

## **The Delta Conference – Participant Perceptions of Learned Instructional Strategies and Techniques**

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### **Abstract**

*The Delta Conference is known as an event having profound impact on teachers' thinking and performance in the field. Many of the specialized techniques and strategies focused on, while at Delta, challenge teachers to manipulate delivery philosophy and practice to enhance student learning and engagement. This descriptive study sought to determine Delta Conference participant perceptions related to specific instructional strategies and techniques learned while attending the conference. The study surveyed a census of participants (N=45) who attended the 2007 Delta Conference. Two objectives were developed, and data gathered, regarding demographic characteristics and participant perceptions concerning skill development and current utilization related to writing behavioral objectives, creating interest approaches/focus/anticipatory sets, setting context, delivering effective directions, utilizing E-Moments, and utilizing inclusive language. Results indicated overwhelming positive support for the skills and techniques developed from activities engaged in during the 2007 Delta Conference. The authors called for continuation of strategies currently employed by program coordinators, and for continuation of the program for teacher development. Additionally, support for Delta from Team AgEd; communication of results of this study and other program impacts to local, state, and national educational administration; and continued research focusing on student learning is recommended.*

### **Introduction and Conceptual Framework**

Just as agricultural commodities must be consumed to feed the body, so must agricultural educators consume continuing education and professional development opportunities to feed the mind. Without proper “nutritional” professional development and technical updates, an agricultural educator may lose the “muscle” and physique built and conditioned in his or her teacher education program. Similarly, professional development opportunities for inservice teachers are served up in myriad ways: week-long, all-you-can-eat buffets of a variety of topics; two or three day conferences combining association meetings intermingled with topics of state or national importance; and the ever-popular fad “diets” of single-day, educational innovation of the moment instructional meetings. What commonality does each of these delivery systems share? Many professional development programs are delivered in a “one-shot” mode whereby teachers are provided instruction to fit a predetermined time span, and then teachers are sent home and left to their own devices.

Among other identified needs (Joerger & Boettcher, 2000; Myers, Dyer, & Washburn, 2005), high quality professional development is paramount to the retention of teachers in the profession.

As recently as 2006, the American Association of Agricultural Educators' teacher supply and demand survey (Kantrovich, 2007) indicated an expected gap of 251 agricultural education teaching positions nationally for the fall 2007 semester. With such a shortage continuing to besiege agricultural education's teaching ranks, innovative, engaging, and practical application professional development opportunities must become a permanent part of the menu!

Joerger and Boettcher (2000) assessed the nature and impact of teaching events and assistance on beginning agricultural education teachers in Minnesota. Interestingly, critical events with beginning teachers included notably high self-confidence in teachers' own teaching ability, experiencing satisfaction after successfully implementing classroom activities, and watching students experience success in the classroom. Their findings and recommendations indicated a continued need to explore the "nature, impact, and occurrence of desired forms of assistance and the events experienced by beginning teachers of agricultural education" (p. 13).

Conklin, Hook, Kelbaugh, and Nieto (2002) conducted a comprehensive needs assessment of extension professionals and found that 92% of respondents preferred a face-to-face delivery system and that, among other choices, 69% of respondents preferred a web-based professional development delivery system. Additionally, 53% of extension professionals preferred an electronic (Email) form of coaching and/or mentoring. While coordinators met the users' desire to have face-to-face delivery (93%), web-based delivery systems and electronic coaching methods were clearly underutilized (12% and 25%, respectively).

Greiman, Walker, and Birkenholz (2005) reported a common theme of isolation for agricultural teachers in the induction year. Teachers strongly desired the benefit of a support system before the school year began to assist with better understanding of classroom, departmental, and pedagogical management concerns. Teacher mentors, however well-intended as change facilitators for new teachers, are ill-equipped to focus on their mentoring duties as they must center their efforts on readying their own classroom for each new academic year.

