Rethinking access: How tactile encounters with 3D prints enable Disability Gain in blind, partially blind, and non-blind visitors' museum encounters

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Accessibility, touch, and the museum

Accessibility and inclusion are central museum concerns

•Explicitly recognised within the 2022 ICOM museum definition
•Growing expectation that museums provide meaningful access rather than simply physical access
•Shift from vision-centred interpretation toward multisensory engagement

Touch has become increasingly important

•Historically prohibited because of conservation concerns
•Traditionally framed as an accessibility accommodation for blind visitors
•Increasingly recognised as a valuable interpretive tool for all visitors

Yet significant questions remain

•How do visitors actually use tactile resources?
•How do tactile resources support shared experiences?
•What role do companions play in meaning-making?

Our project

Location:

V&A Cast Courts

Resources:

3D-printed replicas & Audio descriptions

Participants:

Six blind and partially blind visitors;

Companions, partners, friends, and family members

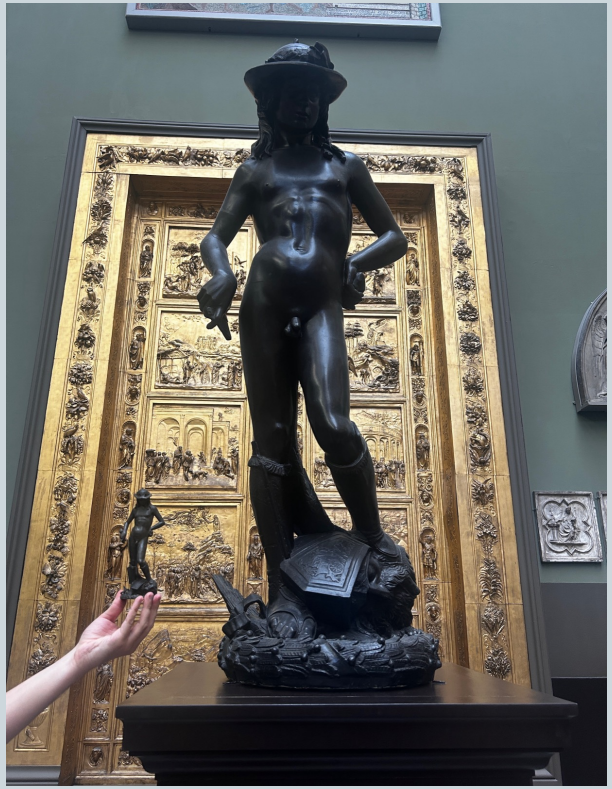
Activity:

- Gallery visit
- Handling session of 3D prints
- Return to gallery

(c) V&A Museum

V&A Cast Courts

3D Prints



Accessibility resources as scaffolding

Scaffolding:
Learning occurs through socially mediated interaction.

Scaffolding involves:
- shared activity
- guidance
- interaction with interpretive resources
- shifting expertise
- increasing independence

In this study:
3D prints and audio descriptions are not viewed as accessibility tools alone.

They are viewed as:
- scaffolding resources
- tools that support interaction
- mechanisms for collaborative meaning-making

Scaffolding in practice: changing who leads

During the initial gallery visit

One participant relied heavily on guidance from his mother:

- descriptions were primarily visual
- participant appeared disengaged
- limited interaction

During handling session:

- participant began exploring independently
- asked questions
- challenged interpretations
- Corrected misconceptions

"I didn't really like it. I want to touch things, otherwise I'm just listening to her"

What changed?

Co-touching as collaborative meaning-making

Participants explored the 3D prints together:

- guiding each other's hands
- comparing details
- questioning interpretations
- joking and storytelling
- drawing on previous experiences

(c) Galleria Pietro Bazzanti

The role of audio description

Historical interpretation

- context of the sculptures
- history of casts and replicas

Spatial interpretation

- relationship between replicas and originals
- understanding of scale

Interpretive guidance

- directed attention to specific features
- prompted comparisons
- supported discussion
- Corrected misconceptions

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"It's funny, but it's not. In the end, everything she told me was wrong at the beginning. I had an impression of being in a completely different space compared to the one that the AD described"

Accessibility and the creation of place

Participants repeatedly discussed:

- immersion
- orientation
- scale
- understanding the galleries

Why?

Handling sessions occurred inside the museum environment.

Participants could:

- touch replicas
- hear descriptions
- remain connected to the Cast Courts

Sense of place in the Cast Courts

Participants described:

- feeling immersed in the galleries
- understanding the scale of the casts
- connecting replicas to nearby originals
- feeling part of the museum environment

Key finding:

Participants were not just learning about objects. They were learning about the gallery itself.

Accessibility supported:

- orientation
- placemaking
- environment understanding

Disability Gain

Disability Gain proposes that accessibility interventions can enrich experiences for everyone.

Evidence from this study

- Audio descriptions corrected misunderstandings among sighted companions.
- 3D prints revealed details that sighted visitors had overlooked.
- Blind and partially blind participants often initiated observations that changed how companions understood the sculptures.

Accessibility functioned as:

- a resource for disabled visitors
- a resource for non-disabled visitors
- a catalyst for collaborative learning

From accessibility tools to accessibility practices

Successful accessibility is not produced by:

- 3D prints/tactile resources alone
- audio description alone
- tactile access alone

Instead it emerges through the interaction of:

- people
- objects
- interpretation
- conversation
- museum space

Recommendations

Design for shared experiences

Accessibility should support groups rather than individuals alone.

Keep tactile engagement within galleries

Avoid separating access activities from museum environments.

Treat audio description as interpretation

Not simply as accessibility provision.

Prioritise quality

Replicas must accurately represent:

- scale
- form
- colour
- key details

Thank you!

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