



Bilingual Exhibits Research Initiative (BERI)

Steven Yalowitz, Institute for Learning Innovation (ILI)

Cecilia Garibay, Garibay Group

Carlos Plaza, Miami Museum of Science

Nan Renner, San Diego Natural History Museum

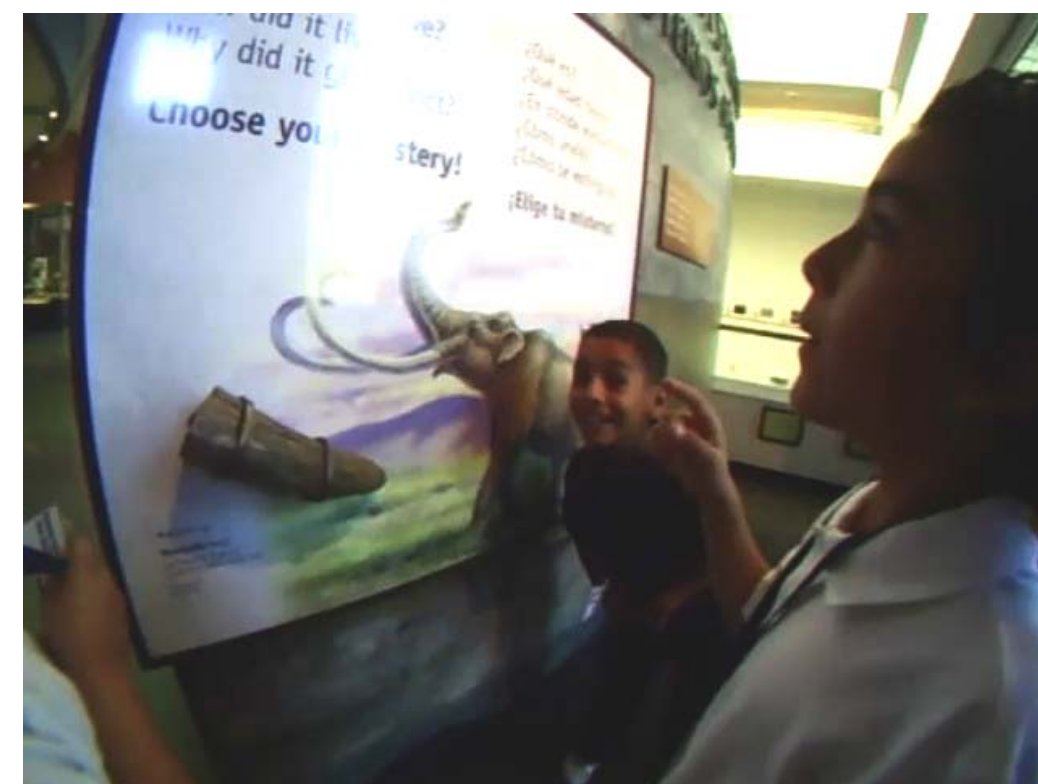
National Science Foundation Pathways Grant DRL #1010666

Overview and Big Ideas

The purpose of this NSF Pathways project is to survey the ISE field and conduct exploratory research on how bilingual Spanish/English exhibits expand access to science learning for Latinos in U.S. science museums.

We have documented how professionals at 20 diverse ISE institutions create bilingual exhibits and how they understand bilingual audiences. This informs the next phase of research into how Spanish-speaking Latinos use bilingual exhibits to engage with STEM content. This basic research fills gaps in the field's current understanding—about visitor engagement AND the institutional knowledge and practices that constitute the state of bilingual ISE exhibits today.

After this project is complete, we will submit a full research proposal, to test hypotheses generated from this exploratory Pathways project. These hypotheses will relate to how bilingual exhibit content and design enhance engagement with STEM among Spanish-speaking Latinos.

