



Video teleconferencing (VTC): does it work as an educational delivery method?

Study Team

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Challenge

County-based Cooperative Extension Educators play an important role in providing research-based educational programs to citizens throughout the state. With declining human resources educators are challenged to find alternative delivery methods. The emergence of Video teleconferencing (VTC) allows educators to present a live program in a home county while simultaneously broadcasting to sites in other counties that have VTC technology.

To maximize human resources, FCS educators focused on programs based on their specialized expertise instead of all FCS programs. The challenge was to bring their specialized expertise to nine counties. To bring these programs to this large geographic area through traditional face to face instruction would have required excessive instructional time and travel time on the part of each educator.

To overcome these limiting factors and retain each FCS educator's programming based on their expertise, the educators purchased Video Teleconferencing (VTC) equipment through a seed grant from the College. Daney Jackson, Director of Extension in Pennsylvania noted, "It is essential that we deliver educational programs at a distance to make knowledge available to Pennsylvania citizens where ever they may be". This technology allowed an educator with specialized program expertise to present a program live in her home county while simultaneously broadcasting to sites in other counties that had the VTC technology.

Acceptance of VTC Outside Extension

Corporate training programs, professional education programs, higher education and secondary education use VTC to deliver educational programs at a distance. Healthcare providers use VTC for consultation related to patient care among health professionals at different sites. The question facing the FCS educators: to what extent will extension's target audiences engage in programs delivered through VTC?



The Specialized Educational Program in this Study

VTC technology was used to deliver an educational program on Type 2 Diabetes, an area of expertise of a FCS educator who is a Registered Dietician. Many people who have diabetes have limited educational opportunities to learn about their diet needs. The goal for this program was to reach people dispersed across several counties who wanted additional information about their diet.

VTC provides both video and audio feed through the internet or an ISDN (phone) line allowing instructor and participant or participant and participant at different sites to interact synchronously. As a result, participants in locations distant to the instructor have the opportunity to receive information from an expert that they otherwise may not have received.

The program in this study featured interactive lectures with demonstrations via VTC by the specialist, question and answer with the specialist over VTC, activities at each site directed by the county FCS educator, and question and answers at the local site. About 10-12 people with diabetes (or persons who cooked for a person with diabetes) participated at each of the four sites enabling us to reach a large number of people who would not necessarily have received this information.

Research Questions

In adopting this and other educational technologies, educators who develop a specialized educational program and funders who support the program through investment in the technology, want the answer to two overall research questions (Heinrichs et al., 1995; Kiernan et al., 1995).

- Did the participants think this delivery method, VTC, was an acceptable way to learn?

The working assumption in asking this question is that participants who find a delivery method acceptable will be more likely to learn and make changes (Flagg, 1990).

- Independent of the first question, did the participants actually learn and make changes?

In other words, was there educational impact? This PA EXAMPLE focuses on answering the first question.

Research Design

To compare the VTC method with a traditional educational method in extension (face to face workshop), we established a control group to compare the outcomes. The program was delivered to a face to face workshop with the same content and hands on activities at the same time it was broadcast to remote sites. Our expectation (hypothesis) was that VTC would be considered equivalent to the traditional face to face workshop.

Comparing the two different delivery methods is obviously the most interesting and scientific approach, but if you cannot do that, at least evaluate what the participants in a VTC environment think of the method so you can use VTC again with confidence and improve what might need tweaking.

Evaluation Questions

Exploring whether an educational technology is an acceptable way to learn is exploring a broad concept that has many dimensions. Questions to measure different dimensions of acceptability include direct and indirect measures of acceptance. They can be used as is, or modified, to measure the acceptability of other educational technologies.



Comparison of VTC to other extension delivery methods. We explored whether the VTC method was thought to be as effective as other delivery methods in which the participants had engaged.

*Recent
experience
with other
Extension
delivery
methods*

Cooperative Extension provides information in many ways. For each, circle if you received information from Cooperative Extension in the past three (3) years: (circle answer)

EXTENSION SATELLITE	NO	YES	NOT SURE
EXTENSION WORKSHOP	NO	YES	NOT SURE
EXTENSION WEB SITE	NO	YES	NOT SURE
EXTENSION NEWSLETTER	NO	YES	NOT SURE

*VTC and
other
extension
delivery
methods*

Compare video conferencing (VTC) with other ways you have received educational information in the last three years. (circle number)

Compared to an extension satellite program I attended, VTC was:

- 1 MORE EFFECTIVE
- 2 LESS EFFECTIVE
- 3 THE SAME
- 4 HAVE NOT ATTENDED A SATELLITE PROGRAM

Compared to other extension workshops I attended, VTC was:

- 1 MORE EFFECTIVE
- 2 LESS EFFECTIVE
- 3 THE SAME
- 4 HAVE NOT ATTENDED OTHER EXTENSION WORKSHOPS

Compared to an extension web site, VTC was:

- 1 MORE EFFECTIVE
- 2 LESS EFFECTIVE
- 3 THE SAME
- 4 HAVE NOT USED A WEB SITE

Compared to an extension newsletter, VTC was:

- 1 MORE EFFECTIVE
- 2 LESS EFFECTIVE
- 3 THE SAME
- 4 HAVE NOT RECEIVED A NEWSLETTER



Role of the specialist with expertise. We investigated the participants' perceptions about the value of having an expert albeit on screen. We compared the results of the first question with those from the face to face workshop method.

