EDITORIAL

Distance education technologies can be used in many contexts to effectively deliver credit and non-credit instruction. In this issue of DEOSNEWS Dr. George Flaskerud describes the use of an interactive video network to offer agricultural extension workshops to remote sites. Using telecommunications technology to deliver workshops greatly increases the ability of extension educators to disseminate new knowledge and techniques to their clientele and, as Dr. Flaskerud indicates, is as educationally effective as more traditional delivery methods.

THE EFFECTIVENESS OF AN INTERACTIVE VIDEO NETWORK(IVN) EXTENSION WORKSHOP

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A two-way interactive video workshop can be just as effective as a face-to-face workshop to which a specialist must travel to meet with the participants. Interactive video provides an opportunity for extension educators to efficiently and effectively extend knowledge to distant places without traveling to each site. Eliminating travel gives the university extension specialist more time to develop programs, improve workshops and conduct more workshops desired by clientele.

The North Dakota Interactive Video Network (IVN) provides the opportunity for extension educators and program participants to see and hear each other from different locations around the state. The IVN is particularly useful since the teaching base, North Dakota State University (NDSU), is located near the east central border.

This article demonstrates that an IVN workshop is not only more convenient than a regular workshop, but just as effective. Components of two NDSU Extension Service marketing workshops conducted either in person or on the IVN in the same region of North Dakota are described in section one. Evidence of learning in both workshops is documented and factors affecting
success of the IVN workshop are identified in sections two
and three, respectively. Other extension applications of the IVN
are examined in section four, and conclusions based upon
evaluation data and experience are summarized in the final section.

WORKSHOP COMPONENTS

The IVN marketing workshop encompassed four weekly three-
hour sessions at Williston, North Dakota, in March 1992. The
regular face-to-face workshop to which the IVN workshop is compared
was held two consecutive days at Crosby, North Dakota, in March
1993. Williston and Crosby are about 70 miles apart in the
northwest corner of North Dakota. The IVN workshop was
taught from Fargo, which is about 400 miles from Williston. The
Williston workshop drew 18 participants, and the Crosby
workshop 14.

The IVN site at Williston is one of 15 IVN classrooms in North
Dakota. Each site is equipped with two monitors for the audience
and a low-profile, open-gated microphone for approximately every
two participants. One large video monitor at the front of each
classroom automatically shows the site where someone is
speaking or has last spoken. A second monitor shows the video
signal going out from the local classroom to other sites. A
classroom technician is present at each site to assist with
equipment adjustments and technical problems.

Both workshops covered the same basic marketing concepts: risk
management, marketing plans, basis, storage returns, futures and
options. Participants were expected to gain a working knowledge
of these concepts.

A marketing notebook by O'Connor and Anderson (1989),
supplemented with extension publications and copies of the visual
aids used, were distributed to workshop participants. The
audiences at both locations were instructed to follow along in the
notebook during the presentations. Emphasis was placed on
participants reinforcing concepts by working in groups of three or
four to complete exercises during the workshops. Participants
were encouraged to work additional exercises and visit with local
marketing firms between IVN sessions, and then to come back
with comments and questions.

Visual aids were adapted for the IVN workshop for better viewing
on the video monitor. Fewer lines of information and bigger print
were essential. Otherwise, all information for both workshops
was presented in the same way by the same extension specialist.

A facilitator—the county extension agent—was present at the IVN
workshop to help with the exercises and to answer questions
raised after the workshop. In addition, the facilitator was
responsible for distributing and collecting handouts, inventories
and evaluations. The facilitator requested the IVN technician to
videotape sessions for those who wanted to review the concepts or
who could not attend the workshop. At the regular Crosby
workshop, the presence of the extension specialist was sufficient.

EVIDENCE OF LEARNING

Participants completed inventories to determine their marketing
knowledge at the beginning and end of both workshops. The inventories were developed from publications by O'Conner and Anderson (1989), the Chicago Board of Trade (1989) and the Minneapolis Grain Exchange (1991).

The "t" test was used to verify that participants in the workshops improved their marketing knowledge. For each workshop and subject area, the null hypothesis for the test was that participants did not improve their understanding of marketing concepts. A significant "t" value indicates, to the contrary, that participants did improve their level of understanding as a result of the workshop. Results of the inventories and 10 "t" tests are shown in Table 1, five for the IVN workshop and five for the regular workshop.

