Northern NY Agricultural Development Program
2015 Project Report

Reaching the Younger Farmer Effectively: Developing Learning Sessions in Technology Integration For Older Agricultural Educators

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Collaborator(s):
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Cooperating Producers:
Survey data from 32 farmers under 40 years old in Jefferson, Lewis, St. Lawrence, Franklin, Essex and Clinton Counties were taken as part of the project. The names of cooperating producers will be kept confidential for this project.

Background:
The average age of the US farmer is 57 years old, the average age of Cornell Cooperative Extension (CCE) agricultural educators is 54. It is reasonable to assume that many educators supporting tech-savvy younger farmers as they move into agricultural careers may have challenges keeping up with the constantly-changing communication technologies.

To help the CCE agricultural educators (average age 54) meet the high-tech learning needs of the younger farmers (under 35 years of age), the CCE initiated a project called *Reaching the Younger Farmer Effectively*. In this project, the CCE cooperated with a Syracuse University instructional design (ID) team to design and develop a learning session, which will help agricultural educators improve their skills of using educational technologies to narrow the gap mentioned above.

Methods:
During the summer of 2015 two surveys: one survey to investigate agricultural educators' preferences in educational technologies and one survey to investigate younger farmers'

preferences, were conducted before designing the learning program. Surveys were administered by email.

The surveys provided effective data for helping the ID team to understand the context of what was needed to bring the preferences and skill sets closer.

Furthermore, the ID team assigned a team member to visit CCE offices and conduct in-person interviews to better understand the context in which educators operate. The data from the visits were analyzed and used to develop the instructional program.

According to the data analyses, five topics on learning technologies were included in the learning session. The five topics were:

- website development
- Twitter
- PowerPoint
- conferencing tools, and
- infographics.

These topics were highly related to the technologies that younger farmers preferred to use and which CCE agricultural educators lacked the skills to use.

Website development, PowerPoint, and conferencing tools, as main topics, were introduced in the learning session, since the surveys indicated younger farmers used the three tools frequently in their learning while CCE agricultural educators did not use them in educational practices or had difficulties in using them. Twitter and infographics, as sub-topics were also introduced, because they were related to how to develop better blogs and PowerPoint slides in educational practices.

Depending on the professional knowledge on instructional design, the ID team designed five sections to help the agricultural educators learn the educational technologies. The five sections were:

1) overview of how educational technologies work
2) introduction of each participant's questions in using educational technologies
3) sharing data from the surveys
4) introducing tips on using web conferencing tools and infographics, and
5) hands-on and minds-on teaching on website and PowerPoint (Appendix A).

The learning session was implemented in two days (same instructional content on each day but for different groups of agricultural educators). Participants were voluntary agricultural educators from the six NNY counties. An evaluation survey was disseminated after each session to gather feedback from agricultural educators.

Results and Discussion:

The formal online evaluation survey was completed at the end of each learning session. The participants answered a series of rating questions about whether the learning session helped them improve skills in educational technologies. The scale was 1-Strongly

disagree, 2-Disagree, 3-Neither agree or disagree, 4-Agree, and 5-Strongly Agree. One question was developed to query their interest in additional professional development for educational technology topics. Participants checked the topics, which they were willing to develop in the future. In the final part of the evaluation, several open-ended questions asked participants to comment on the most useful and least useful parts of the learning session and to add other comments they wanted to share.

Rated questions:
Overall, the average ratings on the questions ranged from 3.44 (between categories 3-neither agree nor disagree to 4-agree) to 4.93 (between categories 4-agree and 5-strongly agree).

For the session evaluation questions, the areas of strongest agreement (4.5 and above) were in the areas of (1) session objectives were clear, 4.93; (2) Animated model on how technology works was helpful, 4.53; and (17) The activities today will be useful to me as an Ag educator, 4.93 (Appendix B).

For the questions of additional interests in educational technologies, the topics that garnered the most interest were (B) website/Blog development - 63%, (G) infographics - 63%, (E) Video use and development – 63%, and (C) Twitter and other social media - 56% (Appendix B).

The responses to the open-ended questions suggest two themes:

- agricultural educators have different levels of educational technology skills, knowledge, and preferences. They learned different skills from the learning session due to their different levels, and
- most of them desired additional professional development in educational technologies. Through additional professional development they hoped they would enhance the capabilities to meet the goals of serving the younger farmers.

Conclusions:

It was suspected that younger farmers may be more tech savvy and desire to use technologies to meet their communication and education needs. The data from the farmer survey conducted by this project indicated that younger farmers preferred to use multiple digital tools (video websites, conference tools, social network software, etc.) in their agricultural development and learning.

However, the data from the agricultural educator survey conducted by this project indicated that CCE agricultural educators lacked knowledge and skills for using the digital tools preferred by young farmers. For example, many younger farmers preferred to use blog/website as a learning tool, while most of agricultural educators admitted that they did not use blog/website in their teaching or they did not know how to use it.

Hence, there was a significant gap between what educational technologies the current CCE older agricultural educators are competent with and what the younger farmers prefer to use.

The rated evaluation evidence suggests that the agricultural educators agreed that:

- the learning session was well designed and successfully implemented
- the instructional activities were helpful, engaging and valuable, and
- the learning session helped them in developing skills that will be helpful to support educational practices.

The evaluation report shows that the group of agricultural educators is varied in their interest and needs in educational technologies, but are on whole interested in additional professional development on educational topics.

