Ambassador Animal Initiative
Summary Evaluation Report

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Report prepared by Woodland Park Zoo's Audience Research Team.

EVALUATION OVERVIEW AND KEY FINDINGS

Woodland Park Zoo strives to foster empathetic[1] connections towards animals and promote caring behavior. In support of this goal, the Ambassador Animal Initiative's aims was to expand the zoo's capacity to use effective empathy practices and increase the opportunity for zoo audiences to engage in empathy-based programs. The strategies used to achieve these aims included an enhanced empathy training approach for staff and volunteers, and the expansion of ambassador animal programming both on site and off. Ultimately, through these efforts, the initiative hoped to achieve the following two outcomes:

> **Outcome 1:** Woodland Park Zoo has embedded empathy best practices into organizational culture, resulting in increased short and long-term capacity to deliver quality empathy-based ambassador animal programming on and off grounds.

> **Outcome 2:** Participants in programs aimed at encouraging empathy and compassion demonstrate greater awareness and understanding of animals' needs and increased positive attitudes towards animals, such as respect or appreciation.

Evaluation activities were conducted to target the zoo's priority areas of interest, inform an iterative improvement process throughout the grant cycle, and measure the initiative's success at meeting its outcomes. Leveraging theoretical and methodological approaches to understanding the complexities of empathy across audiences of different ages and backgrounds, the zoo's Audience Research team employed quantitative and qualitative evaluation measures. A reflection on the results from this mixed methods approach facilitated greater, collective meaning-making across this initiative.

KEY FINDINGS
Fostering Effective Empathy Practice at Woodland Park Zoo

Key measurement strategies to assess empathy-based practice and capacity included a post training survey, a longitudinal post-survey, and semi-structured interviews with key staff and volunteers. These data sources were looked at together to make meaning of the desired outcome.

Staff and volunteers had an overall positive response to empathy training. The Overall Experiential Rating[2] *(*OER*)* resulted in 29% rating their training experience as *Outstanding* followed by 51% rating it as *Excellent.* In the first year of the grant there was an observed correlation between job role at the zoo and OER ratings, as animal keepers were more likely to rate their experience lower. After modifications were made in year 2, however, there was a very weak, non-significant correlation between OER ratings and respondents' job function at the zoo (r_s= 0.007, p= 0.901), a strong indication that these changes were well received.

The highest *Outstanding* rating (58%) was given by our zoo partners or vendor who are contracted to manage the zoo's food service, retail stores, and vendor booths around zoo grounds. In particular,

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[1] *Empathy* defined as the stimulated emotional response that relies on the ability to perceive, understand and care about the perspective or experience of another person or animal.

[2] The *Overall Experiential Rating* is a validated metric designed to assess participant response to an experience. (Pekarik, 2018).

the staff in the zoo stores appreciated being included in this empathy initiative and considering the role they can play to support this organizational effort.

Staff with minimal, direct learning engagements with guests, such as the facilities, security or commissary teams did, however, rate the usefulness and relevance of the training significantly lower than other groups. The training's guest-centered focus on effective empathy practices was a barrier to seeing how to contribute to this effort when fostering positive guest experiences is not a primary function of their role.

Multiple training touchpoints support broader implementation of empathy practice. Those that had multiple touchpoints of empathy training or additional coaching (e.g. program observations with the Empathy Training Coordinator, or a content/material review) were more likely to report improved use of all empathy practices (65%), than those that had the single touchpoint of an empathy 101 training (49%).

Staff and volunteers have improved understanding of empathy concepts and how they contribute to the zoo's mission. The majority (≥ 58%) of training participants reported strong agreement with the statements, "I think using empathy-building techniques will help connect guests to animals," "I think using empathy building techniques will help motivate guests to take action for wildlife," and "It's clear to me how using empathy building practices contributes to the zoo's mission."

Staff and volunteers have increased confidence in applying effective empathy practices. Immediately after the initial empathy training, staff and volunteers from all departments were equally as likely to feel confident in using empathy best practices when talking to guests. At the end of training participants identified at least one way they hope to apply what they learned to their work. Although feeling highly confident, staff and volunteer were more likely to focus on some empathy practices more than others. Most often they pledged to use practices that introduce the animal (35%), such as using the animal's name or pronouns, or inform the audience about the animal (29%) by sharing information about the animals needs and unique characteristics.

Sustained empathy practice. In a longitudinal follow up survey conducted at least 3 months after attending the first empathy training, the majority of respondents (82%) indicated that they had thought about or applied empathy practices since their initial training.

A young guest gets help from his caregiver as he get an up close encounter with Blueberry, a Knobbed Hornbill, during the Mobile Zoo program

Encouraging Empathy and Compassion Towards Animals

A combination of peer assessments monitoring program staff's use of empathy practices, observations of program audiences, and pre/post assessments with program participants, were used to assess success towards fostering empathy in zoo guests including increasing awareness of animal needs and improving attitudes towards animals.

Incorporation of effective empathy practice and the empathy bridge into ambassador animal programs. Staff consistently demonstrate introducing the animal (step 2) and informing the audience (step 3), with these practices observed in 97% and 93% of program respectively. However, less than half (46%) of ambassador animal programs observed applied perspective-taking techniques (step 4). Similarly, just over a third of these programs (34%) drew a connection to a caring action (step 5). The lack of clear messaging

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that the zoo has prioritized for promotion in programs was a significant barrier to this step being put into practice.

Providing opportunities for audience expressions of empathy. Audiences at the *Care for Animals* program were most likely to exhibit verbal or behavioral expressions of empathy during the program, compared to the *The Nature of Growing Up* and *Flights, Camera, Action! Care for Animals'* flexible format, up-close views, and opportunities for questions and discussion promoted these opportunities. Few observed groups at the scripted, theater-style programs exhibited outward expressions of empathy. The scripted format that relies on consistent pacing and cued delivery presents challenges for promoting audience opportunities to practice empathy skills, minimizing up close, prolonged views of the animals and conversation with the animal keeper.

Keeper Janelle introduces Lola, an Aplomado falcon, to the audience at Flights, Camera, Action!

Understanding and awareness of animal needs. Participants in both the *Nature of Growing Up* and *Living and Thriving* demonstrated a baseline understanding of basic needs of animals prior to attending the zoo programs. A pre/post comparison

of open-ended responses identifying ways the students can provide for an animal's need to make choices showed a decrease in the proportion of students that said "I don't know" or left it blank (21% to 10% respectively). In addition, proposing that they offer variety in the routine of the animal's day, such as offering different foods or toys, increased from 20% to 40%. When asked to complete a pledge that had them identify an animal and one thing they could do to help him or her thrive almost three quarters of students (74%) mentioned ways to provide for the animal's basic or secondary needs. There was no measured change in understanding about animals' needs and how they compare to our own after attending *The Nature of Growing UP.*

Fostering positive attitudes towards animals. Students in kindergarten through third grade reported significant improvement in attitude towards snakes immediately after attending the *Nature of Growing Up* program, increasing ratings on a 4 point, pictorial scale from 2.77 to 3.33. Students' self-reported emotions after meeting the ambassador animal during *Care for Animals* were more positive, with 19% indicating they felt happy before meeting the animals and 38% feeling happy after meeting the animal. Students also perceived the animals' own experience or emotional state more positively after meeting the animal in the *Care for Animals* program. Approximately 11% thought the animal would feel happy to meet the class prior to the presentation and 32% perceived the animal to be happy to meet the class at the conclusion of the classroom visit.

Embedding Empathy into Our Organizational Culture

In 2017, Woodland Park Zoo continued their initiative to foster empathy for animals and nature through an expansion of staff and volunteer training opportunities made possible by a grant for Phase 2 of the Ambassador Animal Initiative. The goal of the training strategy was to support the achievement of the grant's capacity building outcome.

> Outcome 1: Woodland Park Zoo has embedded empathy best practices into organizational culture, resulting in increased short and long-term capacity to deliver quality empathy-based ambassador animal programming on and off zoo grounds.

The framework on which the Fostering Empathy for Animals training relies is the empathy bridge, a five step process designed to facilitate empathy-driven storytelling. Each of the segments (1-5) represents an area of research-based best practices for fostering empathy. In year 2 of the grant, training participants were introduced to this framework and encouraged to use this structure to craft their animal narratives.

