the topic area in which the contest is proposed.

5. Specific educational benefits (minimum of three) not otherwise provided through existing state and local programs shall be stated in support of the proposed contest.

6. Adequate resources must be available to conduct the contest ie. financial (industry sponsorship), facilities, equipment, staffing, etc., in a way that provides a quality educational experience for participants.

7. Twenty-five or more states must petition for a new national contest to the National FFA Board of Directors.

8. A panel of FFA Teachers who teach in the proposed contest area must evaluate and recommend it to the Board.

Discontinuing Contests.

1. Less than 25 states are providing instruction in the area covered by the contest.

2. Contest content is outdated or irrelevant as perceived by a panel of business/industry representatives, a polling of past contest participants, and evidence secured through studies of the contest.

3. Contest is not in agreement with the national and/or individual contest objectives.

4. Contest deleted only after input from industry and/or agribusiness people, vo-ag teachers, contest committee, and past contest participants has been received and approves its deletion.

5. Less than 25 states are conducting a state contest and/or entering their teams in the national contest.

(Over)
6. Lack of resources and/or support to provide a quality educational experience for participants.

7. The cost of a contest financially and time wise outweighs the benefits derived by the number of students participating.

Changing Contests.

1. The contest is not focused on skills and competencies required by workers in the industry which the contest represents.

2. Evaluations by vocational agricultural educators (local, state, and national), agribusiness and industry representatives, sponsors, past participants, and other interested parties every three years are made to update and/or redirect the contest.

3. Contest does not utilize application of knowledge gained or developed in the instructional program.

4. The contest content is not in agreement with the stated national or individual contest objectives.

5. Topic of contest is no longer a major part of the curriculums in most schools and states.

6. The contest is not representative of the majority of similar state contests.

7. Current contest does not use instructional materials of the instructional program it represents.
APPENDIX D
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<td>Forrest Bear</td>
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<td>Carl E. Beeman</td>
<td>Univ. of Florida</td>
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<td>Terry Bucker</td>
<td>Missouri Farm Bureau</td>
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<td>Curtis Corbin</td>
<td>Georgia Dept. of Education</td>
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<td>Floyd J. Doering</td>
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<td>Duane Fisher</td>
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<td>Unice Latimar</td>
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<td>Larry Lokai</td>
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<td>Thaine McCormick</td>
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<td>David Miller</td>
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<td>Edgar P. Yoder</td>
<td>Penn State Univ., Ag. Ed.</td>
<td>University Park PA</td>
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APPENDIX E
INFORMATION ON THE USE OF HUMAN SUBJECTS IN RESEARCH
IOWA STATE UNIVERSITY

(Please follow the accompanying instructions for completing this form.)

1. Title of project (please type): Formulation and Validation of Educational Objectives and Administrative Criteria for National FFA Contests.

2. I agree to provide the proper surveillance of this project to insure that the rights and welfare of the human subjects are properly protected. Additions to or changes in procedures affecting the subjects after the project has been approved will be submitted to the committee for review.

Mack W. Smith 11/27/84
Typed Name of Principal Investigator Date Signature of Principal Investigator

Ag. Ed. 223 Curtiss Hall 294-5872
Campus Address Campus Telephone

3. Signatures of others (if any) Date Relationship to Principal Investigator

4. ATTACH an additional page(s) (A) describing your proposed research and (B) the subjects to be used, (C) indicating any risks or discomforts to the subjects, and (D) covering any topics checked below. CHECK all boxes applicable.

☐ Medical clearance necessary before subjects can participate
☐ Samples (blood, tissue, etc.) from subjects
☐ Administration of substances (foods, drugs, etc.) to subjects
☐ Physical exercise or conditioning for subjects
☐ Deception of subjects
☐ Subjects under 14 years of age and (or) ☐ Subjects 14-17 years of age
☐ Subjects in institutions
☐ Research must be approved by another institution or agency

5. ATTACH an example of the material to be used to obtain informed consent and CHECK which type will be used.

☐ Signed informed consent will be obtained.
☒ Modified informed consent will be obtained.

6. Anticipated date on which subjects will be first contacted: Month Day Year
Anticipated date for last contact with subjects: Month Day Year

7. If Applicable: Anticipated date on which audio or visual tapes will be erased and (or) identifiers will be removed from completed survey instruments: Month Day Year

8. Signature of Head or Chairperson Date Department or Administrative Unit

9. Decision of the University Committee on the Use of Human Subjects in Research:
☒ Project Approved ☐ Project not approved ☐ No action required

George G. Karas 11/12/84
Name of Committee Chairperson Date Signature of Committee Chairperson