

The Delta Conference – Participant Utilization of Instructional Strategies and Techniques Pre and Post Conference

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Abstract

The Delta Conference is a specialized professional development event focusing on student engagement through teacher development. As with any professional development activity, a certain level of knowledge may transition into teacher application, while the rest is lost at the conclusion of the activity. This descriptive study sought to determine sustainability of each of the primary educational concepts taught at the Delta Conference one semester post-conference. The study surveyed a census of participants (N=45) who attended the 2007 Delta Conference. Two objectives were developed, and data were gathered, regarding demographic characteristics and participant pre- and post-conference utilization of writing behavioral objectives, creating interest approaches/focus/anticipatory sets, setting context, delivering effective directions, utilizing E-Moments, utilizing inclusive language, and integrating LifeKnowledge™ into technical agricultural lessons. Results indicated a shift in teacher classroom behaviors, reportedly attributable to individual experiences at the 2007 Delta Conference, and that participants continued to engage in high levels of utilization one semester post-conference. The authors called for continuation of the program for teacher development; additional support of 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.

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.

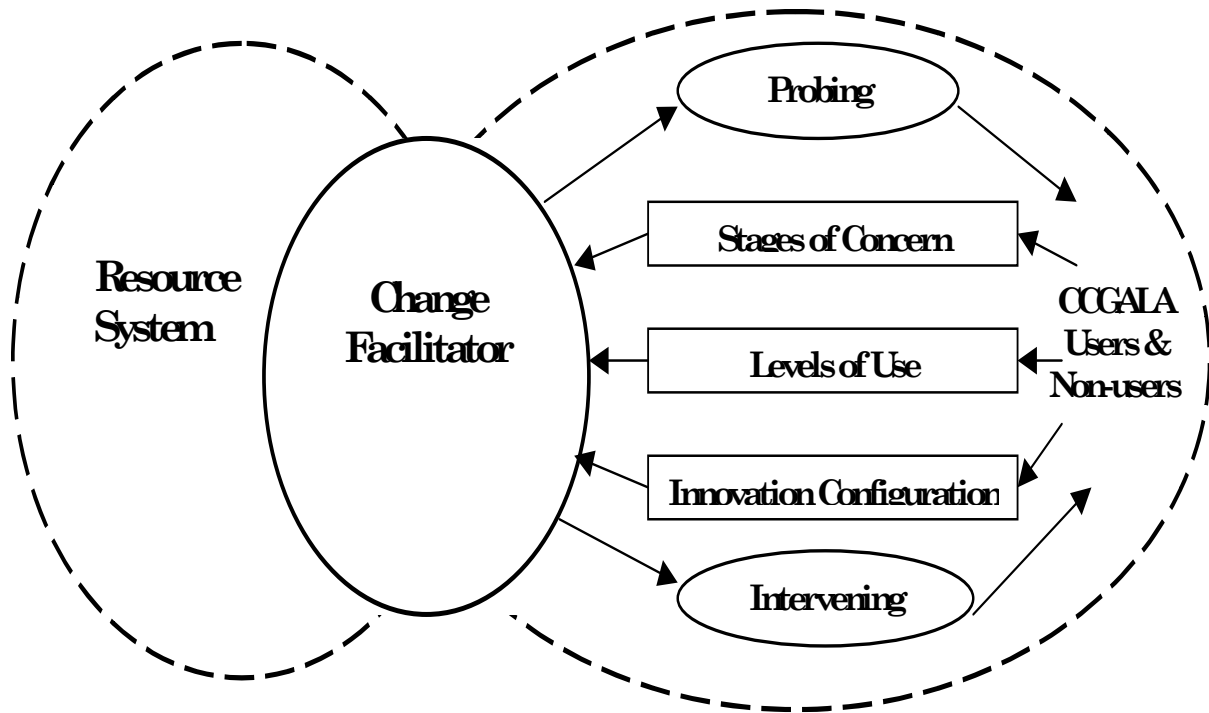


Figure 2-4. Concerns Based Adoption Model (Hall & Hord, 2001)

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 utilization of instructional techniques and strategies before, and six months following, the conference. Participants offered data focusing on usage of writing behavioral objectives, creating an interest approach/focus/anticipatory set for lesson plans, setting context, delivering effective directions,

utilizing E-Moments, utilizing inclusive language, and integrating LifeKnowledge™ into technical agricultural lessons one semester following the Delta Conference experience.

The objectives of this study were to:

1. Describe 2007 Delta Conference participants based upon selected demographic characteristics; and
2. Determine participant pre and post conference utilization of writing behavioral objectives, creating interest approaches/focus/anticipatory sets, setting context, delivering effective directions, utilizing E-Moments, utilizing inclusive language, and integrating LifeKnowledge™ into technical agricultural lessons.

Methodology

The population for this descriptive study consisted of agricultural educator participants in 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 data collection instrument was developed using a combination of demographic and Likert-type questions. Instrument questions 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 pre- and post-conference utilization. The four points of the Likert-type scale indicating usage were: "Daily," "Weekly," "Monthly," and "Never" for the areas concerning writing behavioral objectives, creating interest approaches/focus/anticipatory sets, setting context, delivering effective directions, utilizing E-Moments, utilizing inclusive language, and integrating LifeKnowledge™ into technical agricultural lessons.