Empathy Bridge Model
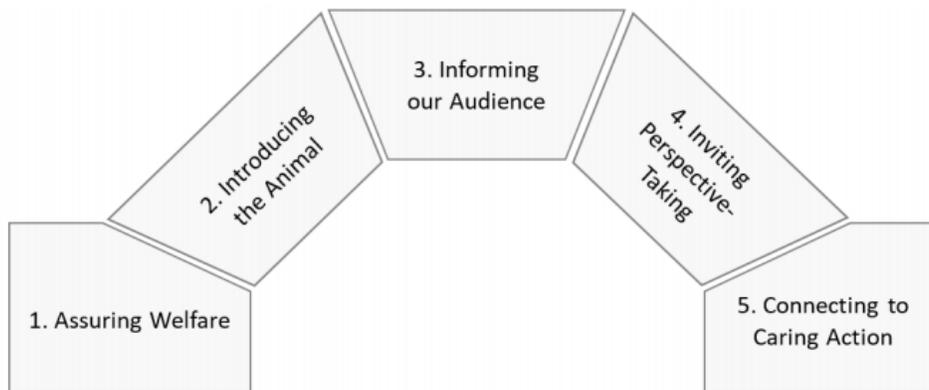
A REVIEW OF YEAR 1 FINDINGS

Year 1 of this renewed initiative represented an effort to build upon previous learning from empathy trainings (Phase 1 of the Ambassador Animal Initiative) to create a training strategy that supported long-term retention, promoted self-confidence and self-efficacy in applying empathy practice skills, and that was flexible enough to facilitate learning across more varied professional roles and functions at the zoo. Through informal interviews with staff members prior to the training, the Empathy Training Coordinator found it was important to ensure the training addressed a diversity of learning styles, and that training could be conducted during existing meeting times or structures. With these lessons in mind, 11 empathy trainings were conducted between April and July of 2018. A summary of the results from a *post-training* paper and pencil survey of Year 1 are below and a full report of year 1 was sent out in August 2018.

In the initial year of the grant, 255 people attended Empathy Training 101. Participants were comprised of volunteers, animal care staff and education staff. Of those, 95% or 243 participants, completed the immediate post-training survey. Respondents were asked to rate their overall experience in the training. The Overall Experiential Rating (OER) found that, as a whole, participants had a very positive response to the training with 18% rating it as *Outstanding*, and 51% as *Excellent*. Ratings were, however, significantly related to the respondent's function at the zoo (r_s=0.519, p <.001). Animal care staff were much more likely to give a *Less than Excellent* rating compared to people in an educational or volunteer role.

Participants also responded to five semantic differential 5-point scales that explored distinct aspects of the respondent's experience. Overall, staff from all departments displayed positive ratings in regards to the accessibility of the

The Overall Experiential Rating (OER) is a key performance indicator that allows for quick assessment of participant experience. Pioneered by the Smithsonian Institute of Policy and Analysis, OER consists of one question asking respondents to rate their experience on a 5-point labeled scale [*poor, fair, good, excellent, outstanding*].

Outstanding and *excellent* ratings are reported individually, and *poor, fair* and *good* are grouped together into the category *Less than Excellent.* Benchmarking studies have set a suggested target of *30% less than excellent, 50% excellent,* and *20% outstanding. (Pekarick et.al, 2018).*

training content and the relevance of the content to their role at the zoo. Volunteers and education staff gave similar, positive ratings on the remaining three scales focused on interest in content, perceived use or benefit of the training, and the trainings overall level of success. Animal care staff, however, rated these three areas significantly lower. Despite most keepers indicating they see the relevance of the training to their unique role, their interest and attitude towards the training and its content was more varied.

Lastly, at the conclusion of the training most people felt that empathy is an effective strategy for fostering connections between our guests and the animals in our care, as well as support the zoo's focus on this initiative. This strong buy-in to both what the zoo is doing and the purpose behind it is central to moving forward with a comprehensive training and implementation strategy across the zoo. In addition, approximately half of all survey respondents gave the highest rating on the statements assessing their confidence in using empathy skills, their perception of the connection between empathy and pro-environmental action, and the identification of new learning.

Figure 1. Year 1 training participants indicated strong support and confidence in advancing the zoo's empathy-focused initiative. (n=243)
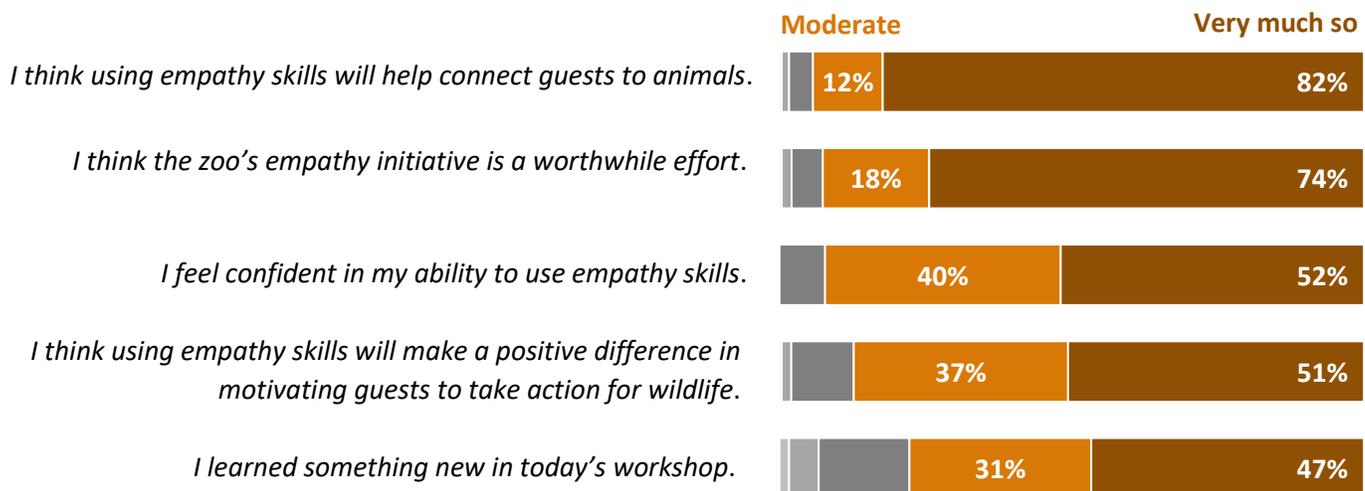
Animal care staff rated all statements significantly lower compared to education staff/volunteers except for their confidence in applying effective empathy practices. The greatest variation was in regards to new learning that resulted from the training. Approximately 53% of respondents from Animal Care gave a positive rating (selected *Very much* or *Moderate* on rating scale). In contrast 88% of education staff and 90% of volunteers gave a positive rating.

At the conclusion of Year 1, the Empathy Training Coordinator conducted interviews with staff and volunteers who had attended Empathy Training 101. Insights from these interviews, as well as analysis of the post-training survey data, led to four key recommendations.

1) **Minimize time devoted to empathy theory and its connection to the zoo's mission**: Most participants felt training was a worthwhile endeavor and that it would improve guest connections to animals. Unless directed at new staff or volunteers, trainings can reallocate time towards other objectives, such as skill building or dialogue.
2) **Connect current strategies to opportunities for improvement**: Highlight current practices, while demonstrating additional value-added opportunities to enhance empathetic connection to animals in our care.
3) **Provide more concrete examples of practice**: Offer trainings with content and concrete examples targeted at specific learning styles and workforce roles.
4) **Provide conservation actions**: The final stage of the *Empathy Bridge Framework* encourages staff and volunteers to offer a conservation or beneficial action in support of the animal they are highlighting. A number of trainees mentioned the challenges to making this connection without a better sense of the specific behavior the zoo is hoping to encourage. The zoo is currently realigning its calls to action with its new strategic direction. Once available, providing these as part of the empathy training is vital to the successful use of the bridging technique.

CAPACITY BUILDING IN YEAR 2

The purpose of Year 2 was to continue to improve upon the trainings, using the recommendations set-forth from Year 1. Evaluation activities in year 2 were designed to address two primary staff/volunteer outcomes:

1) Staff and volunteers have increased understanding of empathy concepts and how they contribute to the zoo's mission.
    a. Staff/volunteers feel that using effective empathy practices help connect guests to animals.
    b. Staff/volunteers feel that using effective empathy practices helps motivate guests to take action for wildlife.
    c. Staff/volunteers think the zoo's efforts behind empathy are worthwhile.

The Empathy Training Coordinator delivers an empathy training to zoo volunteers.

2) Staff/volunteers have increased confidence in applying effective empathy practices.
    a. Staff/volunteers feel confident they can use the effective practices when appropriate.
    b. Staff/volunteers can identify ways they can employ effective empathy practices.

A variety of data sources were used to address these outcomes, including an immediate post training survey, a longitudinal post-survey, and semi-structured interview*s* with key staff. Postcards completed at the end of training asking participants to identify one way they will apply the empathy practices were an additional source of information. All of these data sources were looked at together to make meaning of the desired outcomes.

METHODS AND PARTICIPANTS

Based on the recommendations from the Year 1 evaluation, the Empathy Training Coordinator customized empathy training even further for each department group. Year 2 represented an effort to increase the reach of the Fostering Empathy for Animals training as a part of the Empathy Initiative, and customized departmental trainings were conducted from November 2018 to August 2019.

