

# Toys For Animals: Enrichment Through Collaboration

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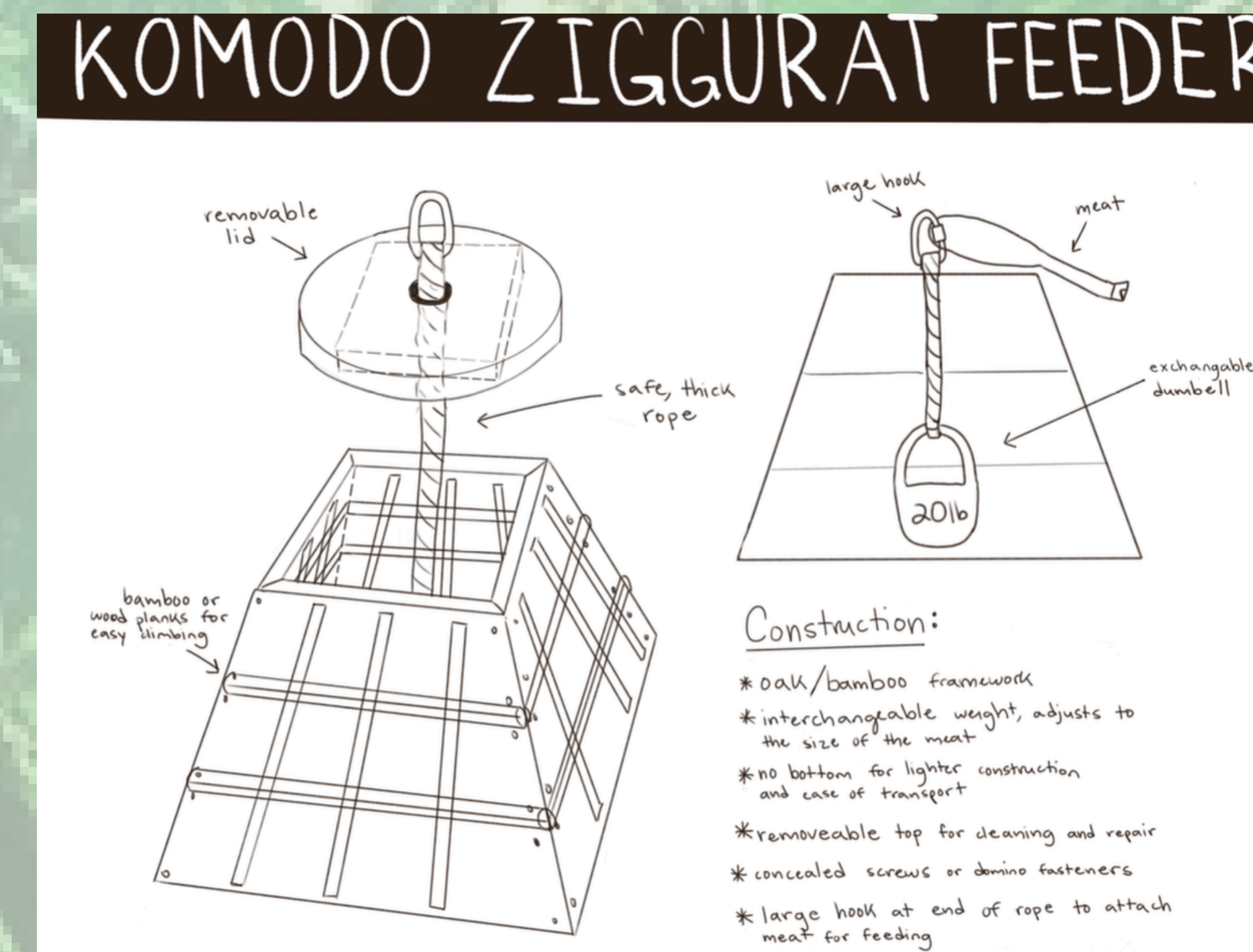
## Introduction

Animal enrichment is a vital element in the care of zoological animals as it encourages natural species-specific behaviors that improve physical and psychological well-being (Kresnye et al. 2022). The FSU College of Fine Arts was inspired by Toys for Animals, a project by Handhouse Studio, which engages students in the design process through the creation of animal enrichment. The course offered at FSU is titled "Interspecies Sculpture Studio."

The research focuses on communication, teamwork, and the creative design process between FSU students/staff and Jacksonville Zoo staff throughout the Fall 2025 semester. While zoo-university partnerships are encouraged, the specific dynamics of how they succeed are not well-documented. By evaluating this partnership, future collaborations can implement sustainable operations that allow the growth of interorganizational relations between research universities and zoos.