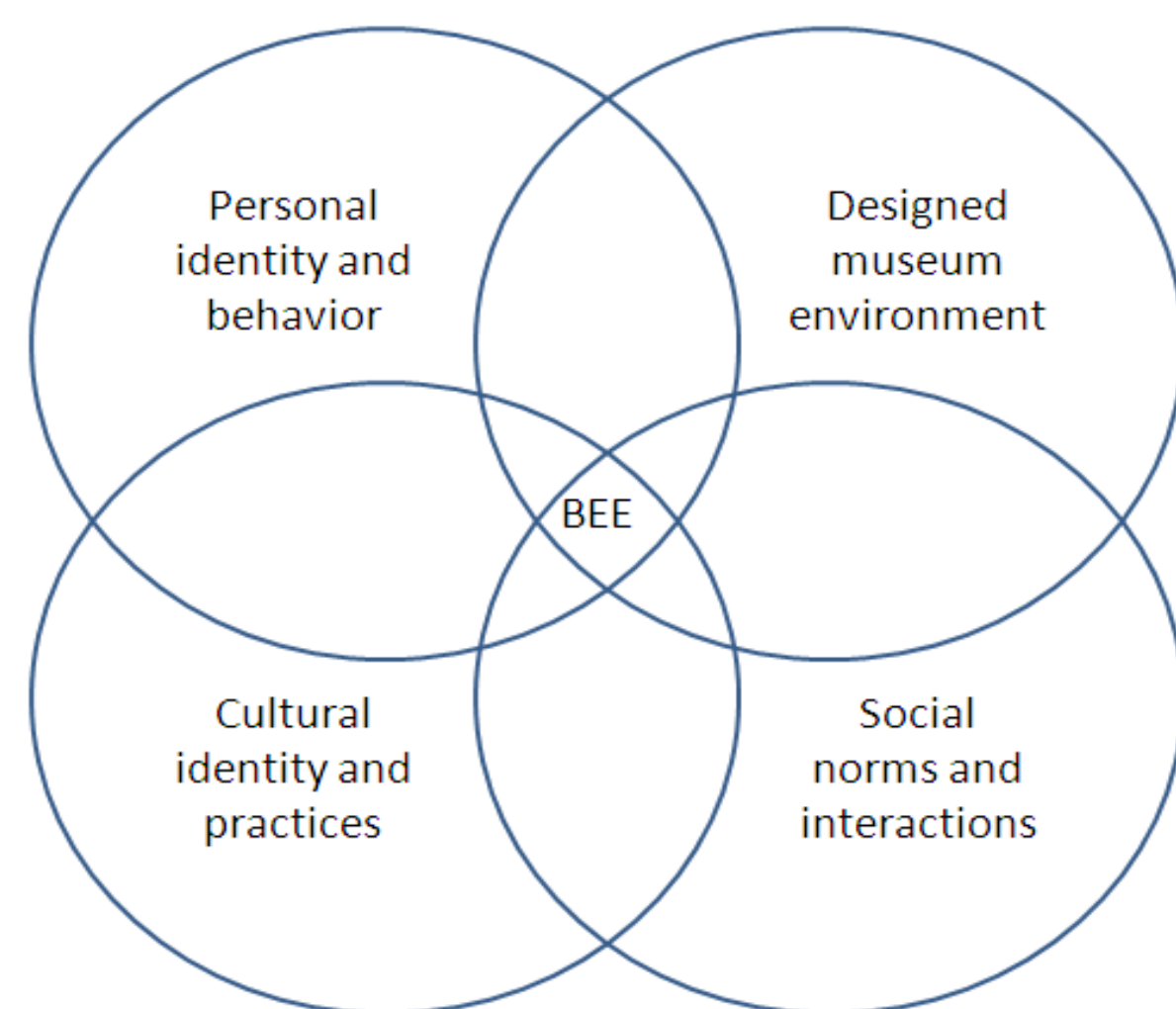


Theoretical Model

The Bilingual Exhibit Experience (BEE) integrates aspects related to **individuals** (personal identity and behavior), **culture** (cultural identity and practices), **social factors** (social norms and interactions), and **the ISE setting** (designed museum environment) (cf. Falk & Dierking, 2000).