Trainings varied in scope from being part of an informal, 45-minute staff meeting, to formal presentations conducted in classroom setting for approximately 60 minutes. While Year 1 training participants were primarily from the Animal Care, Learning and Innovation (Education), and volunteer teams, in the second year training expanded to include participants from all zoo departments and the zoo's vendor partners (Figure 2). In the last 5 minutes of each training, participants were asked to fill out a confidential, one-page, paper and pencil survey, providing immediate feedback about their experience. (See Appendix B) While some items remained the same from Year 1, some items were modified. Participants were also asked to fill out a self-addressed postcard where they recorded one to three ways they could incorporate empathy into their day-to-day activities at the zoo. These post-cards were returned to participants at work approximatley two months later. A total of 326 people completed the post-training survey in the

Figure 2: Post-training survey participants (n=326)

Department	Count
Education/Conservation	65
Finance/IT/Exec/HR/Advancement	58
Facilities/Security/Commissary	56
Animal Care	
Volunteers	36
Admissions/Events	36
Zoo Partners	27

second year of training for an 80% response rate and 271 people completed a post card. For analysis, participants were grouped into seven different groups according to their most primary day-to-day zoo functions (e.g. internally facing vs. externally facing) or having taken the trainings together.

Semi-Structured Interviews: In October and November of 2019, semi-structured interviews were conducted with 13 people who were chosen at random from a list of participants who had completed training. These interviews were meant to explore how participants were currently feeling in regards to empathy training, how they felt they had incorporated empathy practices into their roles, and what resources or next steps they felt they needed. (See Appendix B for interview instrument). Those interviewed were from the Learning and Innovation department (5), volunteer team (1), Animal Care department (4), Advancement department (1), Facilities department (1), and Admissions department (1) and represented roles from front-line staff to director level.

Longitudinal Post-Survey: In October 2019, 339 participants were emailed an online, longitudinal post-survey approximately 3 months or more after training. This instrument included an open -ended question that asked for a specific example of how empathy practices were applied in participants' work, and included four or five (depending on department) retrospective questions asking participants to indicate whether they used specific empathy best practices the *same as before*, *a little more than before*, *a lot more than before* attending the training or whether they felt they were *not applicable* to their roles. It also asked participants to provide any challenges or barriers they have experienced in applying empathy practices in their position at the zoo. (See
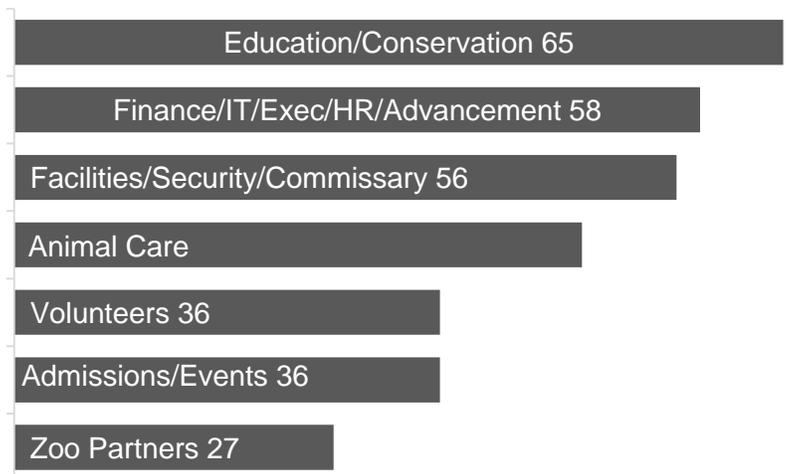
Appendix C for survey instrument). Survey responses also recorded whether the respondent had received a single training touchpoint or participated in multi-empathy training opportunities, such as coaching or content reviews. A total of 124 participants or 37% responded to the longitudinal survey.

Figure 3: Approximately 4 out of 10 longitudinal survey respondents had received multiple empathy training touchpoints. (n=124)

Single touchpoint	73
Multi-touchpoint	51

Analysis of open-ended questions: Open-ended questions from the post-training survey and the longitudinal post-survey were coded into categories based on themes. For questions related to using or identifying empathy best practices, the empathy bridge framework was used as a coding structure (See Table 1 for framework). For other questions, responses were inductively coded based on emergent themes.

Table 1: Empathy Bridge Framework

Empathy Best Practice	Description	Example
Assuring Welfare	Assure people of our animal welfare considerations and that animal care is our top priority. Model empathetic attitude and empathic behavior.	"Explain to guests certain animal welfare practices/ways in which we try to provide the best care".
Introducing the Animal	Use personal pronouns and individual names. Give people the individual age or personal traits of an animal. Be accurate and productive when providing information. Correct misconceptions.	"Using gender pronouns and names of animals when answering guest questions."
Informing our Audience	Tell a story. Provide personal facts and natural history facts. Detail how animals and humans are similar or different.	"Explaining how primate (non-human) facial expressions are different than ours & what they means."
Inviting Perspective-Taking	Give the guest an opportunity to observe the animal. Encourage mimicry, storytelling and roleplaying.	"Encouraging students to mimic animals they see."
Connecting to Caring Action	Suggest simple caring actions.	"Share how guests can act to improve the lives of animals they care about."

OUTCOME RESULTS

On the post-training survey, when looking at all respondents together the OER resulted in a majority *Excellent* (51%) rating, followed by *Outstanding* (29%) and *Less than Excellent* (20%) (Figure 4). These results are above the suggested OER industry benchmark: o*utstanding* ratings > *less than excellent* ratings. There was a very weak, non-significant correlation between ratings and respondents' job function at the zoo (r_s= 0.007, p= 0.901). This is an improvement over Year 1, where there was a significant correlation between OER and job function (r_s= 0.519, p< 0.001), with animal care staff rating their experience significantly lower than other participants.

Figure 4: Training groups in year 2 show consistently high satisfaction except for Facilities/Security/Commissary.
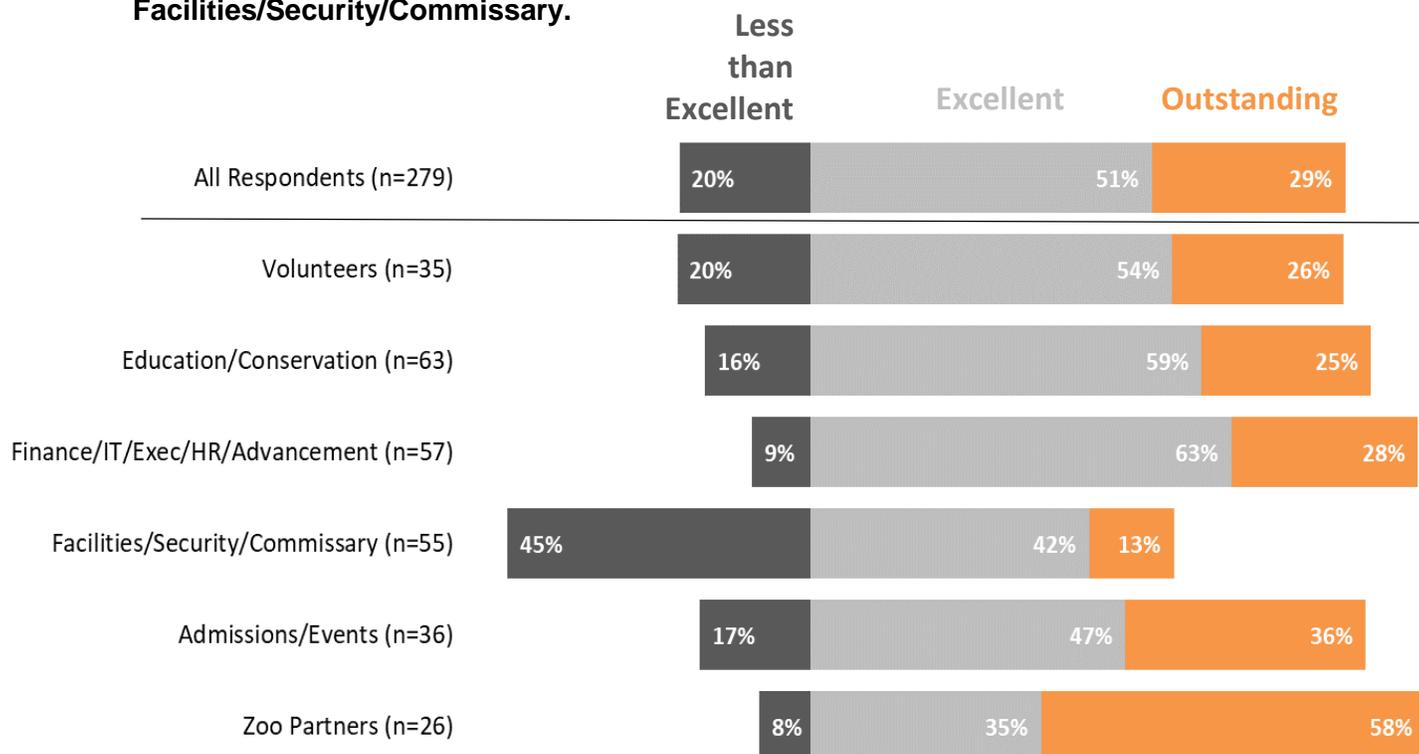

The group with the largest percentage (58%) of *outstanding* ratings were the Zoo Partners, or contractors that work at our food venues, retail stores, and vendor booths around zoo grounds. While not direct employees of the zoo, these partners often perform visitor-serving roles and have frequent, impactful interactions with zoo guests. One participant from the Zoo Partner group said on their post-training survey, "*It is great to feel like a part of the zoo as a whole instead of just Event Networks*" and another said, *"The training helped me understand how the way I interact with guests affects their experience with the animals."* Moving forward, the zoo should be thoughtful of including vendor staff in trainings and initiatives relevant to their role. This will not only increase the effectiveness of the initiative but will also increase the experience of the zoo partners, as it provides them with more connection and context for the important work they are doing.