The *Concerns Based Adoption Model* (Hall & Hord, 2001) contends that change, especially in the educational genre where teachers often operate in isolation, is often a two to four year process (Figure 1). Simply introducing teachers to a new educational product or process, and then returning the teacher to his or her classroom, often forces the innovation to be deemed a failure because the teacher lacks time, motivation, and support to implement the change. As such, having continued support and encouragement from a change facilitator with understanding of the agricultural educators' needs is paramount to preventing teacher attrition.

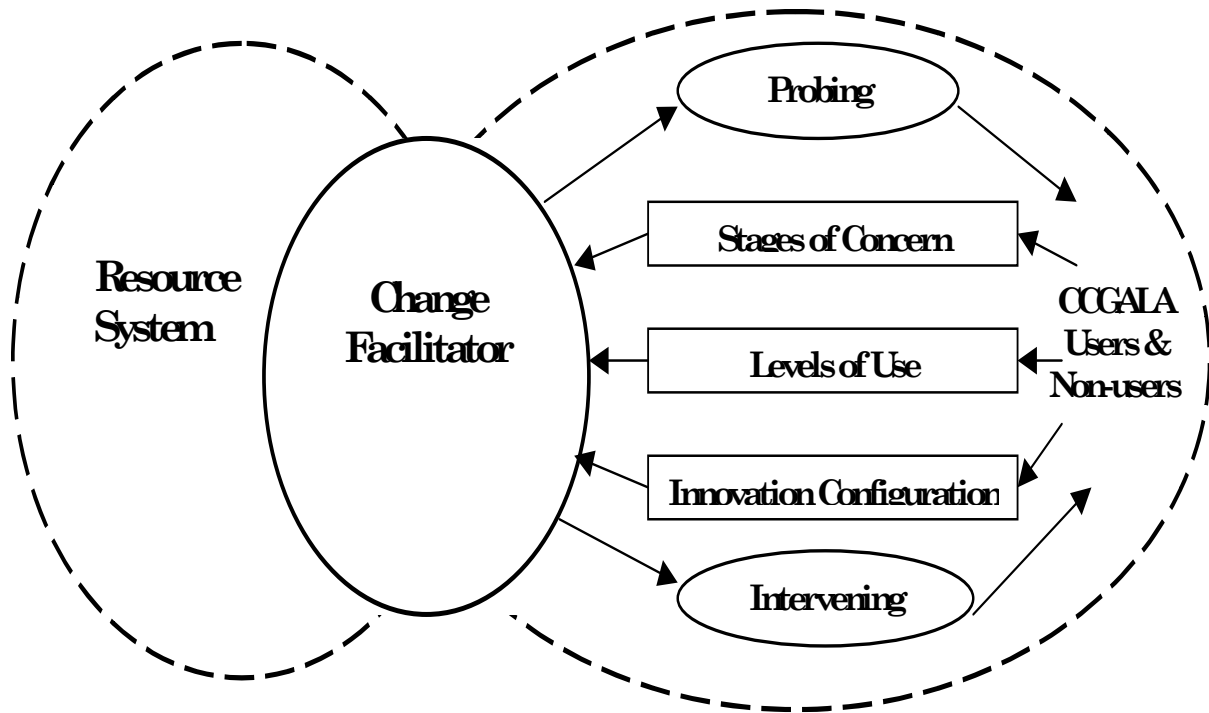


Figure 2-4. Concerns Based Adoption Model (Hall & Hord, 2001)

Hall and Hord characterized principals, teachers, professional development facilitators, and other district personnel in an educational system, as *change facilitators* serving as key factors in the success or failure of an educational innovation (1987). Specifically, these individuals are those who, “for brief or extended periods, assist various individuals and groups in developing the competence and confidence needed to use a particular innovation” (p. 11).

Related to continuing mentorship and facilitation of change when agricultural teachers are entering and attempting to sustain themselves in the profession, is the need for change facilitator support (Ingersoll, 2001) and regular, sustained encouragement for teachers when they are engaged in the educational change process (Hall & Hord, 2001).

