Creating a Public Library Gardening Program: An Informal Learning Design

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Introduction

Motivated by the COVID-19 pandemic protocols, in August 2020, I embarked on what I believed at that time would be a relatively simple project. My goal was to provide a more amenable outdoor seating area at a small public library branch by renovating its Reading Garden and the landscaping outside the main entrance. However, to justify the expense of purchasing plants, shrubs, and soil, my Manager challenged me to transform what had long been a volunteer activity into a Library program. Of course, being an eager Library Science student and gardening enthusiast, I welcomed the opportunity. Little did I know that this project would consume my thoughts for the following year.

In the Fall of 2020, I presented my Manager with a plan for renovating the main entrance landscape, the Reading Garden, and the Children's Garden. I also proposed that we transform an underutilized portion of the landscape into a Learning Garden featuring native plants that attract pollinator species. In the Spring of 2021, I enrolled in *Informal Learning in Information Organizations* to explore instructional theories used in the design of Library programming. This paper reviews the practical application of learning theory in the development of a library gardening program. It will discuss how the program has evolved to date and present a proposed design for the future.

The Beginnings of Read-to-Seed - a Library Gardening Program

The *Read-to-Seed - Gardening with the Myers Park Library Garden Club* series is a virtual gathering where program attendees can learn about environmentally-friendly gardening practices from experienced gardeners. Participants are invited to share their gardening experiences, ask questions, and provide feedback. The programs are conducted using the Zoom webinar platform, which allows attendees to view and listen to a presentation and use the chat feature to interact with the program hosts and each other. Traditionally library garden lectures are conducted in-person, and therefore there was some initial hesitancy on the part of presenters to switch to a virtual format. However, since all of Charlotte Mecklenburg Library's programming was virtual between June 2020 and June 2021, we found that Zoom was a comfortable platform for our audience and speakers. We also found that virtual programming was the preferred format for a large segment of our target audience.

The Read-to-Seed virtual series is one component of a proposed Myers Park Library Gardening Program that will also include:

- an on-site conversation group;
- on-site, volunteer-led, gardening activities;
- a list of recommended books and digital resources available from the Library's collections;
- and complementary activities such as photography, sketching, storytelling, and music.

While the primary target audience for the program is older adults, the goal is to create what Rogoff (Rogoff, 1994) refers to as "a community of learners" in an environment designed for intergenerational interaction and connected learning. Another goal is to make the program

accessible to a diverse audience ranging from homebound adults who may be limited to a few window or patio container plants to active seniors who have extensive private gardens or work in community gardens. Also, in addition to featuring voices that reflect the local Library community, another goal is to bring in presenters who reflect the diversity in the horticultural community.

Why Start A Gardening Program?

As Banks (Banks & Mediavilla, 2019) states, gardens are a "wonderful incubator of literacy and learning at all ages." Gardening programs can facilitate learning various literacies, from written and verbal language skills to math and science. Banks (Banks & Mediavilla, 2019, p. 17) recommends that all library program planning adheres to three core teaching concepts to make learning accessible to a broad audience. These concepts are Multiple Intelligences, Universal Learning Design, and Culturally Relevant Education (2019, p. 17).

Multiple Intelligences

Multiple Intelligences is a theory formulated by Howard Gardner based on the idea that no two people learn in the same way, but everyone experiences the world using a combination of the eight different intelligences outlined in the following table (2019, p. 18). Gardner defines intelligence as the capacity to solve problems or fashion products valued in one or more cultural settings (Brualdi Timmins, n.d.).

As Brualdi (Brualdi Timmins, n.d.) explains, the intelligences are used concurrently and typically complement each other as individuals develop skills or solve problems.

While a gardening program has an obvious appeal for natural learners, it can also employ other intelligences such as scientific inquiry (analyzing soil requirements), art and spatial (garden design, creating a container display, photography, sketching), interpersonal (forming relationships with a group), verbal/linguistic and intrapersonal (keeping a gardening diary), and kinesthetic (performing gardening tasks).

Gardner's Multiple Intelligences	
Intelligence Type	**Expression**
Logical Mathematical	the ability to detect patterns, reason deductively, and think logically
Verbal/Linguistic	the ability to effectively manipulate language to express oneself rhetorically or poetically and remember information.
Spatial	the ability to manipulate and create mental images to solve problems. This intelligence is not limited to visual domains--Gardner notes that spatial intelligence is also formed in blind children
Musical	the capability to recognize and compose musical pitches, tones, and rhythms
Bodily-Kinesthetic	the ability to use one's mental abilities to coordinate one's bodily movements
Interpersonal	the ability to understand the intentions of others
Intrapersonal	the ability to understand your feelings and motivations
Natural	the human ability to discriminate among living things (plants, animals) as well as sensitivity to other features of the natural world (clouds, rock configurations)
	(Brualdi Timmins, n.d.)

