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Using Hybrid Learning to Improve Educational Programs for Small-Acreage Farmers

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Using Hybrid Learning to Improve Educational Programs for Small-Acreage Farmers

Abstract

A whole-farm planning course in Idaho has evolved from an in-person course offered by a single instructor in one location to an online course to a hybrid learning course that combines online learning with in-person and webinar components offered simultaneously at multiple sites across the state. Evaluation data suggest that all three approaches have been effective at increasing knowledge and skills. The hybrid learning model allows for using technology to leverage faculty and farmer expertise and increase participant numbers while maintaining in-person interaction and experiential learning. Findings support the concept of the hybrid learning model as a tool for Extension audiences in rural states.

Keywords: [small-farms education](#), [online courses](#), [experiential learning](#), [webinar](#), [blended learning](#)

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Introduction

The Cultivating Success program offers educational programming to provide beginning and existing farmers with the planning and decision-making tools necessary to develop and manage a sustainable small-acreage farm. The program was developed in 2000 with funding from the W.K. Kellogg Foundation. Through collaboration by the University of Idaho (UI), Washington State University, and Rural Roots, Inc., Cultivating Success has served the educational needs of over 3,500 adult learners across Idaho and Washington. Although each state offers Cultivating Success programming, course delivery modes differ between the states. One Cultivating Success signature offering is a whole-farm planning (WFP) course, "Starting Your Sustainable Small Farm" (also called "Sustainable Small Farming and Ranching"). Herein we discuss the WFP course's evolution in Idaho from an in-person course offered by a single instructor in one location to a hybrid learning course that combines online self-directed learning with in-person and webinar components offered simultaneously at multiple sites across the state.

The term *hybrid learning* (also *blended learning*) is used to describe educational programs offered through a combination of in-person and online delivery modes (Picciano & Dziuban, 2007). The potential for hybrid learning to meet the needs of academic students in higher education was well established by 2002 (Garrison & Kanuka, 2004). By 2012, an estimated 79% of public institutions of higher education were offering hybrid

courses, and the model also was being used in the private sector (McGee & Reis, 2012).

Diem, Hino, Martin, and Meisenbach (2011) found that while demand for online education is growing, Extension is not keeping up with the required technologies and innovation. They argued that adopting online technology for educational program delivery to reach new audiences is vital to "the future viability of the Extension system" ("Summary and Conclusions" section, para. 1). Hino and Kahn (2016) highlighted the role hybrid learning can play in Extension program delivery and emphasized the importance of developing a literature of best practices for the use of hybrid learning in Extension.

While the literature on hybrid learning in Extension is still limited, many in Extension have begun to embrace technology to reach new audiences through a variety of hybrid learning programs. In 2013, University of Minnesota Extension pilot tested a public health leadership academy using the hybrid model and found that learning for students in the hybrid leadership academy was comparable to learning for students in the face-to-face academies (Norman, 2013). Additionally, the leadership academy experienced increased enrollment in the hybrid version due to reductions in program duration and cost (Norman, 2013). In 2014, University of Florida converted a training for conservation land managers from a face-to-face course to a series of hybrid workshops (Friedl, Ober, Stein, & Andreu, 2015). Surveys indicated that the hybrid format was more effective in providing participants with the benefits they most desired from workshop participation (Friedl et al., 2015). Washington State University Extension has developed a hybrid conference delivery format that connects multiple sites across the state through an interactive webinar while providing in-person discussions and activities led by local facilitators (Hansen, Babine, & Viebrock, 2015). This format allows rural communities to engage with national experts and develop important local and regional networks. Silkwood, Young, Dolecheck, Hamilton, and Kinder (2017) demonstrated the ability of Extension to use the hybrid model to connect multiple locations across Idaho and reach rural audiences of all ages.

This article contributes to the literature on hybrid learning in Extension in that we describe the evolution of an Extension-led WFP course from a traditional model to a hybrid model and the rationale behind that evolution; compare the implementation strategies, reach, and select learning outcomes of the traditional, online, and hybrid versions of the course; and identify effective components of the hybrid course.