Content and face validity of the instrument were established by a panel of experts from the study's sponsoring academic department and by conference officials. This study, which was a portion of a larger study, focused primarily on participant utilization of instructional techniques and strategies before, and six months following, the conference. The instrument contained seven sections, each focusing on the pre- and post-conference utilization of instructional techniques and strategies previously mentioned. Cronbach's alpha was utilized to measure the instrument's reliability and yielded an overall alpha of $\alpha = .813$.

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 were 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 period, participants received three reminder emails and one

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

Exported responses from participants were coded and analyzed using the SPSS 14.0 for Windows. Data were analyzed as parameters 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 one 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 school population size.

Table 1 highlights the percentage breakdown of teacher participants' campus populations. Campus population, indicated by students available to enroll in agricultural education courses, was 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 relatively equal 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 pre- and post-conference utilization of writing behavioral objectives, creating interest approaches/focus/anticipatory sets, setting context, delivering effective directions, utilizing E-Moments, and utilizing inclusive language. Tables 2 through 8 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 both pre- and post-conference 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
Pre and Post Conference Utilization - Writing Behavioral Objectives

Individual Questions	Percentage			
	D	W	M	N
Pre-conference utilization	18.4	26.3	44.7	10.5
Post-conference utilization	47.4	44.7	7.9	0

Note. (D)aily, (W)eekly, (M)onthly, (N)ever

The percentage of participants engaging in the creation of behavioral objectives for lessons increased following the conference. Participants indicated a 29% increase in the creation of behavioral objectives on a daily basis and an increase of 18.4% on a weekly basis in the six months following the conference.

Table 3 examines participant utilization of interest approaches in teaching both before and after attending the Delta Conference. The interest approach (anticipatory set/focus) is designed to increase student awareness, motivation, and receptivity to learning before a lesson's content delivery, while focusing attention on the topic at hand (Moore, 1974).

Table 3
Pre and Post Conference Utilization – Interest Approaches

Individual Questions	Percentage			
	D	W	M	N
Pre-conference utilization	21.1	44.7	23.7	10.5
Post-conference utilization	60.5	34.2	5.3	0

Note. (D)aily, (W)eekly, (M)onthly, (N)ever

Participant utilization of an interest approach to gain students' attention increased noticeably six months following the conference. While 66.4% of participants indicated using interest approaches on a daily or weekly basis before conference, post conference utilization realized an increase of 28.3% to the final utilization rate of 94.7% on a daily or weekly basis.

Table 4 highlights pre and post conference utilization of contextual sets/bridges. Setting context, or creating contextual bridges, is a technique utilized to orient students to learning and where they are in 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
Pre and Post Conference Utilization – Contextual Sets/Bridges

Individual Questions	Percentage			
	D	W	M	N
Pre-conference utilization	21.1	44.7	23.7	10.5
Post-conference utilization	60.5	34.2	5.3	0

Note. (D)aily, (W)eekly, (M)onthly, (N)ever

Teachers indicated that, before the Delta Conference, 26.3% of participants never utilized contextual setting or bridging to orient student learning during lessons. Participants indicated that 60.5% engaged in the daily use of setting context, while 34.2% reported setting context, on a weekly basis, six-months following the Delta Conference.

Table 5

explains pre- and post-conference utilization of effective directions. 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
Pre and Post Conference Utilization – Delivering Effective Directions

Individual Questions	Percentage			
	D	W	M	N
Pre-conference utilization	2.6	36.8	34.2	26.3
Post-conference utilization	73.7	23.7	2.6	0

Note. (D)aily, (W)eekly, (M)onthly, (N)ever

Noteworthy findings concerning Delta Conference participants' use of effective directions before and after the experience include daily usage of effective directions increasing 71.1%, from 2.6% before conference, to 73.7% six months post-conference. In addition, 26.3% of participants self-reported never using effective directions before the conference. No participant indicated never using effective directions during the 2007 fall semester.

Table 6 focuses on pre- and post-conference utilization 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, all designed from sound theoretical principles in education (Reardon & Derner, 2004).

Table 6
Pre and Post Conference Utilization – E-Moments

Individual Questions	Percentage			
	D	W	M	N
Pre-conference utilization	2.6	26.3	47.4	23.7
Post-conference utilization	34.2	60.5	5.3	0

Note. (D)aily, (W)eekly, (M)onthly, (N)ever

Nearly 25% of participants never utilized E-Moments before attending Delta. Post-conference data indicate a 31.6% increase in daily usage and a 34.2% increase in weekly usage. No participant indicated never using E-Moments following their experience at the Delta Conference.

Table 7 includes participant responses concerning the pre- and post-conference utilization of inclusive language. The use of 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 inclusive language may also be utilized to increase engagement and effectively convey meaning (Deporter, Reardon, & Singer-Nourie, 1998).

