

RESEARCH NOTE



Engaging adult R3 outdoor educational program design to strengthen participation in hunting and fishing

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ABSTRACT

Declining participation in hunting and fishing has been slowed by women who are learning numerous outdoor skills through recruitment, retention, and reactivation [R3] programs. R3 programs are hosted by state agencies, non-governmental organizations, and businesses that take a variety of approaches to develop participant skills and confidence. To understand how R3 program design influences hunting and fishing participation, we conducted 11 focus group interviews with 72 participants at women's R3 programs to identify program design components that women appreciate when learning to hunt and fish. Well-designed programs offered customized educational approaches to align with participants' needs, created a supportive environment to foster a sense of belonging, and streamlined participation through event logistics. Programs that incorporated these design components promoted skill development, boosted self-confidence, and helped participants build a supportive network to independently hunt and fish. Program leaders can apply these findings to bolster participation in hunting and fishing.

KEYWORDS

Hunting and fishing; outdoor educational programs; qualitative research; retention; women

Introduction

In the United States, wildlife and fisheries conservation is heavily dependent on hunting and fishing license sales (Duda et al., 2022). Thus, declines in participation rates in hunting and fishing sports have caused concern for state and federal wildlife and fisheries agencies. Yet women's participation may be significant to stopping or slowing national participation declines (Heberlein et al., 2008). In 2022, women comprised 31% of anglers and 22% of hunters nationally, an increase from 2016 participation when they comprised 27% of anglers and 10% of hunters (U.S. Department of the Interior, & U.S. Fish and Wildlife Service, 2023; U.S. Department of the Interior, U.S. Fish and Wildlife Service, and U.S. Department of Commerce, U.S. Census Bureau, 2018). Women are also considered an

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important demographic because they can influence the participation of family members in outdoor recreation or build cultural support for the activities (Jackson et al., 2026; Schroeder et al., 2006).

To bolster participation rates, state fish and wildlife agencies have created programs to teach a range of basic skills to the public, including “adult-onset” hunters and anglers (Price Tack et al., 2018). These programs recruit new participants, retain participants in the activities, and reactivate lapsed hunters and anglers (hereafter, R3 programs; Ryan & Shaw, 2011). In addition to youth-focused programs, many R3 programs focus on women, especially through state-subsidized Becoming an Outdoors-Woman [BOW] week-end-long camps or half-day programs where women learn outdoor skills in a group setting, often combining classroom and hands-on learning (Welch, 2004). As BOW programs gain popularity, there has been growth in the scale and scope of non-governmental organizations (NGOs), outfitters/guides, and other for-profit educational programs that also aim to teach women to hunt and fish through comparable educational approaches and mentored fishing or hunting trips (Isensee et al., [in press](#)).

Past studies have examined the impacts of singular BOW programs or events on female participants, with outcomes ranging from improved understanding of the role of state agencies in conservation as well as rules and regulations for hunting and fishing, increased participation in the outdoors, and improved skills (e.g., Asselin, 2019; Hargrove, 2011; Welch, 2004). In contrast, we are aware of few studies that have identified foundational approaches of R3 program design, more generally, that maximize participation of women, with a gap in knowledge on how R3 programs are developed to recruit and retain participants (Heyser et al., 2022; von Furstenberg et al., 2023). This research note includes perspectives from women participating in a variety of programs hosted by different organizations and seeks to identify R3 program design choices that can improve women’s participation in hunting and fishing.

Methods

Our research was co-developed in April and May of 2022 through 12 informal conversations with women’s group leaders who described a need to understand more about programming approaches and impact across the variety of women’s events. A qualitative study approach allowed us to identify and explore program design dimensions and impact.

Table 1. Focus groups by research phase, including state, program type (state or non-governmental organization (NGO)), number of participants, and duration of interview.