Evolution of the WFP Course

From 2000 to 2010, the Cultivating Success WFP course was offered as an 8- to 12-week in-person series of evening classes that emphasized experiential learning through farm tours and face-to-face interaction with farmer mentors and agricultural service providers. Evaluations showed that the course was successful at increasing beginning farmers' knowledge and skills and establishing beginning farmer support networks. However, in Idaho, a state with approximately one third of its residents living in 32 nonmetropolitan, rural counties (Dearien & Salant, 2015), there were significant barriers to participation, including long travel distances, adverse winter travel, work and familial commitments, and the limited number of offerings around the state. To address these challenges, the Cultivating Success Idaho team, of which our lead author was a member, redesigned the course in 2011 and offered it as a self-paced, online course using UI's Moodle platform for sharing presentations, readings, and assignments and conducting weekly live chats between students and course instructors.

End-of-course evaluations for the 2011 online course indicated slightly lower levels of knowledge gain and similar percentages of participants' developing a whole-farm plan as compared to outcomes of the 2010 in-

person courses. The online discussion forum, intended to foster participant interaction with experienced farmers and instructors, was rated low in the evaluations, whereas the instructional material was rated highly (Williams, Agenbroad, & DePhelps, 2012). After comparing the learning outcomes of both delivery modes, the Cultivating Success Idaho team began exploring ways to increase in-person interaction and the experiential learning aspects of the course as well as the number of locations where it was offered.

Washington State University Extension's design of the 2014 Western Women in Agriculture Conference, which involved the use of live webinars interspersed with facilitated in-person group discussion and assignments to connect multiple conference locations (Hansen et al., 2015), inspired reformatting of the WFP course into a similar hybrid model. With the newly inspired format and funding from the U.S. Department of Agriculture National Institute of Food and Agriculture Beginning Farmer and Rancher Development Program, the Idaho Cultivating Success team created a hybrid course wherein online aspects could make it possible to reach a greater number of students with a high-quality, standardized curriculum, and the in-person components could facilitate experiential learning and decentralized engagement with local farmers, educators, and other professionals.

Redesigning the WFP course began with a team of 23 UI Extension educators and staff, Rural Roots staff, experienced farmers, and a nonprofit technical advisor reviewing and updating the WFP course materials. The course curriculum was repackaged as a monthly series of three full-day in-person workshops to be offered simultaneously at nine sites across Idaho connected by live presentations using GoToWebinar. The Extension Moodle platform was used for delivering course assignments, educational materials, and postwebinar recordings and providing an online, asynchronous discussion forum.

Practice sessions and contingency plans resulted in a well-orchestrated program. During the workshops, two sites—one urban and one rural—lost connectivity. Local site facilitators stayed on the workshop schedule while connections were reestablished. The team recorded the webinar presentations using the central computer, posted them on YouTube, and linked the videos to the Moodle classroom for optional later viewing by course participants. As part of the collaborative effort, each Cultivating Success team member learned how to design and implement a hybrid course.

Methods

We compared design components and implementation strategies across the three course delivery modes, and we evaluated differences in short-term outcomes in students' knowledge and skill gains by comparing results from end-of-course surveys. Students in the 2010 in-person WFP course completed paper surveys during the last class meetings, and students in the 2011 online and 2016 hybrid versions of the WFP course completed surveys online via SurveyMonkey web-based survey software. Twenty out of 24 students (83%) in the 2010 in-person course, 40 out of 65 students (62%) in the 2011 online course, and 57 out of 141 students (41%) in the 2016 hybrid course completed the survey. The course content and corresponding survey content and question wording varied somewhat across course models. However, most of the course content was the same, and several evaluation questions were consistently asked. Herein, we share the results of evaluation questions that were consistent across delivery modes. Most questions were closed ended, asking respondents to rate knowledge gain and preparedness outcomes on a scale from 1 to 5.