Universal Design for Learning (UDL)

Universal Design for Learning (UDL) organizes the eight intelligences so all learners can succeed (2019, p. 18)

Components of Universal Design for Learning	
Multiple means of representation	Requires that content be presented in a variety of ways. For example, a garden-based program on pollination could start with a handout and lecture (verbal and spatial), followed by a small group discussion in which participant share their thoughts. The group would then visit the library garden to observe pollinating insects (natural, kinesthetic, and logical/mathematical). Participants might also learn about pollinators by listening to an audio of bird songs.
Multiple means of engagement	Requires various ways to engage everyone by connecting the program information to the participant's interests. The goals of the Read-to-Seed program design are to engage participants through virtual and in-person lectures, books, DVDs, and hands-on gardening activities.
Multiple means of expression	Allow program participants to express their new knowledge in ways that are most comfortable for them. For example, a linguistic learner might write a poem; a visual learner might make a video about hand pollination, while a musical learner might compose a rap. Participants might also write poetry about the gardens, take photographs, or paint.
Multiple means of assessment	Determining various ways to evaluate what the participants have learned from the program. Since this is an informal learning environment, participants will not be tested. Instead, they will be periodically polled or ask to provide feedback to determine if the learning experience is valuable

Culturally Relevant Education (CRE)

In a paper on interest and learning, DiGiacomo (DiGiacomo et al., 2018) notes that learning is a socio-cultural and historically mediated phenomenon evidenced by people's shifting participation in the meaningful socio-cultural activities of their communities and supported by peer or mentor relationships. CRE uses cultural knowledge and experience to make learning more relatable and effective. For example, a gardening program is a natural fit for the Myers Park Library branch because there is a long history of customer interest and active volunteering in the Library's gardens. In addition, an interest in preserving the tree canopy, gardening without herbicides and pesticides, and protecting natural wildlife is evident throughout the community.

Following this model of incorporating Multiple Intelligences, UDL, and CRE, you may have a plan for a program that resembles the following:

Program: Discovering Native Plants that Thrive in Shade	
Activity	**Learning Component**
Participant attends Zoom Presentation on Native Secrets for Your Shade Garden	verbal/linguistic, logical/mathematical, interpersonal, natural
Read handout on the topic	verbal/linguistic, spatial, natural
Interact with other participants using the Zoom chat feature	verbal/linguistic, interpersonal
Read additional information provided in the program follow-up email	verbal, logical, spatial
Check out materials from the library on the topic	Verbal/linguistic, natural, logical/mathematical
Pick up a Soil testing kit during a visit to the library	logical/mathematical, natural
Tour the Library's Learning Gardens	kinesthetic, natural
Consider ways to incorporate the ideas in their garden	spatial / intrapersonal
Participate in an on-site gardening activity	kinesthetic, natural, interpersonal

A Community of Learners

Rogoff's (Rogoff, 1994) "community of learners" model defines learning as the activity that occurs as people participate in shared endeavors with others, with all playing active but often asymmetrical roles in socio-cultural activity. In the case of the Myers Park Gardening Program, the community is primarily comprised of adult residents of Mecklenburg County. They share an interest in environmentally friendly gardening but have various experiences and expertise on the topic. Thus, while some community members may lead discussions or activities, all the participants have an opportunity to play a role in the learning experience.

Unlike the "adult-run" or pedagogical model of learning based on the transmission of knowledge from experts to novices (Rogoff, 1994), a gardening program brings together individuals who may have similar levels of expertise. For example, one learning activity may consist of an expert gardener giving a lecture on attracting pollinators to your garden. A follow-up activity may involve a group, including several highly experienced gardeners, working together in a learning garden. An example of a multi-generational activity would be older participants working with volunteer Boys and Girl Scouts on building an arbor and planting a vine that will grow over it. An example might be adults taking young children on a scavenger hunt through the gardens to identify plants or find signs or objects. There might also be an activity involving photographing pollinators in the garden. During late Autumn and Winter, the gardening program might include discussions on children's and adult literature with garden themes. All these activities contribute to the overall learning experience for the entire community.