In essence, teacher retention and continued survival in the agricultural education field is dependent upon, among other criterion, a professional development delivery system that addresses the teachers’ concerns, rather than seeking to provide a one-time workshop or “train the trainer” session. The 2007 Delta Conference not only continued with the successful face-to-face delivery techniques utilized in initial Delta Conference offerings, but expanded the delivery system to include continued coaching, encouragement, and cross-participant conversations via an electronic portal reserved only for Delta Conference participants, mentors, and facilitators.

### Purpose and Objectives

The purpose of this study was to measure 2007 Delta Conference participant perceptions concerning skill development and current utilization of instructional techniques and strategies learned while attending the Delta Conference. Participants offered perceptive data concerning skill and technique development in writing behavioral objectives, creating interest

approaches/focus/anticipatory sets, setting context, delivering effective directions, utilizing E-Moments, and utilizing inclusive language one semester following their Delta experience.

The objectives of this study were to:

1. Describe 2007 Delta Conference participants based upon selected demographic characteristics; and
2. Determine participant perceptions concerning skill development and current utilization related to writing behavioral objectives, creating interest approaches/focus/anticipatory sets, setting context, delivering effective directions, utilizing E-Moments, and utilizing inclusive language.

### **Methodology**

The population of this descriptive study consisted of agricultural educator participants of the 2007 Delta Conference (N = 45). A census was utilized to gather data from as many participants as possible. Participants were contacted via personal and school email, which were collected through the conference application process.

The instrument was developed using a combination of demographic and Likert-type questions. Questions for the instrument were developed utilizing pre-determined conference goals and prescribed outcomes as guidelines. . The Delta Conference sought to develop specific skills related to teachers' ability to develop and deliver brain-based and engaging lessons. As a part of this effort, and developed into specific constructs of the instrument, were the development of behavioral objectives, the development and delivery of interest approaches, the utilization of contextual sets/bridges, the delivery of effective directions, the utilization of E-Moments, the utilization of inclusive language and the integration of LifeKnowledge concepts into technical lessons. Participants responded to questions using a four-point, Likert-type scale for level of agreement or disagreement for each statement. The four points of the Likert-type scale were: "Strongly Disagree," "Disagree," "Agree," and "Strongly Agree" for the areas concerning writing behavioral objectives, creating interest approaches/focus/anticipatory sets, setting context, delivering effective directions, utilizing E-Moments, and utilizing inclusive language.

Content and face validity of the instrument were established through a panel of experts from the study's sponsoring academic department and conference officials. This study, which was a portion of a larger study, focused primarily on participants' perceptions concerning skill development and current utilization of instructional techniques and strategies learned while attending the Delta Conference. The instrument contained seven sections, each focusing on the instructional techniques and strategies previously mentioned. Cronbach's alpha was utilized to measure the instrument's reliability and yielded an alpha range of  $\alpha = .683$  to  $\alpha = .970$  for the established sections and an overall reliability estimate of  $\alpha = .928$ .

All instrumentation and materials were distributed according to Dillman's *Mail and Internet Survey's Design Method* (Dillman, 2000). The instrument was created, distributed, and data collected utilizing the Vovici EFM Continuum web survey development tool. Questionnaires were distributed to all participants on December 3, 2007, and data collection was completed January 28, 2008. During this time, participants received three reminder emails and one personal

follow-up phone call. It was imperative to collect data from participants one complete semester following participation in the Delta Conference. The overall response rate for the study was 86.7%.

Exported responses from participants were coded and analyzed using the SPSS 14.0 for Windows. Data were analyzed in the form of percentages, counts, means, and standard deviations. Demographic data identifying gender, years of teaching experience, average class size, and size of campus were also collected and analyzed.

## **Findings**

### Objective One

The demographic data for the 2007 Delta Conference participants were analyzed. The mean teaching experience of respondents in years was 5.10 (SD = 5.29), with a range including 1 year of experience through 24 years of experience. Of the conference participants who responded, 30.6% were male and 69.4% were female. Respondents indicated a mean class size of 17.2 (SD = 6.28), with a range including a minimum of five students to a maximum of 28 students. Finally, information was requested concerning student population size.