Findings and Discussion

All three course designs incorporated presentations by Extension and other agricultural service providers and experienced farmers. Courses also allowed for discussion among instructors and students; however, the online course limited discussion to online forums and chats. The 2016 hybrid course incorporated all the components of the in-person and online course designs except the printed materials and the notebook on CD. Table 1 compares the course components included in the three course types.

Table 1.
Comparison of Course Design Components by Course Type

Course component	In-person (2010)	Online (2011)	Hybrid (2016)
Presentations by Extension and other agricultural service providers	X	X	X
Presentations by experienced farmers	X	X	X
Q&A immediately following presentations	X		X
In-person discussion between instructors and students	X		X
Online discussion forums and chats		X	X
In-class assignments and exercises	X		X
Online assignments		X	X
Printed notebook with readings, assignments, and resources	X		
Notebook available on CD		X	
Moodle course platform to access all course materials		X	X
Recordings of presentations available for viewing			X
Farm tours offered in addition to scheduled class time	X		X
Assignments requiring in-person interviews and field work outside of class time	X	X	X
Ability to interact with instructors directly via email	X	X	X

The newly designed hybrid learning model allowed for offering the WFP course at nine sites throughout Idaho with live webinar presentations and facilitating the in-class curriculum for 141 participants. The hybrid course had the benefit of reaching more beginning farmers throughout the state: 117 more than the in-person course and 76 more than the online course.

In comparison to the 2010 in-person course, the 2016 hybrid course rated lower in all measures except preparedness to evaluate farm, market, human, and financial resources. When compared to the 2011 online course, however, self-reported knowledge gains and preparedness levels were all higher for participants in the 2016 hybrid course. Differences in learning outcomes may have been influenced by changes in instructors and course content. However, the ratings across courses were similar, indicating a consistent learning experience for participants. Table 2 shows evaluation survey results by course delivery mode.

Table 2.

Comparison of Whole-Farm Planning Course Learning Targets by Delivery Mode

Evaluation item	In-person (2010)			Online (2011)			Hybrid (2016)		
	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>
Knowledge gain ^a									
Techniques for developing farm goals	4.55	0.59	20	4.08	0.98	40	4.09	0.96	57
Ways to improve farm profitability	3.85	1.06	20	3.43	1.01	40	3.60	1.07	57
Components of a whole-farm plan	4.65	0.48	20	4.18	0.97	40	4.21	0.87	57
Preparedness ^b									
Evaluate your farm, market, human, and financial resources	3.80	0.81	20	3.65	1.18	40	4.25	0.82	57
Assess the feasibility of a farm/ranch enterprise	3.95	0.80	20	3.63	1.19	40	3.91	0.92	57