The group with the largest *less than excellent* rating was the Facilities/Security/Commissary staff. They also rated the usefulness and relevance of the training significantly lower than most other groups (Figure 5). All participants were asked to respond to two semantic differential items about the usefulness and relevance of the training on a 5-point scale where 1 is *not useful/relevant* and 5 is *very useful/relevant*. Almost all groups averaged above a 4 on the 5 point scale, except the Facilities/Security/Commissary group, who felt that the training was significantly less useful (p<0.05) than all other groups except for animal care staff. As far as

relevance of the training, again the facilities/security/commissary group reported the training was significantly less relevant ($p < 0.05$) than all other groups.

Figure 5: Department-group breakdowns show consistently high ratings of usefulness and relevance except for Facilities/Security/Commissary group
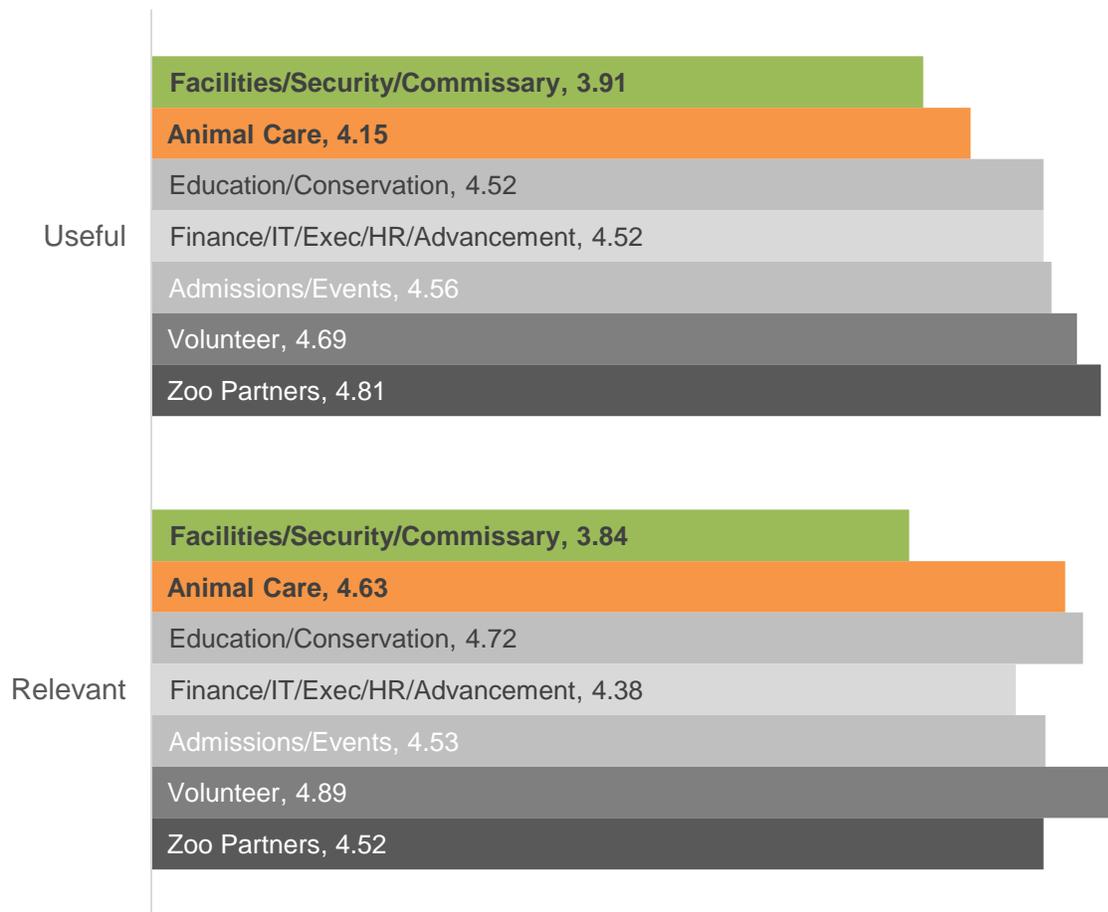

The post-training survey also included an open-ended question asking the respondent to provide additional details about their rating. For example, 19% (n=46) of all respondents said they appreciated that the training was customized to their department role, and 9% (n=22) said that they thought good examples were given in the training. This could have led to the overall improvement of the OER across zoo function. However, at the same time, 5% (n=13) said the training lacked specific examples of how this work pertains to their job, and 9% (n=23) said they didn't think the training was customized enough for their roles, or empathy best practices aren't relevant to their roles. This could be why the facilities/security/commissary group indicated the training as so much less useful and relevant to them than the other groups did. In fact, none of the respondents from their group indicated they thought the training provided good examples and would have like the training to better consider their department's role at the zoo. During an informal interview, a member of the facilities department reinforced this sentiment by stating that they really don't interact a lot with visitors during their day-to-day jobs, and they are more duty bound in their job functions (e.g. this needs to be painted), so empathy practices are not a focus for their team. So, while the training might have been customized enough for some departments who saw themselves reflected in the examples provided, for those that perceive their overall relationship to the empathy best-practices as less relevant, the training might need additional flexibility in delivery. This may look like reconsidering specific job functions that are not guest-focused and the best way they can play in support the initiative.
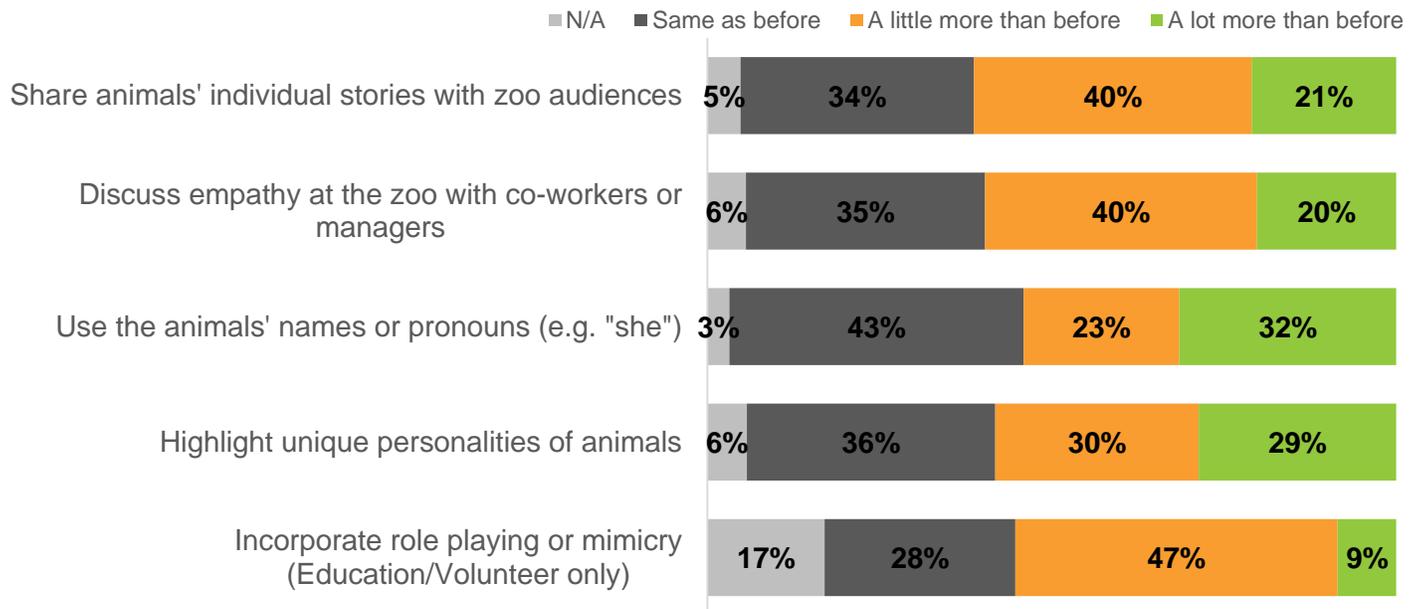
One Touchpoint vs. Multi-Touchpoint Training

As mentioned above, some zoo staff and volunteers had only one touchpoint, the Fostering Empathy for Animals Training, while others had multiple touchpoints, such as additional 1:1 coaching or content feedback sessions. To compare the effectiveness of these two training structures on driving the use of empathy practices in zoo roles, the longitudinal post-survey asked participants for a specific example of how they applied empathy practices in their work. These comments were then coded into the five empathy best-practices categories, as detailed in Table 1 above. When combining all one-touchpoint participant responses and all multi-touchpoint responses, Figure 6 indicates there is a difference between groups. Those that had just one empathy training tended to report the singular focus of introducing the animal, which is also the most commonly adopted practice overall. Those that were exposed to empathy in multiple training or coaching engagements were more likely to also be supporting ways to inform the audience. It's hard to say whether the distinction in these responses is a difference in actual practice or a difference in one' ability to recognize the use of empathy practices in their work.