Research phase	Focus Group Location	Program type	Number of Participants	Duration (mins:secs)
Phase 1 (n = 43)	South Dakota	State	7	50:44
	Wyoming	State	12	65:19
	Minnesota	NGO	5	64:11
	Nebraska	NGO	8	38:27
	Nebraska	NGO	4	61:47
	Wyoming	State	7	40:29
Phase 2 (n = 29)	Montana	State	7	92:24
	Montana	State	5	73:33
	Utah	State	5	81:47
	Utah	State	5	116:55
	Montana	NGO	7	38:34

We attended 13 women's events to ground our understanding of event design and to facilitate 11 focus group interviews with 72 participants across a range of R3 programs from May to October 2023 (Table 1). We followed the South Dakota Board of Regents Institutional Review Board protocols (IRB-2305003-EXP) and recruited participants based on availability and interest in sharing learning experiences. Focus group interviews were held during downtime at R3 programs to allow participants to converse in a relaxed setting (Bernard, 2006). All focus groups were recorded, transcribed, and cleaned for accuracy.

We used a two-phased approach to focus group interviews. Phase 1 focus group interview questions engaged participants' past experiences in hunting and fishing, why they participated in R3 programs, and what parts of a program they found engaging to support their participation after the event ended. Throughout this inductive research phase, participants identified various aspects of program design that they experienced as beneficial to their learning. By the fifth and sixth focus group interview, participants shared no new dimensions, and we sought to deepen our understanding of the specifics of program design that may be associated with retention through a modified phase 2 focus group approach. In this phase, we sought to deductively elicit additional programming details and identify relationships between program components through facilitated group discussion using sticky notes to name, describe and categorize the identified dimensions of program design (Braun & Clarke, 2021).

We coded transcripts in two stages, with one author (SI) conducting the first line-by-line thematic coding process according to the dimensions of program design identified through the phase 2 focus groups (Braun & Clarke, 2021). This stage allowed for identification of key concepts and context related to program design and participant satisfaction. In the second stage, the team reviewed coded transcripts and iteratively organized components and considerations of programming into the classification system of elements that support effective R3 adult education for women, shared below (Braun & Clarke, 2021). We improved credibility of findings by hosting two communities of practice during and after data collection with 27 program leaders to share preliminary findings of program design and incorporate feedback (Watkins et al., 2018).

Results

We identified three domains of program design – each comprising multiple dimensions – that influenced participant learning in and beyond the classroom (Table 2). These included: 1) customizing education to align with participant needs; 2) creating a supportive environment to foster belonging; and 3) streamlining event logistics for participation.

Tailoring Educational Approaches to Women's Needs

Instructional approaches that broke complex concepts down into digestible components were critical to the success of programs in skills training and building confidence. Programs consistently relied on a combination of classroom instruction and hands-on approaches for adult learners to gain knowledge, skills, and confidence, and participants valued a variety of educational approaches, materials, and teaching styles. Participants emphasized the importance of experiential learning to advance new skills and build confidence, especially for tactile

Table 2. Overview of findings including each program design domain, the dimensions of each domain, and a short description of each dimension of each domain.

Domain of program design	Dimension of domain	Description of dimension of domain
Customized education to align with participant needs	Instruction quality	Depth of knowledge and diversity of perspectives of the instructor
	Courses offered	Courses in a variety of formats and with different training approaches
	Co-created objectives	Instructors work with participants to identify attainable goals toward progress
	Welcoming learning environment	Ability for the instructor to connect with and respectfully engage participants
Community development	Supportive learning community	Sense of trust and ability to learn alongside other participants during the event
	Network beyond event	Friendships and connections that endure after the event
Event planning and logistics	Cost	Financial inputs to attend and fully participate in the course
	Time	Frequency and duration of event
	Location/Site	Proximity and desirability of the event location
	Communication	Methods of sharing event details with participants
	Gear	Type, variety, and quality of equipment and clothing available for demonstration and use by participants

activities (e.g., cleaning and caring for guns, building emergency shelters). One BOW participant explained, “The hunting was super hands-on and I came back really empowered. My roommate [here in the program] got a lot of instruction, but [it was] less hands-on . . . she still felt like there was a barrier to it.” Other considerations included class size, teacher-to-student ratios, length of classes, and virtual/in-person options. Some participants also preferred progressively advanced-level classes to deepen knowledge and confidence of a specific skill.

Educational approaches were considered most impactful when instructors worked closely with participants to identify personal goals and develop a plan to achieve them. Clear communication before starting an activity improved learning, as described by a participant from an upland bird camp: “It was really communicated well before anyone took off. What is your goal? When do you want me to launch the bird? How do you want me to do it? That sort of thing is really good because some people want different techniques or have different expectations.” At this event, novice participants were given multiple opportunities to try hunting first-hand and regularly regrouped throughout the event to share their successes. When participants identified relevant learning objectives with instructors and had time for reflection, they reported appreciation for what they learned and a desire to deepen skills.

