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Enhancing Learning through Interpretive Signage in Educational Demonstration Gardens: Part 2 — Graphic Design and Materials[1]

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This is the second publication of a two-part series, which provides Extension faculty and other educators who are interested in developing interpretive signage with basic considerations for graphic design as well as material selection.

The initial publication in this series is Enhancing Learning through Interpretive Signage in Educational Demonstration Gardens: Part 1 – Planning, Content Development, and Evaluation.

Design Considerations

Designing interpretive signage using best practices and selecting appropriate materials is crucial for effectively engaging visitors and conveying information. Thoughtful design enhances readability, visual appeal, and attraction power (Carter, 2013). Selecting suitable materials will help you stay on budget and create signage that will meet the needs of your project.

Signage Graphic and Text Design Tips

To make your signage enjoyable and easy to read, consider the following recommendations.

- Left-aligned text is generally easier to read (National Park Service, 2023).
- Capital letters are good for short titles; long text in all caps can be difficult to read (Honig, 2000).
- Use bold or italic fonts to emphasize words or statements instead of underlining them (Honig, 2000).
- Use no more than 2 to 3 fonts per sign (Honig, 2000).
- Ensure your text is an appropriate size. It should be readable from 3 to 6 feet away. The minimum recommended size is 18 points, but 22-point font is easier to read (Honig, 2000).
- Use approved logos (e.g., UF/IFAS Extension, your organization's logo) where applicable.
- To improve readability, avoid overcrowding and utilize white space (Honig, 2000).
- Select quality photos with high-contrast colors and clear illustrations to help convey complex material effectively. Low-quality photos are known to have a negative impact on interpretive signage (Zhu et al., 2021).
- A minimum color contrast ratio of 70% between text and background is recommended based on the ADAAG (Americans with Disabilities Act Accessibility Guidelines). It is best to avoid colors such as red and green, which can be problematic for those with color vision deficiency or other vision issues (National Park Service, 2023).

Plant Label Format

There are many ways to organize the content on plant labels. The information provided below is based on how the New York Botanical Garden designs its plant labels.

The plant's common name (A) is followed by the plant's accepted *scientific name* (B) *(botanical name, Latin name)* written in italics.

If the plant is a cultivar or variety, this information will be next.

The cultivar (or variety) name is capitalized and is within single quotation marks or followed with the abbreviation cv. or var. Other abbreviations that may apply include subspecies (subsp.), species (sp.), and form (f.).

Hybrids are indicated by x in between the two crossed species. The plant family (C) follows the scientific name and cultivar or other specification. It is not generally italicized.

The native range of naturally occurring species should appear below.

Other information (D) that can be included is plant hardiness zones and icons representing a plant's water

needs, sun requirements, and wildlife benefits. QR codes can be utilized to send the participants to a plant profile with more information (Pérez-Sanagustín et al., 2016).

Standard and permanent botanical plant signage is typically offered without color and has limited options for symbols and logos. An example of plant signage can be viewed in Figure 1.

Figure 1. Plant identification label. An example of plant signs used at the UF/IFAS Everglades Research and Education Center demonstration garden. Credit: UF/IFAS Extension Palm Beach County.

Layout and Installation

Accessibility of the signage to all visitors must be prioritized. Signs should be placed at a height accessible to children and wheelchair users and angled for easy viewing (Honig, 2000). Placement should be near the area you are emphasizing, and elements such as nearby benches and lighting can highlight the area as a place to stop (Carter, 2013). Signs should be placed in an order to establish a logical flow that emphasizes the theme of the garden or the message you are conveying (Honig, 2000).

Note that plants grow to fill in spaces and may overcome signage. Give plants and trees ample room. Avoid attaching signage with wire to trees, because the wire can girdle branches or a trunk over time.

What Kind of Signage Should You Choose?

Signage can be budget-friendly and do-it-yourself, made of paper that is laminated to be waterproof, or signage can be more durable, expensive, and professionally made, intended to perform outdoors for years. Select signage based on the specific needs of the project — whether it will be a permanent fixture, a temporary display, or a combination of both. Permanent signage is best suited for core educational themes and long-lasting plantings such as perennials, shrubs, and trees. Temporary signage is more appropriate for seasonal plantings or short-term displays.

Short-term temporary signs (Figure 2) are low-cost and can be easily moved and updated. They are helpful for wildflower gardens that change frequently, budget-conscious projects, short-term rotating displays, surveys, and testing of new ideas (Honig, 2000).

Materials: These signs can consist of a backing or frame made from plastic, wood, or metal. Text and images can be laser printed on traditional or waterproof paper, then laminated to prevent water intrusion. Laser printing onto vinyl stickers is another option, although fading does occur.

- Installation: Easy to move and install with stakes that can be pushed into the ground.
- Pros: Easy to update and replace, inexpensive.
- Cons: Require frequent replacement, which can lead to high replacement costs. Signs can easily be stolen or moved to inappropriate locations.

Figure 2. Short-term temporary sign. Temporary, low-cost plant signs, laser print on vinyl stickers affixed to Coroplast®. UF/IFAS Extension Martin County demonstration garden. Credit: Jennifer Pelham, UF/IFAS.

Long-term permanent signs are durable and suitable for areas of the garden that remain consistent (Honig, 2000).

Materials: Commonly used materials include metal, wood, or stone frames. Durable sign face materials include baked enamel, vinyl, plastic, or aluminum. Metals and fiberglass are more weather-resistant but also more expensive. While wood and plastics are cheaper, they will often need more maintenance. Plexiglass can break easily, and its seals often fail, causing internal water damage (Apple et al., 2013).

Three quality options for signage are fiberglass-embedded signs, high-pressure laminated signs, and anodized aluminum signs (Apple at al., 2013).

- Fiberglass signs are made of UV-inked paper embedded between two fiberglass sheets. They are durable and cost-effective, and typically come with a 10-year warranty over the product's life.
- High-pressure laminates can be made with various color and design options. Made from paper prints, melamine sheets, and phenolic resin, they are comparable to fiberglass in durability. They generally come with a 10-year warranty.
- Anodized aluminum is highly weather-resistant and durable. However, it can be easily scratched and bent and has limited color options.
- Installation: Careful placement is required because these signposts are set in concrete.
- Pros: Long-lasting and low-maintenance.
- Cons: They can become outdated quickly if information needs to be changed. While these signs may be expensive upfront, bulk purchases may reduce costs.

Environmentally Friendly Choices

Organizations prioritizing sustainable behaviors may want to model them by procuring signage from companies that utilize recycled, nontoxic material and planet-friendly practices. EnviroSIGNS and Pannier Graphics are two companies that offer these products, although there are likely more that exist. To reduce waste when updating projects, reuse the signposts. This can lower expenses and save materials from being sent to the landfill. Additionally, some materials can be recycled. Recycling should be considered before purchase of a particular product (Apple et al., 2013). Careful selection of materials can minimize environmental impact and showcase the garden's efforts to be sustainable.

Conclusion

Effective interpretive signage design is vital for enhancing visitor engagement and conveying important information. By adhering to recommended best practices in graphic and text design, carefully selecting appropriate materials, and prioritizing accessibility, organizations can create informative and impactful signage. Whether opting for temporary or permanent options, organizations can use thoughtful planning to ensure that signage meets project needs and delivers impactful information. Ultimately, well-designed signage can encourage learning, promote environmental stewardship, and foster positive change.

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