Role of specialist

How important was it to you, to have a Registered Dietician from Cooperative Extension present the information today? (circle number)

- 1 NOT TOO IMPORTANT
- 2 SOMEWHAT IMPORTANT
- 3 MODERATELY IMPORTANT
- 4 VERY IMPORTANT

Role of specialist

Today's presentation was on screen. How effective was this method compared to having an instructor in the same room with you? (circle number)

- 1 MORE EFFECTIVE
- 2 LESS EFFECTIVE
- 3 THE SAME
- 4 FACE TO FACE WORKSHOP PARTICIPANT

Aspects of interaction. In using alternative delivery methods in place of traditional workshops, educators often consciously plan periods of interaction to offset the seeming obstacles of distance education (Heinrichs et al., 1995; Kiernan et al., 1995). In this program, we integrated two types of interaction: first, several question and answer periods handled by the expert over VTC with all remote sites engaged and second, several hands on activities. At the remote sites, they were handled by the local extension educator.

Interaction

What did you think of the answers the Dietician presented? Were the answers...(circle number)


- 1 HARD TO UNDERSTAND
- 2 EASY TO UNDERSTAND
- 3 SOME HAD AND SOME EASY TO UNDERSTAND



Interaction

Did you have a question you didn't ask or that was not answered during the program? (circle number)

1 NO

2 YES 

If yes, please write the question in the space below.

Interaction

To what extent were the questions from the class helpful to you? (circle number)

1 NOT TOO HELPFUL

2 SOMEWHAT HELPFUL

3 MODERATELY HELPFUL

4 VERY HELPFUL

Interaction

What was important to you about the activities at your site?

Interaction

How useful were the site activities in preparing you to: (circle answer)

EXPECTED CHANGE 1

NOT
USEFUL

SOMEWHAT
USEFUL

MODERATELY
USEFUL

VERY
USEFUL

EXPECTED CHANGE 2

NOT
USEFUL

SOMEWHAT
USEFUL

MODERATELY
USEFUL

VERY
USEFUL

Please explain. _____

Aspects of the technology. We investigated several features of the participants' experience with VTC and its impact on the future.

*VTC
experience*

Today you participated in a program that used video conferencing (VTC). How willing are you to come to another program you are interested in, if it used VTC? (circle number)

1 NOT VERY WILLING

2 SOMEWHAT WILLING

3 MODERATELY WILLING

4 VERY WILLING

Please explain. _____




VTC
experience

Think about the pace of today's entire program. Was it... (circle number)

- 1 TOO FAST
- 2 TOO SLOW
- 3 JUST RIGHT

VTC
experience

Were there any problems at your site that you found distracting (circle number)

- 1 NO
- 2 YES 

If yes, (circle all that apply)

- 1 SCREEN SIZE
- 2 POOR SOUND DURING PRESENTATION
- 3 POOR SOUND DURING QUESTION PERIOD
- 4 POOR PICTURE QUALITY DURING PRESENTATION
- 5 EXTRA EQUIPMENT
- 6 OTHER (specify)

Aspects of learning. We investigated whether the participants thought they received enough information and whether they felt motivated to take action as a result of participating in this new delivery method. We compared these results with those who participated in the face to face method.

Learning
via
VTC

After hearing the lesson and the questions, how motivated are you to: circle answer)

EXPECTED CHANGE 1	NOT AT ALL	MINIMALLY	MODERATELY	CONSIDERABLY
EXPECTED CHANGE 2	NOT AT ALL	MINIMALLY	MODERATELY	CONSIDERABLY
EXPECTED CHANGE 3	NOT AT ALL	MINIMALLY	MODERATELY	CONSIDERABLY



Before hearing the lesson and the questions, how motivated were you to: circle answer)

Learning

via

VTC

EXPECTED CHANGE 1	NOT AT ALL	MINIMALLY	MODERATELY	CONSIDERABLY
EXPECTED CHANGE 2	NOT AT ALL	MINIMALLY	MODERATELY	CONSIDERABLY
EXPECTED CHANGE.3	NOT AT ALL	MINIMALLY	MODERATELY	CONSIDERABLY

Were you provided with **enough** information to: (circle answer)

Learning

via

VTC

EXPECTED CHANGE 1	YES	NOT REALLY
EXPECTED CHANGE 2	YES	NOT REALLY
EXPECTED CHANGE 3	YES	NOT REALLY

Resources

Flagg, B. N. (1990) *Formative Evaluation for Educational Technologies*. Hillsdale, N.J.: Laurence Erlbaum Associates, Pub.

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Kiernan, N. E. (2001). Success of a Delivery Method: Tipsheet #17, University Park, PA: Penn State Cooperative Extension. Available at: <http://www.extension.psu.edu/evaluation/pdf/TS17.pdf>

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For further information about the program or evaluation, please contact Sharon McDonald (slm25@psu.edu).

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