Although the interaction of these four factors comprise the bilingual exhibit experience, ISE professionals have control only over the designed environment. We will document how resources available in the designed environment afford different forms of interaction and engagement among Spanish-speaking visitors.

The Bilingual Visitor Experience



BEE = Bilingual Exhibit Experience

Deliverables

The Bilingual Exhibits Research Initiative has two main deliverables:

1) Bilingual Exhibits—Current Professional Practices

The BERI team conducted telephone interviews with professionals at 20 U.S. ISE institutions to document current bilingual exhibit practices.

Research Questions focused on staff knowledge, beliefs, and practices:

- What is the rationale and purpose of bilingual exhibits?
- Who is the audience for bilingual exhibits?
- What is the form and content of bilingual exhibits?
- What is the process for creating bilingual exhibits?
- How do visitors interact with bilingual exhibits? (both observed and hypothesized)

Results: Some interesting findings noted so far:

- Institutions with many bilingual exhibits work under the assumption that providing Spanish text increases engagement among Spanish-speakers, although they have very little information or evidence about how visitors actually use bilingual exhibits and the resulting benefits.
- Institutions with minimal bilingual exhibits want more information about visitors' motivations, needs, and use of bilingual exhibits to help them gauge the benefits to visitors relative to institutional costs.
- ISE professionals' questions about audiences and bilingual exhibits have helped to shape the research agenda with visitors, described below.

2) Bilingual Exhibits—Visitor Uses and Benefits

By combining observations and interviews of Spanish-speaking visitors in social groups, this exploratory research will document how visitors use exhibit resources and how they perceive the benefits of bilingual exhibits. Research sites: San Diego Natural History Museum, the Miami Museum of Science, and two additional ISE institutions. We will include different types of institutions from different geographic regions and different Latino cultural groups.

Research Questions, with Spanish speakers:

- How do individuals and groups engage with bilingual exhibits?
- What indicators of learning can be observed?
- How do patterns of engagement and learning correspond with exhibit features?
- How do visitors perceive the benefits of bilingual exhibits?

Status: We are finalizing the research plan and will collect data at four institutions during late Spring/early Summer 2012.

Contact: Steven Yalowitz, yalowitz@ilinet.org

Primary and Diverse Audiences

ISE professionals who produce, evaluate, and fund bilingual exhibits comprise the primary audience for this research.

The research results will not be presented to the general public; however, the general public will participate in the research at four ISE institutions. Ultimately, the general public should benefit from the application of findings from this Pathways project and subsequent research as they inform the field.

Indicators of Project Success

Informing the ISE Field: When we disseminate the research results at conferences and on the Web via InformalScience.org, we will pay attention to the responses of our various ISE audiences (practitioners, evaluators, administrators, funders). Does the subject generate dialogue, in person and/or online? To what degree do ISE professionals find the information relevant and useful? What questions remain unanswered?

To document current professional practices, we are inviting ISE professionals to help create an online archive of bilingual exhibits on ExhibitFiles.org. An increase in the number of documented bilingual exhibits will serve as one indicator of this project's success.

Follow-up Proposal: Follow-up research will allow us to build on the findings from this Pathways project in the following ways:

- Testing hypotheses generated from the current exploratory research related to how bilingual exhibit features (both form and content) elicit engagement among Spanish-speaking visitors.
- Using quantitative quasi-experimental approaches with a larger sample and qualitative descriptive methods will yield richer, more generalizable results.
- Indicating implications from this project for design that support a research-based framework for creating effective, engaging bilingual exhibits.

Challenges

Specifying outcome categories: Engagement and learning in ISE settings is undeniably complex. Our challenge is to specify observable behaviors and self-reported perceptions that reveal relationships between the form and content of bilingual exhibits and engagement with STEM among Spanish-speaking visitors.

Identifying institutions to include in the research study: Few institutions have fully bilingual exhibitions, so achieving diverse representation in geography and STEM disciplines presents a challenge.