Table 1. Comprehension of Marketing Concepts by Participants: A Comparison of an Interactive Video Network (IVN) Workshop with a Traditional Workshop

<table>
<thead>
<tr>
<th>ITEM</th>
<th>IVN Workshop</th>
<th>Regular Workshop</th>
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<tbody>
<tr>
<td></td>
<td>Pre</td>
<td>Post</td>
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<tr>
<td></td>
<td>Test Scores</td>
<td>57%</td>
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<tr>
<td></td>
<td>Self-eval.</td>
<td>---------------</td>
</tr>
<tr>
<td>Historical basis</td>
<td>2.2</td>
<td>4.1**</td>
</tr>
<tr>
<td>Storage return</td>
<td>2.2</td>
<td>3.7**</td>
</tr>
<tr>
<td>Hedging with futures</td>
<td>1.3</td>
<td>3.7**</td>
</tr>
<tr>
<td>Hedging with options</td>
<td>1.3</td>
<td>3.1**</td>
</tr>
<tr>
<td></td>
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<tr>
<td></td>
<td>Regular Workshop</td>
<td>Pre</td>
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<tr>
<td></td>
<td></td>
<td>56%</td>
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<tr>
<td></td>
<td>Self-eval.</td>
<td>Rating (High=5)</td>
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<td></td>
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<td>2.0</td>
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<td></td>
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** indicates a significant change at the 1% level.
* indicates a significant change at the 10% level.

The results indicate that participants significantly improved their knowledge of marketing concepts in both workshops: learning of the concepts was significant at the 1 percent level in the IVN workshop and at the 10 percent level in the regular workshop.

The results also indicate that the IVN participants had higher post self-ratings in three of the four subject areas than the regular workshop participants. The IVN post self-ratings were higher in the areas of historical basis, storage return and hedging with futures, while the regular post self-rating was higher in hedging with options. It is interesting to note that the pre-workshop self-ratings for the regular workshop participants were higher in two of the four subject areas than the ratings of the IVN participants. The regular workshop participants had lower pre-workshop self-ratings on the historical basis and storage return subject areas.

The inventories further indicate that the workshop content was presented at the appropriate level for the participants. Test scores and self-evaluation ratings were low in the beginning inventories for both the IVN and the regular workshops. The mean post-test scores were 20 to 22 points higher than the pre-workshop scores. The mean self-ratings also ranged from .8 to 2.4 points higher for
the post self-ratings when compared with the pre-workshop ratings.

FACTORS AFFECTING SUCCESS

Small group discussions were possible during the IVN workshop. Although they occurred in both workshops, small group discussions were especially important for the IVN workshop. Someone in each group was able to help the others understand a concept or solve a problem. It was occasionally necessary for the IVN facilitator to alert the presenter when participants needed assistance. It would have been helpful to brief the facilitator in advance on solutions to exercises. Having a facilitator who was knowledgeable about the subject matter was vital to the success of the IVN workshop.

The IVN participants acknowledged that the notebooks facilitated communications and made it easier to understand concepts, and that conducting the workshop over several weeks was conducive to learning. The Crosby participants also recognized that the notebooks helped them to learn. Workshop evaluations indicated that the structure and content of the workshop and methods of instruction met expectations in both the IVN and the regular workshops. The mean evaluation score was 6.00 (maximum of 7.00) with a standard deviation of .90 for the IVN workshop, while for the regular workshop the mean was 6.13 with a standard deviation of .75.

OTHER EXTENSION AGRICULTURAL ECONOMICS IVN APPLICATIONS

Other experiences at NDSU have demonstrated that workshops on agricultural economics can be taught as effectively on IVN as in person. For example, participants maintained a high level of interest during the two-hour commodity price outlook seminars presented during 1989-1993 because the information was specific and relevant.

The information was presented to groups of three sites or less. Sites were included within a group according to crops produced and characteristics of the markets in which the crops were sold. Grouping sites facilitated the discussion of such concepts as breakeven prices, marketing plans, basis and storage returns.

IVN also worked well for an estate planning seminar, presented in 1994, for several reasons (Crane 1994). First, it was possible to assemble a panel of experts for one time and location instead of for nine separate seminars. Further, the state-wide representation added to the depth and diversity of questions, which benefited all seminar participants.

A five member panel of estate planning professionals, moderated by an extension specialist, was featured. Each panel member made a brief statement describing their services, and then responded to questions. Participants were asked to write questions and then to read them. The intent was that this would help them be more precise. If they desired anonymity, they could ask the extension agent who was the facilitator to read their questions.
Similarly, the NDSU Extension Service and the Internal Revenue Service (IRS) co-sponsored a three-hour statewide IVN Income Tax Seminar annually during 1991–1993 for the public (Swenson 1994). Presentations were made by professional tax accountants and IRS personnel, three from the Fargo site and one from the Minot site. A booklet was distributed to the participants after the seminar. Edited by NDSU extension, the booklet was a compilation of papers by the presenters.

CONCLUSIONS

Participants in the IVN workshop learned marketing concepts as well as those in the regular workshop. Completing exercises in small groups and the presence of a knowledgeable facilitator were key factors in the success of the IVN marketing workshop. The inventories and evaluations were very useful when analyzing the performance of the participants and evaluating the success of the marketing workshops. Participants in IVN seminars also felt the programs were very informative and worthwhile. The demonstrated effectiveness of the IVN should make further use of it attractive by the NDSU Extension Service and others for extending knowledge to distant places.

REFERENCES