The project began with students collaborating with zookeepers to build enrichment items for animals. The research team then distributed Qualtrics surveys to staff and students to evaluate collaboration quality. The survey displayed positive results for both parties, showing that through intentional teamwork, partnerships between research universities and zoos can excel. The results suggest significant value in collaborations between zoos and research facilities by providing an outside perspective on animal behavior. Analysis allows for future research partnerships to introduce standards that strengthen their relations, demonstrating the value of continuing this collaboration. Further studies include diversifying end products through incorporating technology into enrichment designs and improving communication between partners that accompany technical advancements.

• Research question: "How did the collaboration between FSU students and Jacksonville Zoo & Gardens benefit both student learning and the zoo's animal enrichment program?"



Student documentation for the structure and mechanics of the Komodo dragon enrichment toy



FSU students holding their enrichment prototypes alongside Jacksonville Zoo & Gardens staff during the first zoo visit (9/26/2025)



FSU students presenting their "Aviary Hexagonal Hangers" design concept to Jacksonville Zoo & Gardens staff

## Methods

- FSU students/staff and Jacksonville Zoo & Gardens staff collaborated to design thoughtful enrichment toys for Komodo dragons, giraffes, arboreal birds, and aquatic birds.
- Communication was facilitated through Zoom meetings, emails, and in-person meetings.
- Designs were altered and finalized by zoo staff after students presented their work.
- Students then fabricated their designs in the FSU Fine Arts workshop.
- After the conclusion of the course, FSU students/staff and Jacksonville Zoo & Gardens staff were distributed Qualtrics Surveys.
- The surveys analyzed the efficacy of the teamwork, communication, revision, and results of the partnership by asking them to rank the success of each topic or by asking what went well / what could be improved.
- Overall, the students mentioned learning a lot about animals, enrichment, working with materials, and thinking innovatively. Still, some of their critiques and challenges included not allocating enough time to complete the finished product and having trouble transitioning from the prototyping to the construction stage.
- The zoo staff mentioned feeling extremely impressed and grateful for the partnership and finished objects, but disclosed struggling with time management and internal communication challenges



Students working on the giraffe enrichment toy during the fabrication stage using power tools

## Discussion

- Our research reveals an overall successful and fruitful partnership, with only a few small challenges that could be improved in the future.
- The animals appeared to enjoy interacting with the enrichment objects presented, and the zoo benefited from this new addition and improvement to their animal enrichment program.
- The students walked away with valuable knowledge ranging from animal safety and species-specific behavior, how to use power tools and machinery, and effectively collaborate with others to reach a shared goal.
- Having the variation of in-person, Zoom, and email communication available allowed for fast distribution of information between geographically distant partners.
- Some limitations to note include the small survey sample size and the limited amount of information on past enrichment regarding these specific species available for reference and to compare results to.
- Overall, students were able to receive valuable real-world experience incorporated into their education whilst Jacksonville Zoo & Gardens staff received innovative enrichment toys that encourage natural behavior in zoological animals.
- Moving forward, we plan to take what we learned from this collaboration to improve our next project with the Jacksonville Zoo regarding nocturnal animals.
- Specifically, we will focus on implementing technology into the enrichment of kinkajous and armadillos.

## Findings

Students (n=8):

- Individual project success %:
  - Giraffes: 87.5%
  - Komodo dragon: 81%
  - Aquatic birds: 83%
  - Arboreal birds: 75%
- 8/8 of students noted time-related issues, including an underestimation of construction time, an extended modeling phase, and a need for stricter deadlines to prevent last-minute work. One participant suggested the addition of a teacher's assistant or lab assistant to aid the professor with time management.
- 7/8 students struggled with materials due to an overestimation of object weight or a lack of resources in the prototype phase, which led to unfamiliarity in the final build that caused mechanical failures.
- 3/8 students emphasized that the real-world application increased their engagement and passion, which encouraged them to be more involved in the design and creation of their enrichment toys.

Staff (n=6):

- 6/6 of the involved Jacksonville Zoo & Gardens staff claimed the collaboration was very meaningful and they would be willing to participate in the partnership again.
- While all participants claimed the communication was "very clear", issues arose regarding miscommunications with meeting times, last-minute changes, and internal zoo-side communications that could be improved in the future. All participants communicated with FSU students as staff through Zoom, in-person meetings, and email.
- The finalized enrichment products were shown to be successful in terms of innovation and safety considerations. However, it was proven difficult for zoo staff to adequately express how natural behaviors determine the elements included in an enrichment toy. It was also indicated that technical adjustments would have to be made to ensure mechanisms do not affect the animal while in its enclosure.



Students presenting their finalized aquatic bird feeder to Jacksonville Zoo & Gardens staff

## Acknowledgments



## References

