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## Designing Social-Ecological Programs to Support Extension Participants in Civic Engagement

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### Cover Page Footnote

The EmpowerU course pilot was funded by the Renewable Resources Extension Act (RREA).

# Designing Social-Ecological Programs to Support Extension Participants in Civic Engagement

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**Abstract.** To address a need to support volunteer and citizen engagement with decision-makers in addressing social-ecological challenges, we designed and tested a “flipped classroom” training to teach civic engagement processes in the context of invasive species management. We pilot-tested the curriculum in seven states. Using results from in-course and delayed surveys, we demonstrate that participants increased their capabilities for engaging decision-makers and took civic engagement actions related to invasive species issues. Although participant recruitment and retention were lower than expected, the overall results suggest that the training approach is an effective design for satisfying participant needs and achieving learning outcomes.

## INTRODUCTION

Addressing the growing complexity of environmental challenges requires collaborative civic engagement in developing community-focused innovation (e.g., Cunningham et al., 2013; Pretty, 2018). To address these challenges, Extension programs need approaches that acknowledge social and ecological systems as interdependent and coevolving; these programs must shift toward models that involve “social learning/adaptive management” and a “more collaborative approach to natural resources management” (Warren, 2018, paras. 7–8). Kelsey (2002) describes the nature and purpose of civic engagement in these types of programs: “Extension educators should help to create opportunities for the immersion experiences of participants by identifying situations where they can work with community members in solving problems” (para. 12). Krasny and Tidball (2010) suggest that these programs should involve “social or adaptive learning that occurs through engaging in [environmental] restoration” (para. 6) that serves to “foster social attributes of resilient social-ecological systems, including volunteer engagement and social connectedness” (Abstract).

This information leaves us with a critical question: How can Extension faculty effectively design social-ecological programs for Extension participants? Radke and Chazdon (2015) have broadly defined a structured Extension model to support civic engagement in making collective decisions,

environmental or otherwise. Hanks et al. (2019) illustrates that online tools can be used to support collaborative conservation planning. Adusumilli (2019) describes how initiatives like the Natural Resources Conservation Service Regional Conservation Partnership Program can help different community groups engage in collaborative conservation action. Kallestad et al. (2018) described the design and impact of one cohort model used to help water-quality professionals engage with the public. However, there is still a lack of research on Extension program designs that effectively integrate these kinds of theories, models, and tools to support citizen participants in civic engagement.

To address this need, we describe the results of an effort to develop and nationally pilot a training course—called EmpowerU—to help Extension volunteers and other interested community members engage with local decision makers. We provide a brief overview of the program’s purpose and design and then discuss how the program satisfied participant needs and desires, accomplished key learning outcomes, and achieved the goal of stimulating civic engagement.

## PROGRAM BACKGROUND AND PURPOSE

Invasive species cost the United States \$120 billion each year (Pimentel et al., 2004) for management and lost environmental services. Extension plays an important role in building public awareness about invasive species, training and sup-

porting “first detectors” who help conservation professionals find and manage infestations quickly, supporting lake associations and other groups in deciding best treatment and monitoring strategies, and organizing members of the public who volunteer to aid in controlling invasive species. The University of Minnesota (UMN) Extension has several volunteer and landowner programs that focus on invasive species management. Some Minnesota volunteers stated that they were frustrated because they did not know how to engage decision makers in issues related to the management of invasive species.

To address this frustration, UMN Extension educators focused on natural resources and leadership and civic engagement came together to design a flipped-classroom training (Larkin et al., 2018) to empower natural resources volunteers and landowners to engage decision makers in issues related to invasive species. They called the training EmpowerU. Using grant funding from the Renewable Resources Extension Act, UMN Extension recruited partners from six other states (FL, GA, MI, OR, VA, WI) to inform the design of, nationally pilot, and evaluate this new curriculum in over sixteen different workshops for over 100 volunteers. The group later revised the training to apply more generally to natural resources issues.

## PROGRAM DESIGN AND DEVELOPMENT

UMN Extension educators worked collaboratively to develop the first draft of EmpowerU training curricula. During this initial development, it became clear that there are pre-existing programs within and outside of Extension that aim to help elected officials and decision makers better engage community members. However, there were few Extension curricula focused on enabling community members and volunteers to engage decision makers. The team realized that this reversed perspective would require them to develop a completely new curriculum; they adapted Radke and Chazdon's (2015) Extension Civic Engagement Model to better fit the context of Extension volunteers and used this adapted model as a framework to define targeted learning outcomes and teaching strategies focused on invasive species (Table 1). The educators decided to use normative messaging based on Allcott's (2011) research positively linking the use of social norms messaging to substantial changes in behavior.