Participants valued events that created a safe and welcoming learning environment to try hard, sometimes scary, activities in more relaxed settings. One BOW participant explained, “Just getting to know each other, having fun fishing and handling a shotgun for the first time, and we weren’t terrified because no one was yelling at us.” Many participants shared that the most important attribute of an instructor was their demeanor, preferring supportive and encouraging teachers with a range of life experiences. Participants expressed that some information was more impactful when coming from a female instructor, primarily due to the nature of the information conveyed (e.g., backcountry hygiene). Overall, participants valued their instructor’s abilities to patiently work with and provide constructive feedback to learners.

Fostering Community Within and Beyond Programs

Participants, program leaders, and mentors appreciated the opportunity to expand networks with like-minded individuals before, during, and after events. Many participants described having small or nonexistent communities of like-minded friends, which made it challenging for them to regularly participate in various outdoor activities. One participant from a BOW program explained, “The sense of community with these women is so important to keep doing the outdoor skills because when I’m isolated by myself in my town, I’m not going to continue the skills.” Some program leaders sought to initiate community-building activities prior to events, whether through virtual meet and greets, e-mail introductions, or facilitated online discussion forums. In-person connections were fostered through a variety of trust-building activities during and outside of formal instruction, including bonfires, after-hours events, and low-stakes skill-building games with prizes.

It was common for participants to describe connections leading to lasting friendships and a support network. A participant at a BOW event explained, “I just want an opportunity to have a chance to just talk to women and to develop those skills while feeling supported in all that I do.” Non- and for-profit organizations offered recurring programs in response to this need. For example, a for-profit organization offered a monthly happy hour and an NGO hosted game-meat potlucks, supporting additional opportunities for women to connect with and learn from each other. Recurring meetups created opportunities for women to strengthen friendships where they could together engage in independent hunting and fishing activities.

Planning and Logistics Influenced Women’s Satisfaction with Events

Planning and logistics, including communication, location, time, gear, and cost influenced participant experience before, during, and after events. Program leaders often used multiple modes of communication (e.g., virtual meetings, signage, social media, and discussion boards) to prepare participants for often rustic camping conditions, to ensure adherence to the program agenda, and to help participants stay connected after the program. Digital and hardcopy reference materials were widely appreciated when provided, as shared by a BOW participant: “If you don’t grow up with someone teaching you all of this stuff over many years, the next best thing is feeling confident enough with the tools that you have or knowing where to look for more information.” Reference materials offering activity modifications were helpful for women who lived in different places and had different abilities and baseline knowledge.

Event location also mattered, with some participants expressing motivation to learn how to hunt and fish in areas with high-quality, diverse habitats, regardless of travel distance from home. Some participants appreciated events in new locations simply because of the opportunity to meet new people with similar interests. Women made decisions to participate based on the frequency and duration of an event or course, with some preferring events spanning multiple days. Events scheduled over weekends allowed participants to get a prolonged break from family responsibilities to engage more deeply with activities.

Gear was another critical aspect of event planning, and participants commonly mentioned the value of trying out various equipment and clothing, as well as the ability to learn from experienced hunters and anglers about their purchasing decisions. A participant in an

NGO-led program described the "... initial investment in the equipment to do it by ourselves. You have to be confident enough that you're going to like it and know what you're buying." As a result, participants appreciated the ability to try different gear and get personal recommendations from instructors before making purchases. Guidance from instructors helped participants identify quality gear, and many participants left programs feeling ready to make purchases. Some lower-cost equipment, such as fishing lures or turkey calls, was provided for free, with the hopes that participants would continue after the program ended.