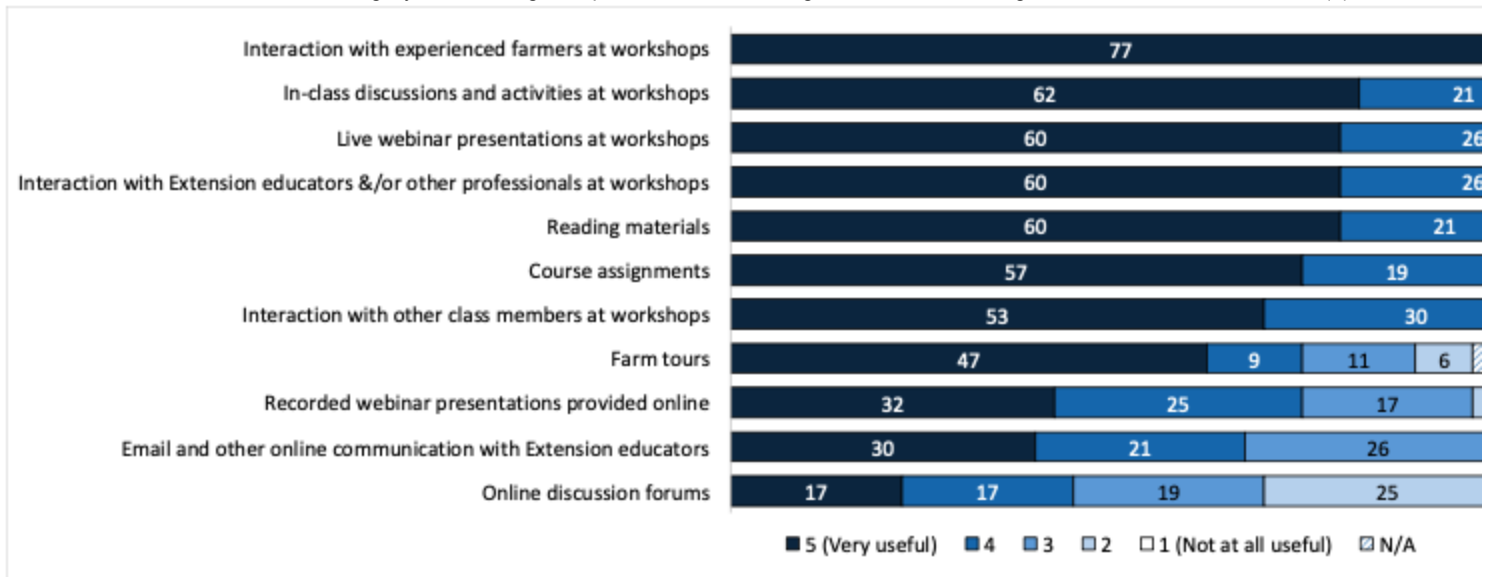
^aThe knowledge gain scale was from 1 (*no increase*) to 5 (*great increase*). ^bThe preparedness scale was from 1 (*not prepared*) to 5 (*very prepared*).

The majority of survey respondents from all courses indicated having taken action toward creating a whole-farm plan. Eighty-nine percent of the 2010 in-person course participants had developed or improved a whole-farm plan as had 86% of the 2011 online course participants. As well, 85% of the 2016 hybrid course participants said they had started or completed a whole-farm plan.

The 2016 hybrid WFP course evaluation asked participants to rate, on a scale from 1 to 5, the usefulness of the various course components at helping them learn the course content. While most components rated highly on average, the course components with the highest average ratings were all in-person aspects of the hybrid course. The course components with the lowest average ratings were all online aspects of the course. These results suggest that the hybrid learning model maintains the most important components of the in-person course (e.g., interactions with experienced farmers and educators) and indicate the limitations of the online-only version. Figure 1 shows how respondents rated the usefulness of each hybrid course component at helping them learn the course content.

Figure 1.

Hybrid Whole-Farm Planning Course Participants' Ratings of the Usefulness of Course Components for Helping Them Learn



Note: Values shown are percentages; *n* = 53.

Conclusions

The hybrid learning model adopted by the Cultivating Success Idaho team involved sharing educational content via a series of live webinars at designated sites with facilitated in-person activities and face-to-face interactions, supplemented with farm tours and web-based reading materials and assignments. This format allowed for increasing the number of participants and locations where the course was offered while maintaining in-person interactions and experiential learning. Additionally, the decision to offer the hybrid course led to building a stronger team of Extension educators and developing a hybrid course delivery model that is now being used for other UI Extension programs.

The hybrid learning model also allowed for the development of relationships at the local level and shared learning across all course locations, addressing the weaknesses of the other two course delivery modes. The increased number of course participants, connected through a common learning experience, resulted in a larger network of beginning farmers across the state.

Overall, developing and offering the hybrid course led to valuable team building and professional development, the ability to reach more students, reduced costs stemming from the capability of connecting various classrooms through GoToWebinar, and greater impacts through statewide programming. Our study supports the hybrid learning model as a tool for Extension audiences in rural states. Extension educators in other states can use this model and access small-farm content developed through our program and others at the U.S. Department of Agriculture website www.farmanswers.org.

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