Figure 6: Recipients of multiple empathy training touchpoints were more likely to self-report applying practices from more than one empathy bridge step.
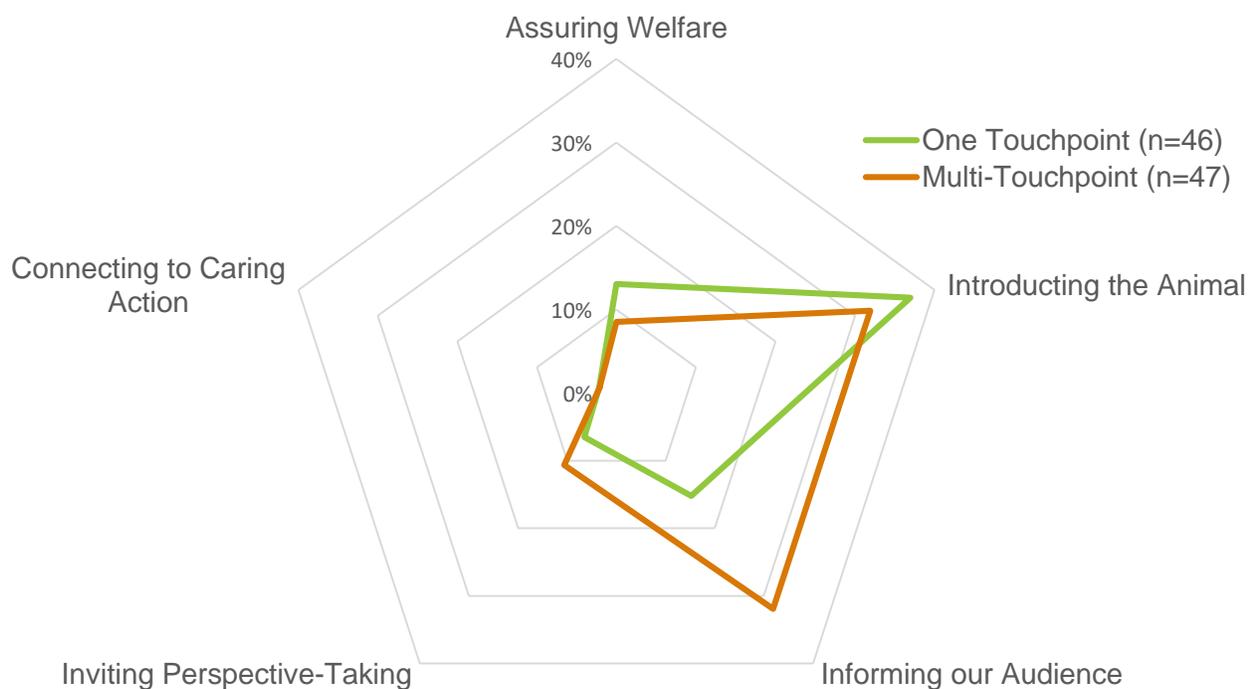
Survey respondents were also asked to indicate, on a 4-point scale, whether they were now applying a series of empathy based practices more now that they received the training. (Figure 7). When looking at one touchpoint vs. multi-touchpoint groups, those that had multiple touchpoints were more likely to report improved use of all empathy practices (65%), than those with only one touchpoint (49%). Additionally, almost 1 in 2 staff (48%) who received only one empathy touchpoint reported no change in use of any of the empathy practices. At the very least, staff and volunteers who had more than one empathy related touchpoint were more familiar with the best practices and better able to perceive themselves as using the practices in their roles.

Figure 7: Overall, the majority of all respondents (n=124) indicated that they were doing the empathy best-practices either a little more or a lot more than before they had empathy training.

Legend: N/A ■ Same as before ■ A little more than before ■ A lot more than before

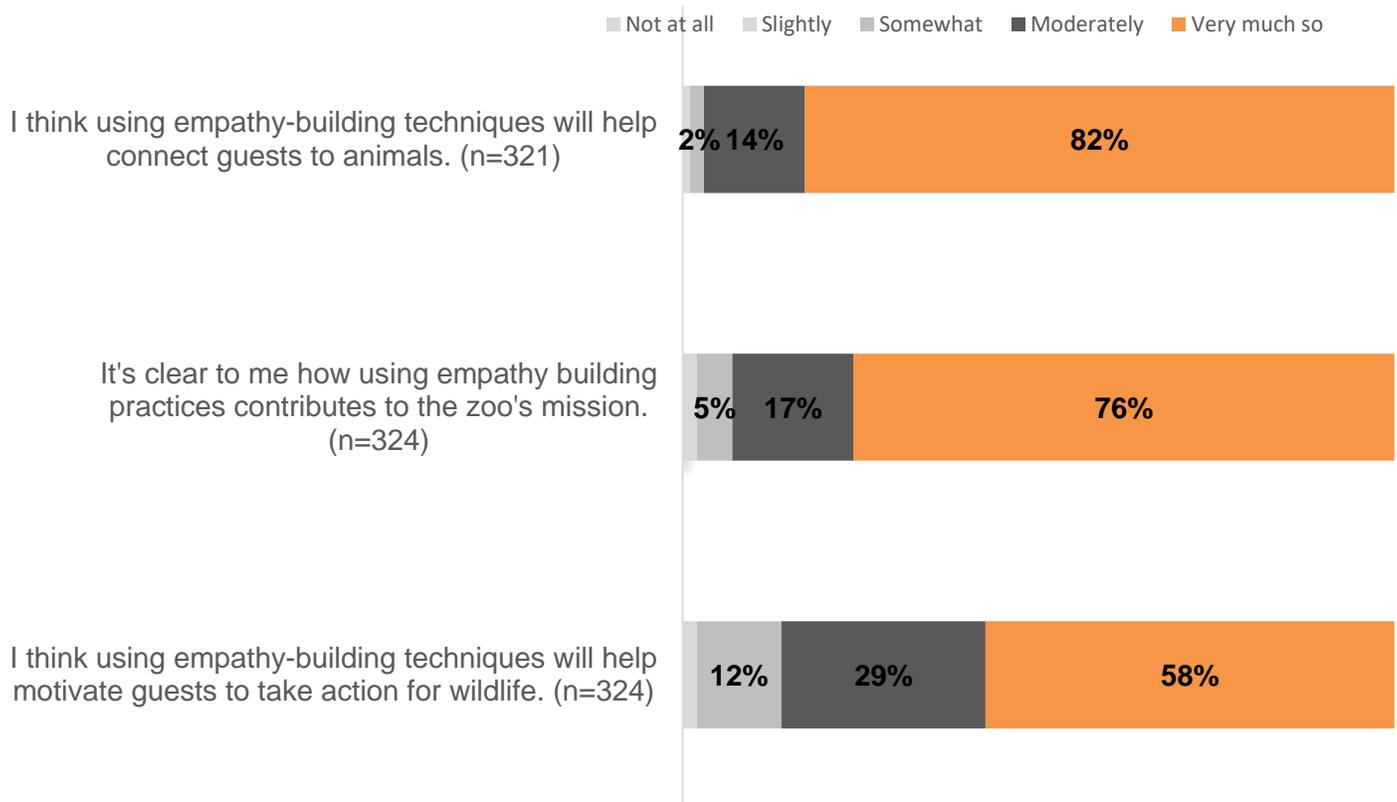| Practice	N/A	Same as before	A little more than before	A lot more than before
Share animals' individual stories with zoo audiences	5%	34%	40%	21%
Discuss empathy at the zoo with co-workers or managers	6%	35%	40%	20%
Use the animals' names or pronouns (e.g. "she")	3%	43%	23%	32%
Highlight unique personalities of animals	6%	36%	30%	29%
Incorporate role playing or mimicry (Education/Volunteer only)	17%	28%	47%	9%

In addition to asking explicitly about the use of some of the empathy best practices we also asked whether staff and volunteers have discussions about empathy at the zoo with co-workers or managers. Increasing informal discussions about the concept of empathy within teams and departments can indicate an embedding of empathy into company culture. 60% of respondents indicated that they had discussions about empathy either *a little more* or *a lot more* than before, compared to 41% that indicated their empathy discussion rate either stayed the same as before the training or wasn't applicable to them. During the informal interviews, participants were asked, "Is empathy something that is encouraged on your team or that you encourage? Does your manager talk about this topic?" and 11 out of 13 people interviewed stated that yes, empathy the word itself, or the theories and practices behind empathy, come up in discussions on their teams.