Financial aspects were also important. State agencies provided free or low-cost programs that ranged from half-day workshops to weekend events and often could accommodate larger classes. Non-governmental organizations typically offered low- or no-cost programs, whereas for-profit organizations offered guided or chartered events that were often longer and more expensive. Participants also incurred costs related to travel and lodging expenses, child or pet-care related costs, and out-of-pocket costs to buy necessary licenses. As a result, participants and program leaders emphasized that perceived value of an event may be more important than the total monetary cost. For instance, leaders felt that participants could have lower expectations for a free event, but may be less likely to show up after registering. Instructors at more expensive programs were concerned about meeting higher expectations, including the expectation to harvest an animal, which cannot be guaranteed. Overall, participants expressed satisfaction regardless of cost when they received valuable instruction and memorable experiences.

Discussion

As a variety of hunting and fishing educational programs become available to women to bolster their participation (Isensee et al., [in press](#)), program leaders are faced with many event design and delivery considerations ([Figure 1](#)). Educational design that supports a combination of learning modalities empowered adult learners to engage with course content and deepen their knowledge, skills, and confidence. This approach was, in part, achieved with patient, knowledgeable instructors who co-created learning objectives with participants. Many programs also sought to foster community within and beyond the event, which many participants considered as central to their long-term engagement. Event logistics may be an understudied and under-emphasized component of R3 programming, but we found they influenced women's ability to select from a variety of courses to meet their needs, ranging in cost, time commitment, location, and more. Gear, in particular, offered surprising findings for R3 program design and cost structure, with implications for women's participation given recent information that emphasizes challenges they face to find well-fitting clothes and equipment (Jackson et al., [2026](#)).

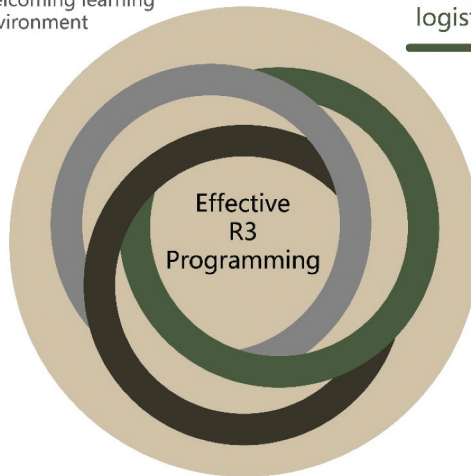
Combined, our findings highlight how program design influences the range and quality of educational offerings. Program leaders can use these design domains to strengthen program delivery to not only educate participants with necessary hunting and fishing skills but to bolster their confidence with empowering educational approaches tailored to their needs (Redmore & Tynon, [2010](#)). Furthermore, our findings showcase the role of educational programs in the development of a social support network – a critical though understudied component of participant retention in hunting and fishing (Larson et al., [2014](#)). Participants likely attended R3 events, at least in part, to make friends with shared interests –

Customized education to align with participant needs

- Instruction quality
- Courses offered
- Co-created objectives
- Welcoming learning environment

Event planning and logistics

- Cost
- Time
- Location/Site
- Communication
- Gear



Community development

- Supportive learning community
- Network beyond event

Figure 1. Key considerations for effective R3 program design to maximize women's participation in hunting and fishing.

something they understood as critical to their continuation in hunting and fishing. This emphasizes the social impact of R3 programming for women who lack a network of hunters and anglers, and demonstrates that learning in community is key to their future independence in the outdoors.

Future research could leverage our identified dimensions of programs to assess the impact of individual R3 programs on women's learning outcomes and long-term participation in hunting and fishing or to understand if and how these dimensions may be transferable to different target audiences. Importantly, we are not aware of R3 programs tailored to men, presenting limitations for comparisons. Overall, R3 programs designed with consideration for learning modalities, community, and event logistics may create opportunities for participants to become skilled, confident, and engaged hunters and anglers.

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Author Contributions

CRedit: **Lauren Redmore:** Conceptualization, Funding acquisition, Methodology, Visualization, Writing – original draft, Writing – review & editing; **Shelby Isensee:** Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Writing – original draft, Writing – review & editing; **Joshua D. Stafford:** Writing – original draft, Writing – review & editing; **Jennifer Zavaleta Cheek:** Conceptualization, Funding acquisition, Methodology, Project administration, Supervision, Visualization, Writing – original draft, Writing – review & editing.

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Disclaimer and Data Availability

Any use of trade, firm, or product names is for descriptive purposes only and does not imply endorsement by the U.S. Government. Data either are unavailable or have limited availability owing to confidentiality restrictions. Contact the corresponding author for more information.

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