Table 1 indicates the percentage of participants teaching on campuses with varying population sizes. Campuses offering agricultural courses were represented as ordinal data choices in increments of 100 students.

Table 1

Percentage of Participants Teaching on Campuses With Varying Population Sizes

Campus Population	% Indicated
0-100 Students	10.3
100-200 Students	10.3
200-300 Students	17.2
300-400 Students	10.3
400-500 Students	10.3
500+ Students	41.4

Interestingly, the largest portion of participants was teaching at campuses with five hundred or more students. Other participants were distributed fairly equally across the other ranges of campus size.

### Objective Two

Agricultural education teachers who participated in the 2007 Delta Conference were asked to provide their perceptions concerning skill and technique development in writing behavioral objectives, creating interest approaches/focus/anticipatory sets, setting context, delivering effective directions, utilizing E-Moments, and utilizing inclusive language. Tables 2 through 7 offer participant responses to the Likert-type questions concerning each area indicated above. In each question set, teachers were asked to indicate level of agreement or disagreement to each statement.

Table 2 details participant perceptions concerning utilization of behavioral objectives in planning student learning. Behavioral objectives allow teachers to organize content while creating measurable and observable student learning outcomes (Bloom, 1956).

Table 2  
Perceptual Likert-Type Questions Focusing on Writing Behavioral Objectives

Individual Questions	Percentage			
	SA	A	D	SD
My experience at the Delta Conference taught me how to write effective behavioral objectives.	55.3	36.8	7.9	0
The time allotted to practice writing behavioral objectives at the Delta Conference was key to my understanding of how to write them.	39.5	52.6	7.9	0
I write behavioral objectives more frequently because of my experiences at the Delta Conference.	36.8	52.6	7.9	2.6
My ability to write effective behavioral objectives has made me a better designer of learning for my students.	50.0	44.7	5.3	0
My ability to write effective behavioral objectives has made me a better teacher in my classroom and laboratories.	60.5	34.2	5.3	0

More than 90% of agricultural education teachers attending the 2007 Delta Conference agreed or strongly agreed to all statements relating to the development of behavioral objectives in designing lessons. Overwhelmingly, teacher participants indicated the conference taught them how to write effective behavioral objectives, the time allowed to practice writing objectives was beneficial, they write behavioral objectives more frequently, and that they are better lesson designers and better teachers due to their experiences with writing behavioral objectives.

Table 3 examines participant perceptions of the utility of interest approaches in teaching. The interest approach (anticipatory set/focus) is designed to motivate students to learn before delivery of a lesson's content while focusing student attention on the topic at hand (Moore, 1974).

Table 3  
Perceptual Likert-Type Questions Focusing on Creating Interest Approaches

Individual Questions	Percentage			
	SA	A	D	SD
My experience at the Delta Conference taught me how to create an Interest Approach.	63.2	34.2	2.6	0
The time allotted to practice creating an Interest Approach at the Delta Conference was key to my understanding of how to create them.	52.6	39.5	7.9	0
I utilize Interest Approaches more frequently because of my experiences at the Delta Conference.	47.4	47.4	5.3	0
My ability to create an Interest Approach has caused my students to better engage in my lessons.	50.0	50.0	0	0
My ability to create an Interest Approach has made me a better teacher in my classroom and laboratories.	47.4	50	2.6	0

Participants consistently agreed to all statements concerning creation of an interest approach, time spent practicing, frequency of utilization, student engagement, and perceived teaching

quality. With regard to improved student engagement because of their ability to create an interest approach, participants indicated no level of disagreement.

Table 4 highlights participant perceptions concerning the utilization of contextual sets/bridges. Setting context or creating contextual bridges is a technique utilized in order to orient students to learning and the progress of the lesson. Conducted before, during, and after lessons, contextual sets/bridges offer students a guide to what they have learned, what will be next, why the information is relevant to them, and how they are to perform in the learning situation (Deporter, Reardon, & Singer-Nourie, 1998).