EmpowerU incorporated a flipped-classroom training design that Extension organizations could easily implement across the nation. According to Knowles (1984), there are four general principles that should guide the design and delivery of adult education for audiences like Extension volunteers. The flipped-classroom approach (Flipped Learning Network, 2014) is an exemplary framework that addresses these strategies by allowing for the design of flexible learning environments, creating a participant-centered learning

culture, prioritizing dialogue and practice during in-person meetings, and positioning instructors and experts to observe and provide relevant and enriching feedback. The literature suggests that flipped-classroom approaches could be one way to shift Extension programming toward community-centric preferences (Strong et al., 2015). The literature documents use of the flipped-classroom approach in a variety of Extension staff development trainings (Burns & Schroeder, 2014; Franz et al., 2014), training for youth livestock producers (Weitzenkamp et al., 2015), and training for volunteer participants in invasive species management (Larkin et al., 2018). The EmpowerU flipped-classroom design encompassed an initial asynchronous online session to learn about the process and skills for civic engagement followed by a synchronous in-person session to discuss and practice the learned process and skills, both described in the following paragraphs.

The online training session contained eight 1-hour modules. Instructions suggested that participants complete two modules weekly for the 4 weeks before the in-person session. The modules are titled:

- Module 1: Engagement—What, Who and Why?;
- Module 2: Start with Reliable Information;
- Module 3: Who can help solve your issue?;
- Module 4: Influence, Power & Persuasion;
- Module 5: Listening & Questions;
- Module 6: Framing an Issue;
- Module 7: How will you engage?; and
- Module 8: Learning from others.

The in-person session occurred on a single day, and all participants in the cohort participated. The session included 4–6 hours of interactive instruction and small group learning activities to help participants deepen their understanding of the skills introduced during the online session—framing, listening, and questioning—, review their draft engagement plan with other participants to get feedback, practice speaking in front of a group or with another individual about an issue of concern, and share their next steps.

UMN Extension educators facilitated the first training. At least one representative from each partnering state participated. Additional participants included at least one representative of each of several core target audiences, including Minnesota Master Naturalist and Aquatic Invasive Species Detector volunteers, woodland owners, and local natural resource professionals. The facilitators instructed all participants to complete the asynchronous online session before attending the in-person session. The day after the in-person session, the state partners met to discuss potential improvements to the curriculum. UMN Extension educators received the feedback and revised the online and in-person training

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**Table 1.** Alignment of the Civic Engagement Model Phases with EmpowerU Learning Outcomes

| Phases of Extension<br>Civic Engagement Model  | EmpowerU Course Modules  | EmpowerU Learning Outcomes  |
|--|--|---|
| <b>Prepare.</b> Understand the context in which the issue will be addressed and assess community readiness | <ul style="list-style-type: none"> <li>Understanding the <i>what?</i>, <i>who?</i>, and <i>why?</i> of civic engagement</li> <li>Assessing personal goals</li> </ul> | <ul style="list-style-type: none"> <li>Describe what civic engagement is and why it is important.</li> <li>Recognize the key elements of successful engagement.</li> </ul>  |
| <b>Inquire and Analyze.</b> Explore, clarify, and better understand the issue                              | <ul style="list-style-type: none"> <li>Finding good information</li> <li>Identifying important decision makers</li> <li>Framing the issue</li> </ul>                 | <ul style="list-style-type: none"> <li>Assess the credibility of different information sources.</li> <li>Determine what information to share with decision makers.</li> <li>Identify who you might contact regarding different invasive species issues.</li> <li>Explain why framing messages about invasive species is important.</li> <li>Know how to frame invasive species issues in positive ways.</li> </ul>  |
| <b>Synthesize.</b> Align the clarified issue with different options for action                             | <ul style="list-style-type: none"> <li>Understanding influence, power and persuasion</li> <li>Actively listening</li> <li>Asking good questions</li> </ul>           | <ul style="list-style-type: none"> <li>Describe the different types of power used to influence others.</li> <li>Recognize sources of power useful for engaging decision makers about invasive species.</li> <li>Describe techniques you can use to persuade decision makers about invasive species.</li> <li>Explain some strategies you can use to be a powerful listener when engaging decision makers.</li> <li>Know how to craft productive questions when engaging decision makers.</li> </ul> |
| <b>Act Together.</b> Create and nurture trusting relationships to take collective action                   | <ul style="list-style-type: none"> <li>Deciding how and when to engage with decision makers</li> <li>Sharing and learning from others</li> </ul>                     | <ul style="list-style-type: none"> <li>Identify different strategies to engage decision makers about invasive species.</li> <li>Explain tips for and challenges of using different strategies to engage decision makers.</li> <li>Select a good strategy to engage decision makers about invasive species.</li> <li>Develop a plan to engage decision makers about invasive species.</li> </ul>   |