One thing to note for future trainings is that those that had multiple touchpoints following Empathy Training 202 were somewhat self-selected, in that they indicated on their survey when answering the question, "What kind of ongoing training, resources, or support would be most beneficial for you moving forward," that they wanted to have their programs/etc. observed or they wanted more follow-up information or feedback. This may have given us skewed results compared to if we were to randomly select who would receive multiple touchpoints of observation or feedback. For future trainings, it will be important to decide whether participants should be self-selected to attend multiple touchpoints or if they should be randomly selected.

Staff and volunteer understanding of empathy concepts and relationship to mission. In an effort to understand whether staff and volunteers had increased their understanding of empathy concepts and how they contribute to the zoo's mission, on the post-training self-report survey participants were asked to rate their agreement to three statements on a 5-point scale where 1 was *Not at all* and 5 was *Very much so (*Figure 8).

Figure 8: Majority of respondents agree *very much so* that empathy-building practices help connect guests to animals, will motivate guests to take action, and contribute to the zoo's mission.

Legend: ■ Not at all ■ Slightly ■ Somewhat ■ Moderately ■ Very much so

Statement	Somewhat/Slightly	Moderately	Very much so
I think using empathy-building techniques will help connect guests to animals. (n=321)	2%	14%	82%
It's clear to me how using empathy building practices contributes to the zoo's mission. (n=324)	5%	17%	76%
I think using empathy-building techniques will help motivate guests to take action for wildlife. (n=324)	12%	29%	58%

This follows from the Year 1 evaluation as well, where the majority of respondents indicated their agreement to these statements. The statement with the largest percentage (82%) of participants answering *somewhat* was in response to thinking using empathy-building techniques will help motivate guests to take action for wildlife. When looking at department groups in comparison to each other, the Facilities/Security/Commissary groups rated their average agreement with this statement significantly lower ($p<0.05$) than most other groups (except for the Animal Care and Education/Conservation group). Additionally, the Animal Care group rated their average agreement significantly lower ($p<0.05$) than the Zoo Partners group, and the Volunteer group. These ratings are in agreement with sentiments expressed anecdotally in the informal interviews conducted. One interviewee from the Facilities/Security/Commissary group, a more internally facing department, didn't understand the overall driving purpose of using fostering empathy for animals was to motive guests to action.

Additionally, one member of the Animal Care group thought there were ways other than empathy to drive caring action,

> *"I know that there's lots of studies that show what really connects people but like I said, I'm kind of old timer. So, for me, I would like the zoo to be a place where people come and learn about animals for what they are. And learning to appreciate them, because… they're not people with fur on. Um, so, you know, having animals do behaviors for programs that, you know, aren't really naturalistic, in order to like, make a connection, I don't, I don't feel like you have to do that. And I feel like that's kind of the easy way out. And as an educational organization, we should try to make people think rather than just have a real visceral reaction."*

Finally, a volunteer with a background in psychology felt that there were too many cognitive leaps for a visitor to take in order for staff to be able to instill empathy in visitors to drive behavior change. He stressed that he was eager to see more solid research on this topic. In an attempt to simplify the training and streamline it without so much of the theory behind empathy (as was suggested from Year 1 evaluation report), potentially some of the real purpose and support for the practice was lost. Moving forward, a better balance could be struck between providing reasoning for the practice, and concrete examples of the practice. As connecting to caring action is a foundation of the empathy bridge framework that is driving this training, it is important to ensure that this connection is being more explicitly explained during future work around the empathy initiative.

Staff/volunteers confidence in applying effective empathy practices.

In an effort to understand whether our staff and volunteers have increased confidence in applying effective empathy practices, on the *post-training self-report survey*, participants were asked to rate their agreement to a statement on a 5-point scale where 1 was *Not at all* and 5 was *Very much so* (Figure 9).

Figure 9: The majority of participants indicated they strongly agree that they feel confident in their ability to use empathy-building techniques when talking to guests.
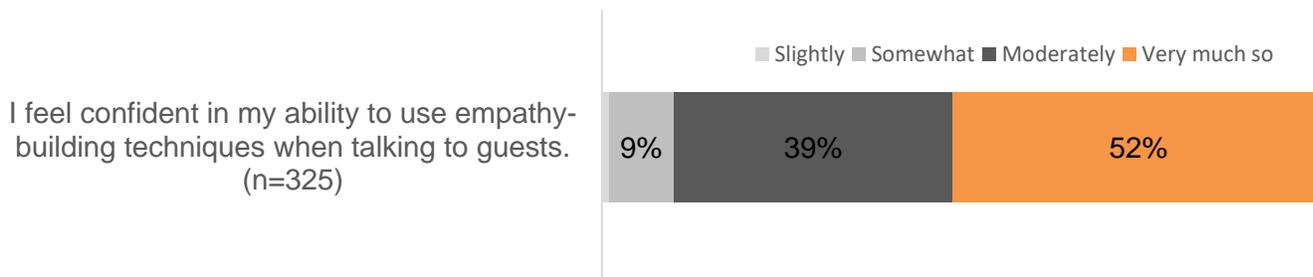

When comparing department groups to each other, there were no significant differences for staff feeling confident in their ability to use empathy-building techniques when talking to guests. In other words, no matter what department participants were in, staff were equally as likely to feel confident in using empathy best-practices.

During the post-training self-report survey, participants were asked to fill out a self-addressed postcard where they recorded one to three ways they could incorporate empathy into their day-to-day activities at the zoo. These post-cards were then returned to participants at work around two months later. 271 participants total completed post-cards. In an effort to understand what empathy best practices participants identified as possible to employ in their roles, post-card comments were coded according to the five categories of empathy bridge technique (Table 2 above). The coding of comments for all respondents (n=271), shows that some empathy best practices were identified as much more accessible for staff and volunteers to employ in their

roles (Figure 10). A total of 35% of all zoo staff and volunteers self-identified "Introducing the Animal" and 29% self-identified "Informing our Audiences" as empathy best-practices they could employ in their roles. However, only 8% of respondents indicated that they could incorporate the practice of *Connecting to Caring Action* into their day-to-day activities at the zoo. This follows from results to the question, "I think using empathy-building techniques will help motivates guests to take action for wildlife" which had the largest percentage of respondents indicating that they only somewhat agreed out of all of the scale items on the post-training survey. As mentioned above, it is clear that there needs to be more emphasis on this final empathy best practice, *Connecting to Caring Action.* The result demonstrates a need for Woodland Park Zoo to provide staff and volunteers with recommended action messages that align with the zoo's new strategic direction. Disseminating these as part of the empathy training is vital to the successful use of the bridging technique.

Figure 10: All respondents from the post-card data show that some empathy best practices are identified as more achievable than others. (n=271)
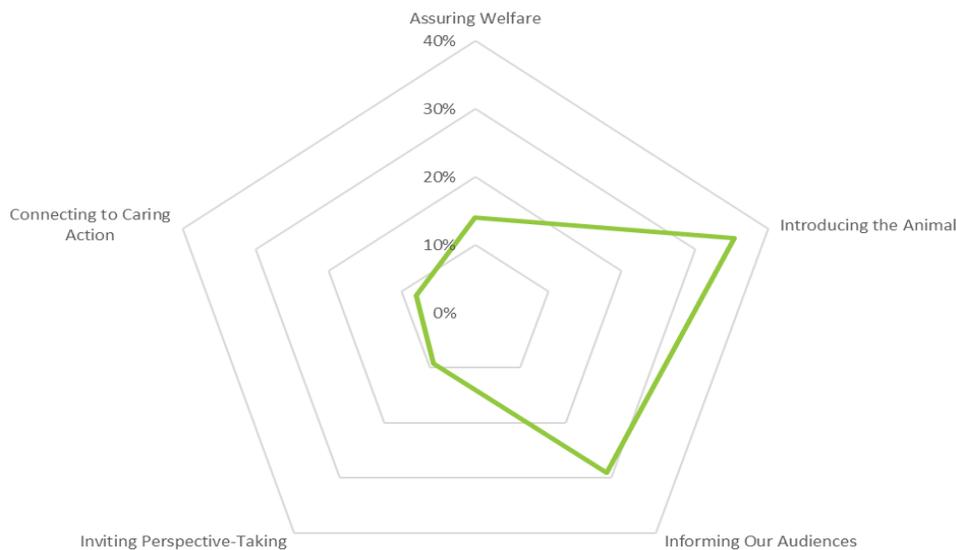

The post-card responses were also analyzed by department group, and some interesting patterns emerged. It is clear that members of some departments are much more strongly inclined to indicate, and better suited to execute, certain empathy-best practices for their day-to-day use than others. For example, the Education/Conservation grouping indicated more often than the other department groups, that they could integrate *Inviting Perspective Taking* into their day-to-day activities at the zoo. This may be because the Learning and Innovation department works with summer camps and other programs where staff are with the same program participants for an extended period. This allows for more extended empathy programming than just a short interaction with a guest that a volunteer.

