

Comparing Engagement, Learning, and Value in Physical and Virtual Exhibits

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PURPOSE OF THE STUDY

With the onset of COVID-19, many science centers chose to develop virtual exhibits to engage visitors from home. As institutions reopen, what role will virtual exhibits continue to have? This study gathered data to help museums better understand the affordances and challenges of virtual and physical exhibits. Our guiding research question was: *How, if at all, does engagement, learning, and value differ at a virtual and physical version of the same exhibit?*

DATA COLLECTION

- 35 youth (age 10-17) used each version of the activity ($n = 70$ total).
- Physical data collection took place at the Museum of Science, Boston. Virtual data collection was on Zoom.
- Procedure involved:
 - Observation of exhibit use
 - Post-survey
 - Post-interview
 - Demographic survey



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EXHIBIT CONTEXT: PHYSICAL & VIRTUAL VERSIONS OF MYSTERY SKULLS

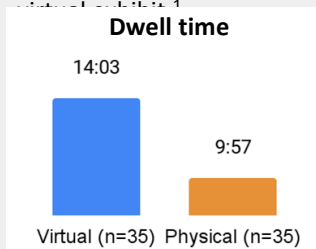
At the Mystery Skulls exhibit, visitors gather clues about skull features to figure out what animal a skull belongs to. Both versions use a screen-based interface. The physical version has touchable skull models; virtual users rotate computer-based 3D skull models.



RESULTS

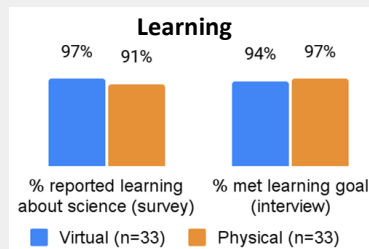
Engagement

On average, participants stayed longer at the



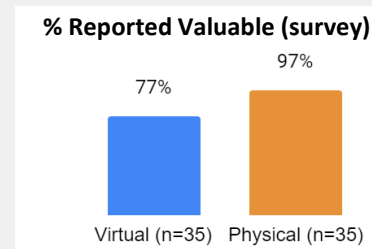
Learning

Learning was high for both groups; there was no statistically significant difference.



Value

Similarly, both groups found the exhibit valuable, with no statistically significant difference.



¹Model predicting dwell time, including predictors of condition (virtual v physical), age, gender, race, and ability ($F(9,50) = 3.37, p < .01, R^2 = .32$). Significant predictors were virtual condition ($\beta = 331.29, p < .01$) and gender ($\beta = -175.21, p = .02$)