*Note.* The data in column 1 are from Radke & Chazdon (2015).

materials; notable improvements included shortening some of the content depth and online module lengths.

Extension distributed the revised curriculum to each partner, who conducted EmpowerU courses in their respective states. After 16 courses were complete, Extension solicited additional feedback for further refinement. Surprisingly, the only feedback received was the request to create a parallel curriculum that was more generally related to natural resources, specifically water and fire management issues. Extension created a natural resources curriculum, and both the invasive species and natural resources curricula are avail-

able for free upon request from the Extension lead author, Angela Gupta.

## RESULTS

Minnesota and the six state partners facilitated 16 courses (two to four per state) during the 2-year program pilot. A total of 270 participants enrolled, 157 participants completed the online sessions, and 152 participants completed the entire course—both the online and in-person sessions. Over half of the participants (50%-65%, varying by state)

started the online session but did not complete the entire course. Approximately 70% of all the participants nationwide were female. Facilitators requested feedback from participants at multiple stages throughout the training. Overall, results demonstrated that participants were satisfied with the EmpowerU course; surveys indicated that the information was valuable and the lengths of the sessions were appropriate.

At the conclusion of the online session for each pilot course, facilitators distributed an electronic survey to participants. They received 105 responses (67% response rate) from participants who rated the session as “moderately” to “extremely satisfying” on a 6-point scale ( $M = 5.17$ ) and “just about the right length” on a 5-point scale ( $M = 2.12$ ). Participants ( $n = 87$ ; 55% response rate) who answered a question about their perceived capabilities after completing the online session reported overall gains in all 15 intended outcomes (see Figure 1).

At the conclusion of each in-person session, facilitators distributed a paper survey to each participant ( $n=152$ ; 100% response rate). Participants rated the session as “moderately” to “extremely satisfying” on a four-point scale ( $M = 3.77$ ) and “just about the right length” on a five-point scale ( $M = 2.01$ ). Participants ( $n = 129$ , 85% response rate) “agreed” to “strongly agreed” on a five-point scale that they had achieved a deeper understanding about how to engage decision makers ( $M = 4.49$ ) and situations in which they planned to use what they learned in the course ( $M = 4.50$ ); they further intended to follow the course steps to prepare for civic engagement ( $M = 4.52$ ). These participants also reported to be “a little” to “much more confident” about preparing for civic engagement after they completed the in-person session (see Figure 2).

Between six months and one year after completing the entire EmpowerU course, participants were invited to take an online follow-up survey to share their progress on executing the engagement plans they developed during the course. Responses from 43 participants (28% response rate) indicated many had at least started to identify an appropriate decision maker to contact, select an effective strategy, and summarize reputable information (Figure 3).

## LESSONS LEARNED

The results of the EmpowerU pilot helped UMN Extension Educators understand two important aspects of the program: a) some of the challenges that may warrant continued research and experimentation and b) some of the prerequisites necessary to provide an effective training course of this type. We learned lessons related to increasing and sustaining participation, defining prerequisites, and expanding diversity.

### INCREASING PARTICIPATION

The results of the pilot suggest a need to refine recruitment strategies. Initial requests for this type of course from volun-

teers and interest from state partners who applied to deliver EmpowerU suggested enthusiasm for the course. Nevertheless, Minnesota and some state partners had difficulty recruiting large groups of course participants, even when employing various promotional messages and positive participant testimonials. Some partners concluded that this kind of course may never draw huge numbers because typical Extension volunteers and landowners may not be inclined to participate in this kind of advocacy. We suggest targeting recruitment efforts towards participants with passion and interest in communication and civic engagement.

