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# The Effect of Enrichment Research on Visitor Behavior

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# The Effect of Enrichment Research on Visitor Behavior

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## Abstract:

The American Zoological association claims that zoo and aquarium visitors will be inspired to make lifestyle changes and contribute to conservation efforts after seeing animals up close at their facilities. However, the evidence to support these claims is lacking. Research has indicated that the most important feature of a zoo or aquarium exhibit is its level of interaction or engagement with the visitor. The present study was designed to test how guest participation in environmental enrichment research influenced the behavior of aquarium guests. The goal was to observe guests while other visitors actively engaged in enrichment trials with the animals compared to control periods. Among the behaviors of interest were time spent at the exhibit, and whether it influenced other guest's interest to also take part in the enrichment study. Observations were made at The Maritime Aquarium at the seal, otter, turtle, and meerkat exhibits. Results indicated that visitors lingered longer at an exhibit when enrichment researcher was being conducted. These findings suggest that observing research at an aquarium may increase the educational value of exhibits for visitors. This is a promising first step to better communicating the message of conservation to guests.

## Introduction:

The Association for Zoos and Aquariums (AZA) claims that zoo and aquarium visitors will be inspired to make lifestyle changes and contribute to conservation efforts after seeing animals up close at their facilities (Hancocks, 2012). Previous studies (e.g., Bitgood et al., 1985 & Arndt, et al., 1993) have indicated that the most important features of an animal exhibit is its level of interaction or engagement with the visitor. At two separate Primate Centers in Europe, Bowler et al. (2012) and Waller et al. (2012) found that viewing live active science increased dwell time, had a positive impact on visitor attitudes/learning, and was effective for impacting conservation engagement in the visitors. Live animal demonstrations has been evaluated as effective in achieving both recreational and educational goals (Anderson, 2003).

## Hypothesis:

The presence of a researcher engaging in environmental enrichment with guests participating leads to an increase in the length of stay of the aquarium visitors at the exhibit.

## References:

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Bitgood, S., Patterson, D., & Benefield, A. (1986). Understanding your visitors: Ten factors that influence visitor behavior. American Association of Zoological Parks and Aquariums 1986 Annual Conference Proceedings (pp. 726-743). Minneapolis, MN: American Association of Zoological Parks and Aquariums.  
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Hancocks, D. (2012). *The Future of Zoos*. Retrieved from [http://www.zoolex.org/publication/hancocks/Future\\_of\\_Zoos\\_Hancocks\\_2012.pdf](http://www.zoolex.org/publication/hancocks/Future_of_Zoos_Hancocks_2012.pdf)  
Waller, B., Peirce, K., Mitchell, H., & Micheletta, J., (2012). Evidence of public engagement with science: Visitor learning at a zoo-housed primate research centre. *PLoS ONE*, 7(9): e44680.

## Methods:

- Data were collected at The Maritime Aquarium in Norwalk, Connecticut at the underwater viewing windows at the seal, meerkat, otter, and turtle exhibits.
- Guests over the age of 18 were randomly chosen to participate in enrichment trials and be observed.
- Enrichment behaviors were recorded on an iPad or iPhone with "Numbers" app and "Seconds Pro." Focal data was conducted in one minute intervals from the time the guests started the enrichment behavior until the time it ended. The sex and age was also recorded for the individual being observed. The number of visitors present during the experiment was recorded as well.
- Enrichment behaviors included holding a mirror up to the glass, placing sticky hands/decorations onto the glass, putting light up sticky balls onto the glass, and/or using squeaky toys.

## Results:

- Guests observing enrichment research had significantly longer dwell times than control trials with animals on exhibit alone,  $t(252) = -3.185, p = 0.020$ . See Table 1.

Table 1:

Trial	N	Mean	Std. Deviation	Std. Error Mean
Control	133	2.23	1.26	.109
Guest Participation	121	3.01	2.84	.256

## Discussion:

- The presence of active enrichment research lead to longer dwell times at the various aquarium exhibits.
- Results from previous studies (Bowler et al., 2012) and a pilot study at Mystic Aquarium also showed longer dwell times when a researcher was present collecting video data only, without guest participation in the research.
- In the future, we plan to use follow up surveys to see how observing enrichment research with guests participating impacted their experience at the aquarium.



[https://www.google.com/search?q=maritime+aquarium&source=lnms&tbn=isch&sa=X&ved=0ahUKewjw-7nBwaTTAhUJ2GMKHdHgCS4Q\\_AUIBygC&biw=1093&bih=521#imgrc=0-YwY6yHdivQKM:&spF=213](https://www.google.com/search?q=maritime+aquarium&source=lnms&tbn=isch&sa=X&ved=0ahUKewjw-7nBwaTTAhUJ2GMKHdHgCS4Q_AUIBygC&biw=1093&bih=521#imgrc=0-YwY6yHdivQKM:&spF=213)

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