Table 4  
Perceptual Likert-Type Questions Focusing on Setting Context

Individual Questions	Percentage			
	SA	A	D	SD
My experience at the Delta Conference taught me how to implement Contextual Sets/Bridges.	60.5	39.5	0	0
The time allotted to practice delivering Contextual Sets/Bridges at the Delta Conference was key to my understanding of how to use them.	57.9	42.1	0	0
I utilize Contextual Sets/Bridges more frequently because of my experiences at the Delta Conference.	52.6	44.7	2.6	0
My ability to use Contextual Sets/Bridges has caused my students to remain engaged in my lessons.	47.4	50.0	2.6	0
My ability to use Contextual Sets/Bridges has made me a better teacher in my classroom and laboratories.	55.3	42.1	2.6	0

When examining their ability to orient students in a given lesson, participants indicated vigorous levels of agreement. As a learned concept, and considering time to hone setting context for students, all participants strongly agreed or agreed. Teachers also indicated high levels of agreement to frequency of use, student engagement, and perceived quality of teaching when reflecting upon contextual sets/bridges.

Table 5

explains participant perceptions of effective direction utilization. Directions in teaching become effective if a series of salient and succinct information is provided to the learner in a fashion that positions mind before body, and outlines parameters for time and checking for understanding (Deporter, Reardon, & Singer-Nourie, 1998).

Table 5  
Perceptual Likert-Type Questions Focusing on Delivering Effective Directions

Individual Questions	Percentage			
	SA	A	D	SD
My experience at the Delta Conference taught me how to deliver Effective Directions.	78.9	21.1	0	0
The time allotted to practice delivering Effective Directions at the Delta Conference was key to my understanding of how to use them.	68.4	28.9	2.6	0
I utilize Effective Directions more frequently because of my experiences at the Delta Conference.	71.1	28.9	0	0
My ability to deliver Effective Directions has caused my students to know exactly what is required for an activity.	68.4	31.6	0	0
My ability to deliver Effective Directions has made me a better teacher in my classroom and laboratories.	71.1	28.9	0	0

Respondents offered high levels of agreement to statements focusing on the delivery of effective directions. Respondents tended to strongly agree to what each statement concerning effective directions communicated.

Table 6 focuses on participant perceptions of E-Moments, or engaging moments. E-Moments are educational strategies designed to engage students by utilizing a combination of chunking, rehearsal, pattern recognition, and emotional involvement designed from sound theoretical principles in education (Reardon & Derner, 2004).

Table 6  
Perceptual Likert-Type Questions Focusing on Utilizing E-Moments

Individual Questions	Percentage			
	SA	A	D	SD
My experience at the Delta Conference taught me how to utilize E-Moments in a learning environment.	68.4	31.6	0	0
The time allotted to practice utilizing E-Moments at the Delta Conference was key to my understanding of how to implement them.	73.7	23.7	2.6	0
I utilize E-Moments more frequently because of my experiences at the Delta Conference.	60.5	36.8	2.6	0
My ability to utilize E-Moments has caused my students to truly learn concepts I have taught.	63.2	36.8	0	0
My ability to utilize E-Moments has made me a better teacher in my classroom and laboratories.	65.8	34.2	0	0

Once again, participants offered high levels of agreement across all statements focusing on the utilization of E-Moments. With respect to participants' perceptions regarding improved student learning and improved teaching quality, when implementing E-Moments, 100% of respondents strongly agreed or agreed.

Table 7 includes participant responses concerning perceptions of inclusive language. Using inclusive language while teaching is a process of purposefully choosing words and crafting speech to create a welcoming and encouraging environment for students devoid of conflict

between the student and teacher. Appropriate language may also be utilized to increase engagement and effectively convey meaning (Deporter, Reardon, & Singer-Nourie, 1998).