### SUSTAINING PARTICIPATION

The results from the EmpowerU course resonate with a previously documented trend of reduced retention in flipped-classroom courses, in which participants drop out before completing the online components. Emphasizing the course expectations, including time required to complete online modules, development of the engagement plan, and goals of the in-person session, may assist in retaining participants through the end of the course.

### DEFINING PREREQUISITES

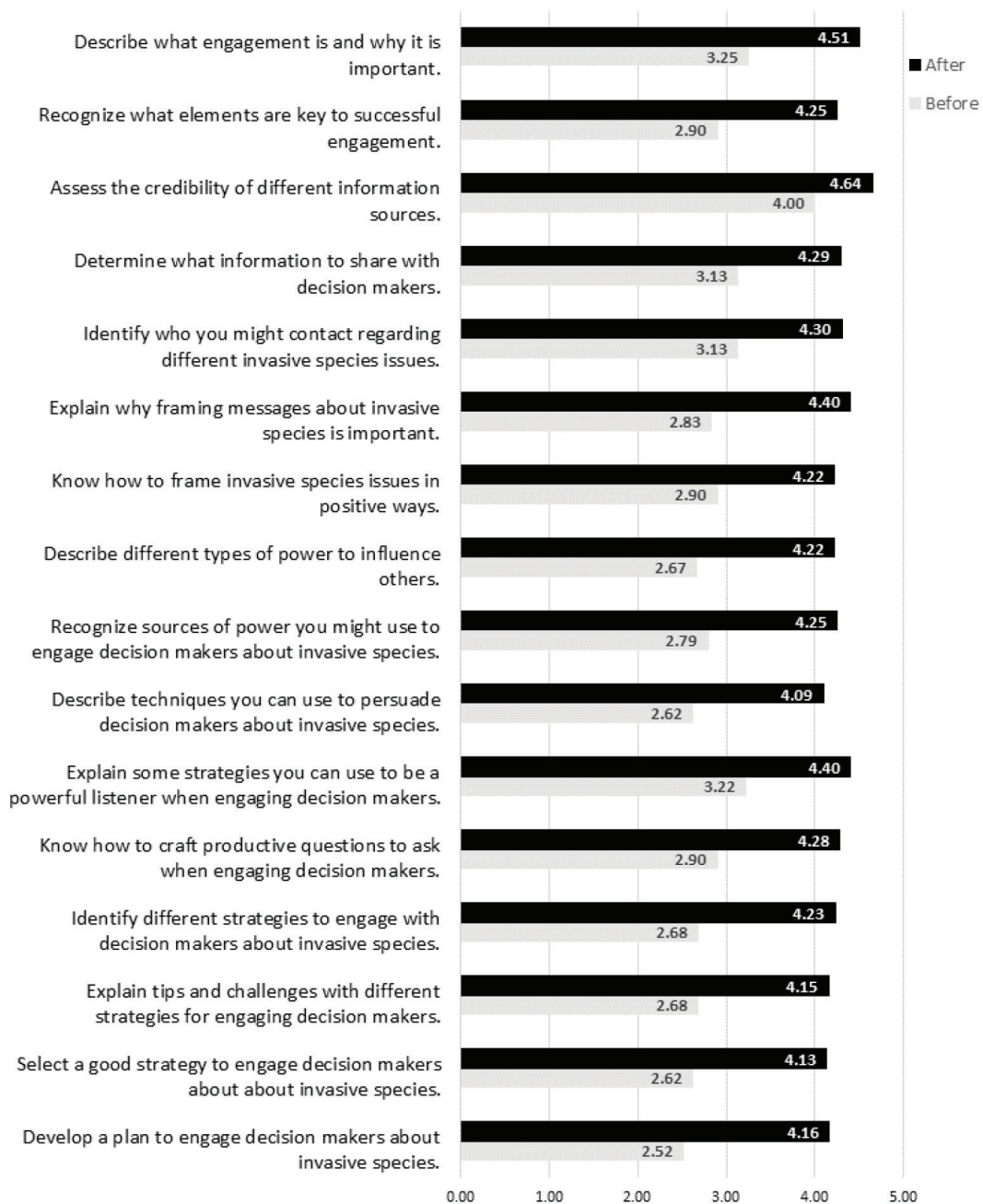
Technological capacity and interest in a specific engagement issue, respectively, were prerequisites to providing and participating in the course. One state partner dropped out from the pilot, and others expressed some concern about their abilities to carry through with offering EmpowerU pilot courses in their state. These concerns arose from limited access to an online learning platform, such as Canvas in Minnesota. Participants also need reliable internet and computer access to complete the online course and draft their written engagement plan. Furthermore, the development of the engagement plan is much more achievable if participants have existing interest and a basic knowledge of an environmental issue on which they wish to engage—at least hypothetically—with a decision maker. Future variations of this course could include options that do not require continuous online access.