Table 7
Pre and Post Conference Utilization – Inclusive Language

Individual Questions	Percentage			
	D	W	M	N
Pre-conference utilization	7.9	26.3	50.0	15.8
Post-conference utilization	65.8	28.9	2.6	2.6

Note. (D)aily, (W)eekly, (M)onthly, (N)ever

Responding participants indicated a 57.9% increase in the utilization of inclusive language on a daily basis following the conference. The percentage of participants utilizing inclusive language on a weekly basis remained steady, while the percentage of monthly users declined from pre- to post-conference. Finally, participants indicating they never utilized inclusive language fell from 15.8% to 2.6% based on pre- and post-conference data.

Table 8 details the pre and post conference integration of LifeKnowledge™. LifeKnowledge™, an initiative of the National FFA Organization, was developed so FFA members actualize the mission of the organization through a specially designed program of study in leadership (National FFA Organization, 2007).

Table 8
Pre and Post Conference Utilization – LifeKnowledge™ Integration

Individual Questions	Percentage			
	D	W	M	N
Pre-conference utilization	2.6	10.5	44.7	42.1
Post-conference utilization	28.9	50.0	18.4	2.6

Note. (D)aily, (W)eekly, (M)onthly, (N)ever

Participants increased integration of LifeKnowledge™ concepts on a daily and weekly basis following their experiences. Pre-conference estimates indicated that 42.1% of participants had never integrated LifeKnowledge™ concepts into a lesson. However, following Delta, only 2.6% of participants indicated not engaging in LifeKnowledge™ integration.

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 campuses were heavily represented in the current study, it should be noted that participants were distributed equally across the other campus 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 to establish stability in the current findings.

Objective Two

Data collected and represented in objective two indicate a notable shift in teacher classroom behaviors reportedly attributable to individual experiences at the 2007 Delta Conference. Teacher participants indicated increases of daily and weekly creation of behavioral objectives. Primary development of skill in creating behavioral objectives for lesson planning has traditionally occurred in the preservice experience. This finding begs questions related to time and delivery method of basic planning concepts and why such lessons typically taught in the preservice experience potentially do not stick.

The utilization of interest approaches/anticipatory sets/focuses yielded similar results. This teaching strategy is typically introduced at the preservice level; however, following reinforcement, practice, and coaching while at the Delta Conference, the largest percentage of usage shifted from weekly to daily (60.5%) usage regarding this valuable concept.

While not a traditional concept of planning and teaching, setting context for student learning experienced similar results to that of interest approach usage. The concept of setting context is an important daily practice (Deporter, Reardon, & Singer-Nourie, 1998) to aid in student comprehension, and use of this concept experienced an increase from 26.3% daily pre-conference use to 60.5% of participants using it on a daily basis.

The delivery of effective directions tends to be a new concept for most Delta participants; however, participants widely adopted and indicated sustained use one semester following the conference. Before conference, only 2.6% indicated daily usage of effective directions, while post-conference results indicated 73.7% daily usage of this instructional technique. This finding is not surprising due to the influential nature of the technique in creating efficiency for the teacher and clarity for the students, while engaging in specific activities (Deporter, Reardon, & Singer-Nourie, 1998).

E-Moments were being used prior to the Delta Conference. More than 76% of participants were using these specialized teaching techniques on a daily, weekly or monthly basis; however, post-conference results indicated an increase of 31.6% increase in daily usage and a 34.2% increase in weekly usage. This finding indicates that teachers are engaging students' multiple intelligences and learning styles at higher cognitive levels and at a notably increased rate.

The utilization of inclusive language tends to be a very specialized technique requiring much practice. Many participants struggle with learning this technique due to ingrained language patterns a person develops throughout life. However, through practice and coaching provided at the conference, daily usage of inclusive language use increased from 7.9% to 65.8% six-months following the conference.

Finally, LifeKnowledge™ integration experienced considerable increases in usage. Participants indicated increases of 2.6% to 28.9% on a daily basis, and 10.5% to 50.0% on a weekly basis. Teacher participants never integrating LifeKnowledge™ fell from 42.1% before conference to 2.6% following conference. Students may be benefiting from an increased usage of leadership concepts by their teachers in technical agriculture lessons; therefore, continued research in the use of this technique should be pursued with respect to student experiences.

Data indicated a substantial change in sustained usage of techniques learned while at the 2007 Delta Conference. The authors recommend the continuation of all instructional techniques and strategies currently utilized at the Delta Conference. It is also recommended to continue promotion of the Delta Conference to all secondary and middle school agricultural educators and continued support of the program. State and national structures within Team AgEd are encouraged to secure funding and replicate the conference regionally and nationally. It is also important to communicate the findings of this study to educational administrators on the local, state, and national level. 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. The authors also suggest that those involved in inservice delivery to agricultural educators as well as other teachers heed the findings of this study and implement the methodologies utilized by the Delta Conference in order to realize similar results. Finally, the authors recommend continued research focusing on the impact of teacher usage of the studied instructional strategies and techniques on individual student learning. The Delta Conference provides much promise for pedagogical practices in agricultural education, but more investigation must be conducted with future Delta classes in order to provide consistent results.

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