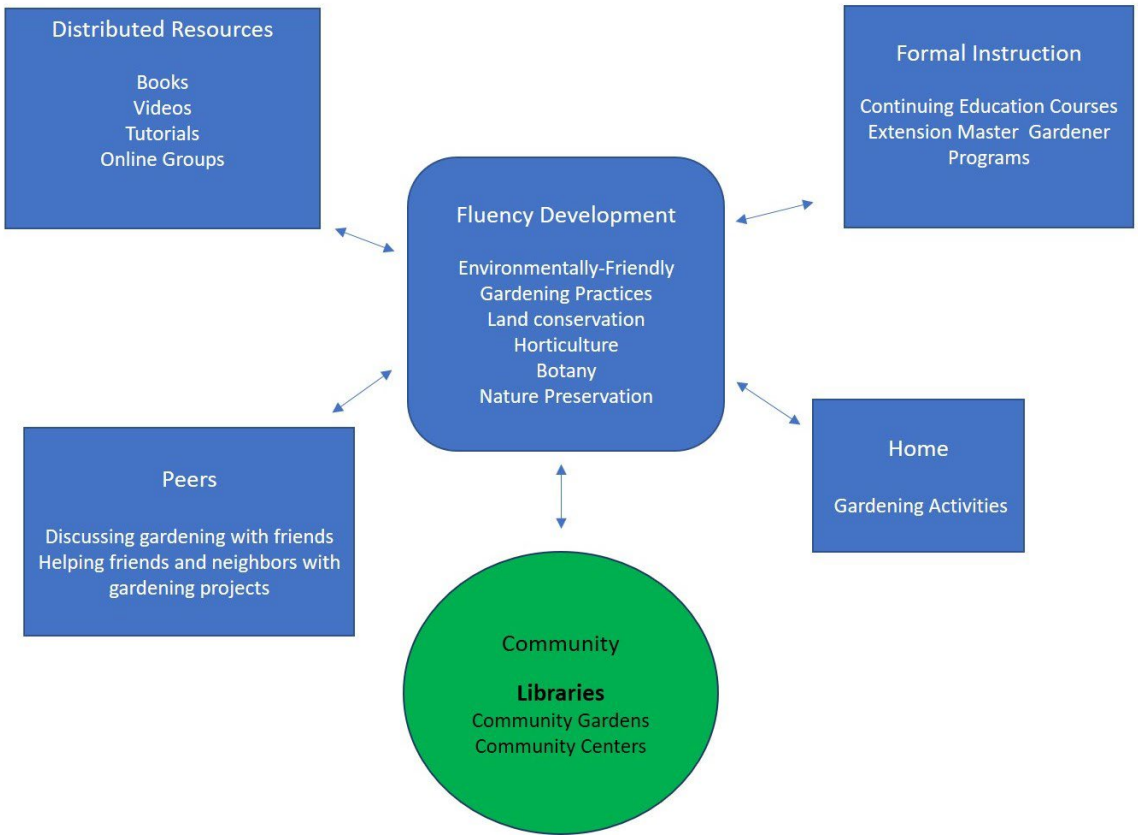
The overarching goal in creating a gardening program based on a community of learner's model is to merge the traditional aspects of library programming with library volunteering to make a participant-driven learning experience. As Rogoff (1994) states, in a community of learners, both mature members of the community and less mature members are conceived as active; no role has all the responsibility for knowing or directing, and no role is by definition passive.

A Learning Ecology

While his study primarily focused on the learning behaviors of adolescents, Barron (Barron, 2006) identifies five types of self-initiated learning processes that adults also exhibit These include:

- the seeking out of text-based informational sources,
- the creation of new interactive activity contexts such as projects,
- the pursuit of structured learning opportunities such as courses,
- the exploration of media,
- and the development of mentoring or knowledge-sharing relationships. (Barron, 2006)

Barron also provides a framework from which the library's role as a "community" can be examined within the context of a learning ecology



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Connected Learning

While the term "Connected Learning" is generally associated with youth, it is a theory that lends itself to the learning ecology of the Myers Park Library gardening program. Connected Learning has three core values: equity, full participation, and social connections (Peppler, 2017). A program designed with this theory promotes full participation in learning environments, communities, and civic spheres and builds relationships through shared practice, culture, and identity. By partnering with the Matthews Library branch and the Mecklenburg Extension Master Gardeners Volunteer program, the Myers Park Library gardening program extends its

reach to the community. Also, by creating a Learning Garden on Library grounds, the community can visit it at any time.

Knowles Model of Andragogy

Knowles' andragogical model (Knowles et al., 2020) is based on six characteristics of adult learning behavior. They are:

1. The need to know. Adults need to know why they need to learn something before undertaking to learn it. For example, an individual may decide to sign up for a library gardening program to learn how to prevent heavy rains from causing soil erosion or how to attract hummingbirds to their patio.

2. The learners' self-concept. Adults have a self-concept of being responsible for their own decisions, for their own lives. Thus, individuals choose which library programs they want to attend.

3. The role of the learners' experiences. Adults often come into an educational activity with both a greater volume and a different quality of experience than younger persons. For example, in a recent survey of Read-to-Seed program attendees, over 50% of the respondents stated that they were experienced gardeners.

4. Readiness to learn. Adults become ready to learn those things they need to know and be able to do to cope effectively with their real-life situations.

5. Orientation to learning. In contrast to children's and youths' subject-centered orientation to learning, adults are life-centered in their orientation to learning. Adults are

motivated to learn to the extent that learning will help them perform tasks or deal with problems they confront in their life situations.

6. Motivation. Adults are responsive to some external motivators (better jobs, promotions, higher salaries, and the like), but the most potent motivators are internal pressures (the desire for increased job satisfaction, self-esteem, quality of life, and the like).

Conclusion

The key take-aways from the process of designing and implementing a gardening program for a public library are: have a programming strategy, know your audience, get continual feedback on the process, and be flexible. I chose to design a program for an older adult audience for several reasons. This group is often underserved by public libraries and runs a greater risk of social isolation during COVID-19, and false presumptions are often made about computer literacy. What I've learned is that many older adults made the adjustment to communicating virtual and are eager to engage with not only their peers but cross-generationally.

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