### EXPANDING DIVERSITY

Extension educators in each state advertised the courses to their respective Extension and landowner audiences, but participant groups in most states were predominantly female. Although some existing Extension programs (e.g., Master Naturalists) are majority female, this finding potentially indicates that there were course attributes that particularly resonated with women. We are interested in exploring further research and program design experimentation to better understand, recruit, and serve a diverse group of participants.



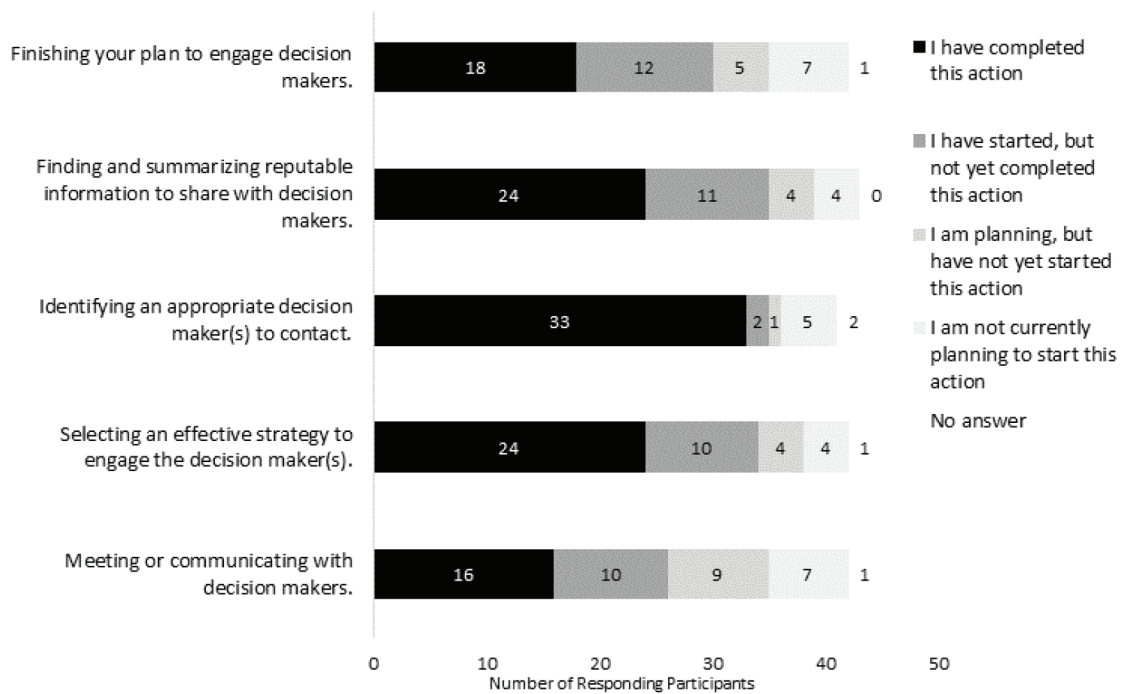
## Programs to Support Participation in Civic Engagement



**Figure 1.** Comparison of participants' perceived capabilities before and after completion of online session. Textual content matches what was presented to respondents in the evaluation survey.



**Figure 2.** Participants' perceived confidence with preparing for and engaging decision makers after in-person session. Textual content matches what was presented to respondents in the evaluation survey



**Figure 3.** Participants reports of completing civic engagement steps six months to one year after EmpowerU. Textual content matches what was presented to respondents in the evaluation survey.



## CONCLUSION

The pilot revealed that the flipped-classroom EmpowerU training is an effective design to support civic engagement that addresses social-ecological challenges. Courses in seven states provided volunteers with increased capabilities for engaging decision makers, who subsequently took action on natural resources and invasive species issues. Participants reported the course as being extremely satisfying and worthwhile for learning and practicing civic engagement communication. We are optimistic that this innovative program will promote collaboration and social learning and stimulate civic engagement among Extension audiences.

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