The younger farmers can get better learning experiences with agricultural educators getting new high-tech skills of educational technologies from this learning session. The gap between what educational technologies the current CCE older agricultural educators are competent with and what the younger farmers prefer to use can be narrowed.

CCE agricultural educators improved their skills and knowledge of using website, blog, conferencing tools, Twitter and infographics in educational practices. That means younger farmers may become more engaged in agricultural educators' instructions, since agricultural educators may use presentations enhanced by PowerPoint and infographics. That also means younger farmers may have better communications with agricultural educators, since agricultural educators may start to use what the younger farmers were using in learning, such as Twitter, website and conferencing tools. To further narrow the gap, more learning sessions with new topics of educational technology need to be developed in the future.

Outreach:

There exist possibilities of developing more professional development in educational technologies to meet the needs of agricultural educators.

Acknowledgements:

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For More Information:

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References

Koszalka, T., & Yang, T., 2015. Evaluation Report for CCE Agricultural Educator Workshop: Reaching the Younger Farmer

Appendix A.

NNY CCE Agricultural Educator Workshop
Agenda

Date: MM/DD/YYYY **Time:** 9:00 to 4:00 (refreshments at 8:30am)

Requirements: Please bring…

- Laptop (with internet accessible and PowerPoint software) and your smartphone/cell phone
- Materials (e.g., agenda, presentation, handouts, etc.) from a recent workshop or one that you are preparing for the near future

Instructional Goals: To provide you with opportunities to learn about instructional design principles and develop skills to using a variety of digital technologies that you may use to enhance your educational practices.

Expected Outcomes: At the end of this session you should be able to…

- Describe how a variety of digital technologies (e.g., websites, youtube, twitter, software) can be used to enhance your educational practices in support of young farmers
- Develop skills to create (or enhance) a website to support your educational practices
- Develop skills to enhance Powerpoint Presentations (e.g., interactivity, design, etc.)
- Develop a plan for developing, implementing, evaluating technology uses this year.

Estimated time	Agenda
8:30am	Refreshments and getting settled *Meeting everyone and preparing for session*
9:00 am – 9:30 am	Introduction to a model of educational technologies in educational practices and self-introduction. *Overview of different **types** of technologies and how technologies can enhance teaching and learning*
9:30 am – 10:00 am	Discussion of characteristics of young farmers and agricultural educators *Getting to know you and your thoughts about your audience*
10:00 am – 10:30 am	Effective uses of digital technologies in wired/non-wired environments *How do you currently use hard and soft technologies, some tips on hard and soft technology uses*
10:30 am – 12:00 pm	Websites to support instruction: A model and practice *An educational website… your turn to develop skills and build one*
12:00pm – 1:30 pm	**LUNCH**
1:30 pm – 2:00 pm	Sharing websites *Share your website and building experience… what do you think?*
2:00 pm – 3:00 pm	Powerful PowerPoint: A model and practice *Simple and powerful features to enhance presentations… your turn to develop skills to enhance a presentation*
3:00 pm – 3:30 pm	Sharing PowerPoints *Share your presentation … what do you think?*
3:30 pm – 4:00 pm	What's next: planning for technology use in the short term *What is your plan to use technology in your educational sessions before the end of the year? Planning for support, development, implementation, and evaluation*

NNY CCE in collaboration with Syracuse University – Instructional Design Development and Evaluation program. 2015

Appendix B.

Interest in additional topics for professional development in the future
Participants were asked to check which additional technology professional development topics would interest them in the future.

21	Interest in additional technology professional development	%	Num
A	PowerPoint slides	19%	3
B	website/blog development	63%	10
C	Twitter and other social media	56%	9
D	Effective online searching	25%	4
E	Video use and development	63%	10
F	Conference/online instruction	38%	6
G	Infographics development	63%	10
H	I am not interested in additional professional development	6%	1

Average scores recorded on session evaluation
level of agreement rated as *1-strongly disagree* to *5-strongly agree* in each of the areas below.

	Survey item (abbreviated)	Ave (1-st dis to 5-st agree)
1	Session objectives were clear	4.93
2	Animated model on how technology works was helpful	4.53
3	Discussion on characteristics of Ag educators and young farmers was helpful	4.20
4	Hints on tech uses was helpful	4.07
5	Demo on creating website was helpful	4.27
6	Instructions to develop website were clear/effective	4.07
7	Website template was good strategy	4.07
8	Session website helpful in creating my own resources/website	4.47
9	Website develop activity valuable to me	4.07
10	I will likely continue to work on my website	3.67
11	The Powerpoint demo was helpful	4.19
12	Hands-on Powerpoint session provided sufficient practice	4.00
13	Overall Powerpoint session was a value to me	3.94
14	I will likely continue to enhance my Powerpoints with skills I learned today	4.31
15	I feel more confident using technology to support my practices	4.06
16	I have developed new skills today	4.13
17	The activities today will be useful to me as an Ag educator	4.93
18	I will use these new skills in my edu practices over the next two months	3.44
19	I know what I will do next using technology	4.20
20	I will need one-on-one technology help over the next two months	4.38
22	Hands-on sessions gave me sufficient practice and feedback	4.20

Notes: These data represent average scores across two workshops. There were 15 total participants. Two participant in the sessions were self-described as advanced technology users, teaches technology skills and resources; others had various levels of technology skills. Question 21 is summarized in a separate table 2.