The Admissions/Events grouping indicated most frequently that they can *Assure Welfare.* This follows from their job roles, as they are a very forward facing, guest focused department and often have to deal with situations that require guests to be reminded of the importance of animal welfare at the Woodland Park Zoo. For example, one respondent said they could use empathy best practices, "*By showing clients and guests that our animals have choices and we care about their feelings when they wonder why they may have not gotten the animal encounter that they wanted.*"

Finally, the partner vendors who are contracted with the zoo indicated that they could directly support *Connecting to Caring Action.* The nature of a point of sale interaction at the zoo gives employees a much longer time to interact with guests, typically at the middle or end of their visit. Zoo store employees ask guests

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whether they want to round their purchase up to the nearest dollar to support conservation. This is a prime opportunity to promote a caring action while at the zoo.

Figure 11: Postcard responses indicated different preferences for inclusion of empathy practices depending on departmental role.
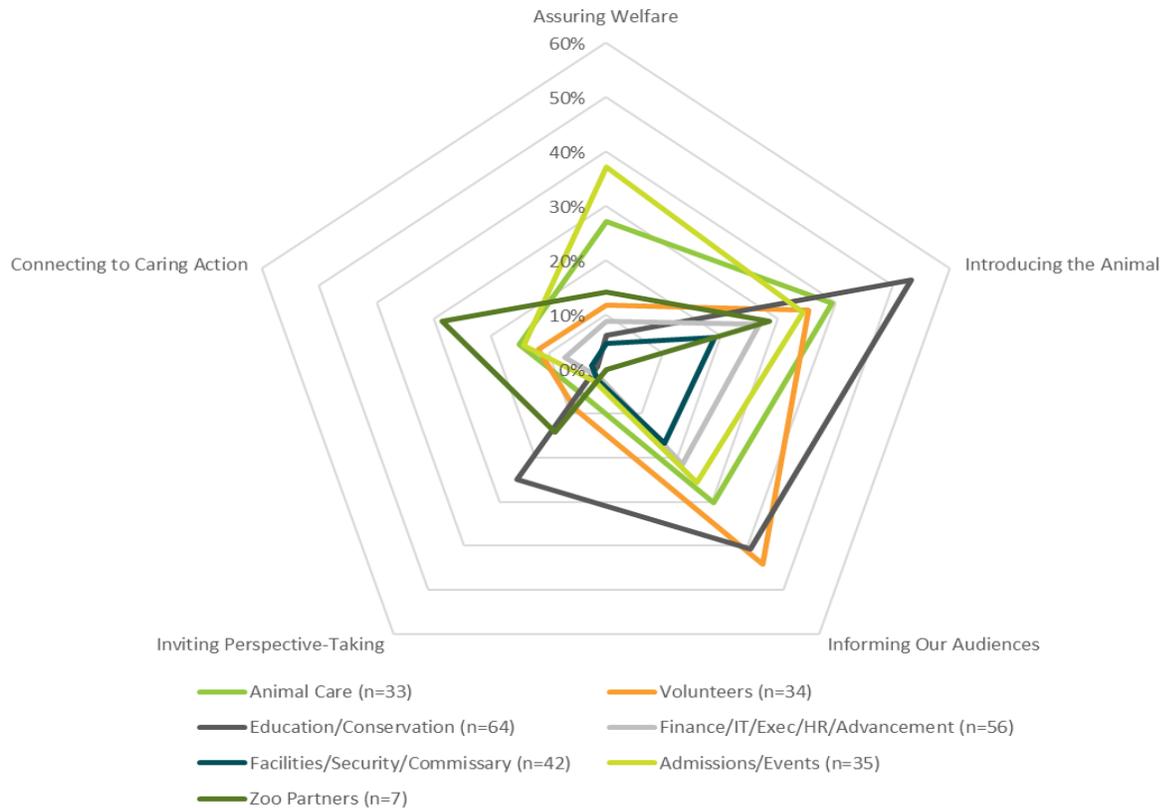
Institutional Support Needed to Foster Effective Empathy Practices

As is also indicated above, the customization of future trainings should touch not only on the specifics of different zoo departments, but should think explicitly about what empathy practices would be most well suited for different roles within departments. It may be that not every zoo staff member or volunteer is able to integrate all of the best-practices into their day-to-day activities, but that they can successfully accomplish one or two of them.

Additionally, it may be that there are additional, supporting practices, that need to be accomplished, and supported institutionally, before staff and volunteers are able to enact an empathy best-practice. In fact, 65% of post-card respondents listed a number of other things related to empathy that they could incorporate into their day-to-day roles at the zoo, that didn't belong to one of the empathy best-practice categories, such as learning more information about the zoo and the animals (e.g. animal names, pronouns, stories), or increasing engagement with guests overall.

It is clear that some types of roles are more equipped for addressing different empathy best practice categories, and that some have much simpler goals of simply engaging more with guests in general or learning more information about the zoo, so asking them to do these best practices might be too lofty of a goal. Understanding what roles and functions at the zoo are best suited for successfully and regularly accomplishing which empathy best-practices, and understanding what institutional support is needed to foster effective empathy practices, will help build an overall stronger path to fostering empathy for animals in our zoo guests.

Ongoing Training, Resources or Support Needed

When asked on the post-training survey to indicate which types of ongoing training or resources they would find beneficial, much like the post-card entries, the responses varied based on zoo role. Of the options provided, the largest percentage of animal care staff (45%) and volunteers (53%) indicated that they would most like to receive a one-time observation of their programs or materials with follow-up feedback, while Finance/IT/Exec/HR/Advancement (47%), Facilities/Security/Commissary (29%) and Zoo Partners (56%) indicated that they would like a handout or reference guide. When asked to specify what this handout or reference guide would look like, most people indicated that they need some sort of guide to the animal's names, facts, stories, and empathy examples in order to apply empathy best practices. This follows directly from our analysis of comments above, and shows that some departments have a need to simply learn more about the animals before they are able to perform any empathy best-practices, while other departments are already suited to employ the practices, and simply need feedback on how they are doing. Education/Conservation (48%) and Admissions/Events (60%) most often indicated that they would like multiple avenues of additional support.

In October 2019, at the conclusion of the grant cycle, participants were sent an online, longitudinal post-survey a minimum of 3 months after attending empathy training, to better understand how staff and volunteers were employing and sustaining their empathy practices in their day-to-day zoo roles.[3] A total of 82% reported they had applied empathy practice or reflected on how it relates to their role after attending the training. Staff and volunteers who said yes were then asked to provide a specific example of how empathy was showing up in their work. These answers were then coded according to the empathy best practices, as they were for the post-card responses. Overall, when comparing all respondents' answers to how they are applying empathy best practices from the *post-training self-report survey* to the *longitudinal post-survey,* the responses were very similar. In other words, the ways in which staff and volunteers identified they could employ empathy best practices during training were the same ways that the practices were identified as being applied in their work (Table 3)

Table 3. The proportion of staff reporting implementation of the five empathy bridge steps were similar to the practices staff and volunteers said they planned to try after attending training.

	Post-Training, Self-Report Post Cards	Longitudinal Post-Survey
Assuring Welfare	14%	11%
Introducing the Animals	35%	34%
Informing our Audiences	29%	24%
Inviting Perspective-Taking	9%	9%
Connecting to Caring Action	8%	2%

The smallest percentage of respondents on the *longitudinal post-survey* indicated that they had employed the best practice of "Connecting to Caring Action. This could be because this aspect of the empathy framework was the least clear to training participants, and that there was a lack of clear examples that can be given about what staff and volunteers can say for this best-practice. One interviewee noted, "*I feel like the next phase should be more explicitly connected to conservation actions.*"

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[3] Because direct emails for Zoo Partner staff were unavailable, they were not successfully included in this longitudinal post-survey.