Table 7  
Perceptual Likert-Type Questions Focusing on Inclusive Language

Individual Questions	Percentage			
	SA	A	D	SD
My experience at the Delta Conference taught me how to use Inclusive Language in a learning environment.	44.7	55.3	0	0
The time allotted to practice Languageing at the Delta Conference was key to my understanding of how to implement it.	39.5	60.5	0	0
I utilize Inclusive Language more frequently because of my experiences at the Delta Conference.	50.0	50.0	0	0
My ability to utilize Inclusive Language has created a more learner friendly environment for my students.	47.7	52.6	0	0
My ability to use Inclusive Language has made me a better teacher in my classroom and laboratories.	54.1	45.9	0	0

Responding participants consistently agreed to all statements concerning the use of inclusive language, time spent practicing, frequency of utilization, creation of a student friendly environment, and perceived teaching quality enhancement. Interestingly, no participant disagreed to any of the statements focusing on the use of inclusive language.

### **Conclusions and Recommendations**

#### Objective One

A large percentage of the 2007 Delta Conference participants were female, while approximately one-third were male. As a whole, participants were not seasoned teachers. This may explain why so many were willing to adopt and sustain the use of new teaching strategies and techniques (Bellah & Dyer, 2007). The varying range of class size indicates that participants are having success with the learned techniques and strategies in an array of class sizes. This finding highlights the flexibility of the techniques and strategies learned by participants. Finally, although larger schools were heavily represented in the current study, it should be noted that participants were distributed equally across the other school sizes. This indicates that the learned strategies and techniques have the potential to work well in agricultural education programs and their respective campuses regardless of student population size.

It is the recommendation of the authors that the findings be approached with caution because the representative data denote only one Delta Conference class. Multiple classes should be studied over extended periods in order to establish stability in the current findings.

#### Objective Two

Participants issued overwhelmingly positive support for the skills and techniques developed in writing behavioral objectives, creating interest approaches/focus/anticipatory sets, setting context, delivering effective directions, utilizing E-Moments, and utilizing inclusive language. Participants consistently indicated that experiences at the conference developed or

enhanced their ability to engage in writing behavioral objectives, creating interest approaches/focus/anticipatory sets, setting context, delivering effective directions, utilizing E-Moments, and utilizing inclusive language. Central to the Delta Conference mission is the concept of practice, or rehearsal, of a strategy or technique, receiving feedback, then practicing again. Consistently, participants perceived the time to practice the concepts learned as ample.

Results of this study also indicated the frequency of a technique's use was increased and carried into individual participants' teaching in the field. One of the most important findings was related to participant perceptions of students' benefit from the use of a technique, as well as the perceived enhancement of teacher quality. Participants believed themselves to be performing at a higher level, which translated to increased student learning, from their perspective. Finally, a finding of lesser connotation was noted by the researchers due to the traditional nature of the skills to which it related. Both the writing of behavioral objectives and creation of interest approaches/focus/anticipatory sets received slightly lower levels of agreement as compared to the latter techniques, which may be viewed as more novel. The researchers postulate that participants possessed higher levels of prior knowledge related to writing of behavioral objectives and creation of interest approaches/focus/anticipatory sets because these are skills typically learned during preservice activities. However, when focusing on the level of positive response to statements made about writing behavioral objectives and creation of interest approaches/focus/anticipatory sets, the increase in perception, assuming participants' prior exposure to these content areas, is noteworthy.

Once again, it is the recommendation of the authors that the findings be approached with caution because the representative data characterize only one Delta Conference class. Multiple classes should be studied over extended periods to establish stability in the current findings. However, the overwhelming positive response to the strategies and techniques learned by participants would be difficult to dismiss. Therefore, the authors recommend the continued utilization of the techniques and strategies teachers engage in during the conference. Also, continued promotion of the Delta Conference to all secondary and middle school agricultural educators and continued support of the program is recommended. Post-secondary teacher preparation programs may improve pre-service delivery of content by utilizing delivery methods similar to those experiences enveloped in the Delta Conference. State and national structures within Team AgEd are encouraged to secure funding and replicate the conference regionally and nationally. Finally, it is the recommendation of the authors to teacher education institutions to implement strategies allowing pre-service teachers to see a model of what is expected in their own classrooms, practice it in their pre-service experience and then receive direct feedback on their performance. This methodology adopted by the Delta Conference has produced change in teachers with experience and should be utilized with pre-service teachers.

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