Additional Barriers to Applying Empathy Best Practices

While we have already identified some of the challenges that different staff and volunteers may have encountered when trying to apply empathy best practices, we also asked longitudinal survey participants, "What, if any, challenges or barriers have you experienced in applying empathy practices in your position at the zoo?". As was the case from the *post-survey self-report training* survey it is clear that zoo staff and volunteers are still wanting for information, like names and stories, about the animals that live at the zoo. While animal care staff have more frequent access to animal names, pronouns, personalities and stories, other departments are still in need of this information in order to employ best-practices without barriers. During the informal interviews, several different people articulated this. For example, one interviewee stated, "*I wish there was just like a database. Like, I wish I knew a little bit more about the animals.*"

Also of note is that the animal care multi-touchpoint group indicated that they have challenges balancing using empathy practices with other strategies of engaging guests, such as natural history presentations. During an interview with one animal care staff member, they articulated this sentiment more clearly,

> "*I personally don't like talking down to the public, like even kids. I feel like we don't have to, like really dumb things down for people to connect with animals. And it seems like the sort of what we were being encouraged to do was to really anthropomorphize and, and kind of, for lack of a better word, kind of be goofy. I don't feel like we need to do that in order for people to be interested in them.*"

Additionally, as has been shown throughout, providing clearer examples of empathy interactions, and how it can be used in symphony with other tools, are needed. Moreover, while the training does explicitly state that empathy is only one avenue for driving beneficial action, this should be stressed more intentionally to department groups that might encounter this challenge most often. The reasoning for using empathy, over the other motivators for conservation behavior should also be stressed. As one interviewee stated,

> "*There are lots of motivators for conservation behavior …and there are other motivating factors but many of them are really negative. And we're not finding that they work or they work in pockets, but they're not really working in a global shift way where we all just learn to live in a different, more sustainable way.*"

All departments noted that using best practices is challenging due to infrequent or short interactions with guests. This was noted most often by internally-facing departments, whose day-to-day roles keep them behind desks as opposed to on zoo grounds. Even though respondents mentioned interacting with guests more often as a way they could practice empathy during the post-training survey, they are still finding it challenging to do so in practice. It is clear that if their zoo role does not support this, then they are unlikely to make this change without additional support. As the empathy initiative continues, it will be important to help these more internally- facing department identify how they can make time to interact with guests, or find alternative ways that they can support empathy towards animals within the zoo's culture, such as in their donor or member

Keeper Regina introduce Blossom, an opossum, to a crowd at Mobile Zoo.

emails, or social media posts. Alternatively, staff and volunteers that interact most with guests noted that it is

often difficult to foster empathy while trying to balance guest expectations or beliefs. Because Woodland Park Zoo is a customer service organization, it is important that staff and volunteers provide guests with a great customer service experience. As this understanding is a value that helps support the first empathy best practice, assuring positive welfare, in future trainings it will be important to help participants identify that providing good customer service is valuable to promoting empathetic attitudes and connecting guests to animals outside the zoo.

RECOMMENDATIONS

1) **Customize trainings to role type**. Empathy Initiative Trainings, and the effective empathy practices they promote, should be unique to departments. However, even more specifically, they should be customized to the different roles within departments and to the different types of guest engagements that those roles represent. In all trainings, it should be articulated that everyone has a role in supporting fostering empathy for animals, but that everybody's role might look different. As is shown in the diagram below, someone that just has occasional, opportunistic, brief engagements with guests might be best suited to tell guests about the animal's welfare (e.g. "Our animals have free choice to access whatever space they like") or introducing the animals (e.g. "Yola, one of our Lowland Gorillas, lives in this habitat"). Those that have more purpose driven, although brief, interactions (e.g. admissions gate or docent cart), might be able to Assure Welfare, Introduce the Animal and may be able to "Connect to Caring Action" (e.g. Quarters for Conservation). Those roles that allow for more extensive, educational engagement (e.g. summer camp) may be better equipped to go through all of the steps of the empathy bridge. It would also be important to note that no single individual would fall into just one of these categories all of the time.
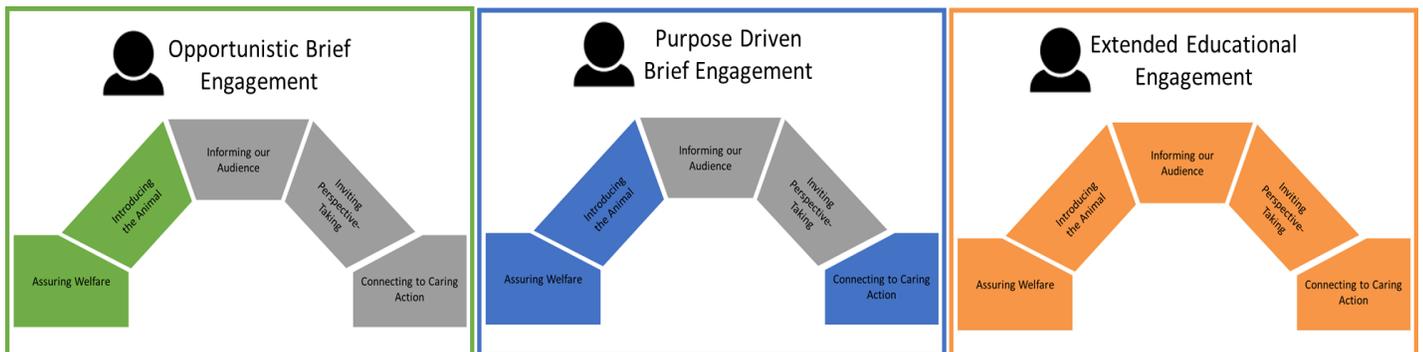
2) **Connect to caring actions**. Future empathy initiative trainings and touchpoints need to articulate more clearly the goal of Fostering Empathy for Animals, which is to drive caring action. Additionally, Woodland Park Zoo needs to provide better theoretical and research based support for this concept, in addition to providing clear examples of caring actions that staff and volunteers can share with guests.

3) **Include zoo partners.** The employees that work on zoo grounds for our contracted vendors represent a key work force, as they are sometimes the only customer service roles with which guests interact. Understanding how Zoo partners can be better involved and supported is important not only to this initiative, but to every initiative at the zoo. Moving forward, the zoo should be thoughtful of including all staff in zoo wide trainings and initiatives. This will not only increase the effectiveness of the initiative but will also increase the experience of the zoo partners, as it provides them with more connection and important context for the work they are doing.

4) **Follow a multi-touchpoint training model for staff and volunteer roles with the greatest opportunity for impact.** The increased success of a multi-touchpoint training model demonstrates that as the initiative continues, providing avenues for multiple, diverse interactions on the topic is valuable. This also speaks to the importance of having a training coordinator devoted to the topic, as they have the capacity and expertise to successfully provide multiple touchpoint opportunities to staff and volunteers.

5) **Institutional support is needed to foster effective empathy practices.** Across all departments, resources and opportunities need to be made available to support training on empathy best practices and promote discussion and reflection on empathy practice as it relates to one's team or role at the zoo.

Fostering Empathy Through Programmatic Experiences

During this granting cycle, the zoo modified or created five empathy-based, ambassador animal programs that reach audiences both on grounds and out in the community. An added classroom program called *Living and Thriving* was created to scaffold pre and post learning in alignment with the *Care for Animals* classroom program. The intent of these programs was to support the achievement of the grant's second outcome.

> **Outcome 2:** *Participants in programs aimed at encouraging empathy and compassion demonstrate greater awareness and understanding of animals' needs and increased positive attitudes towards animals, such as respect or appreciation.*

To support this driving outcome the programs targeted varied audiences, from early childhood-aged to seniors, and were delivered in varied settings from on grounds at the zoo to elementary school classrooms, community centers, and area festivals. This presented a great opportunity to expand the reach of these programs, but presented a challenge in implementation of evaluation strategies that were responsive to participants' developmental stage or background and were appropriate for the contextual setting. With this variation, the decision was made to focus most evaluation efforts on the programs engaging children and youth, including *The Nature of Growing Up, Care for Animals* and *Living and Thriving,* with the latter two delivered in the classroom*. Living and Thriving* was also included in the evaluation. See table 4 for an outline of these programs' intended audiences and program formats.

Table 4: Target programs' intended audience and format.

Program	Target audience	Location of program	Program duration
The Nature of Growing Up	K-3rd grade field trip groups	Scripted theater program	15 minutes
Care for Animals	All ages	Semi-structured classroom program	50 minutes
Flights, Camera, Action	All onsite guests	Scripted theater program	15 minutes
Living and Thriving	3rd – 5th grade classrooms	Semi-structured, multi-day classroom program	50 minutes

METHODS AND SAMPLE:

A mixed methods approach was utilized to engage in meaning-making across the spectrum of program offerings and to build empirical understanding of these programs' achievements. To support the evaluation of this initiative the zoo utilized data from three primary sources:

1) **Implementation of empathy-based practices in programming:** The peer assessment tool (see Appendix A), designed to record the frequency of use of effective empathy practices in different programmatic settings, was used to conduct systematic observations of *The Nature of Growing Up, Care for Animals,* and *Flights, Camera, Action!* In total 70 systematic observations of a whole program were conducted across these three offerings, with various ambassador animal staff

presenting the programs. These observations, in addition to the data gathered to measure outcome 1, also provided insight into the program variables that influence implementation of effective practices.

2) **Expressions of empathy from zoo audiences:** Integral to one's empathy development is having opportunities to practice using and expressing these skills. (Decety, 2015 and Spinrad, 2017) Observations were conducted using the *Empathy Towards Animals: Observational Framework,* a tool developed as part of the previous Measuring Empathy Collaborative Assessment Project (MECAP) to assess the ways in which our ambassador animal programs support opportunity for empathetic expression. To facilitate accuracy of recording of behaviors in larger programmatic settings when appropriate a randomly selected sub-group, such as a chaperone group or a classroom table group, were targeted for observation and their expressions of empathy were recorded. In total 52 observations were conducted across the three target programs.

3) **Program participant self-reports:** Three self-report tools were utilized to assess participant outcomes. Variation in these tools was driven by the target audiences' developmental stage, differing program settings and outcomes for the program.
   o *Nature of Growing Up* pre/post student assessment: A modified version of MECAP's semantic differential tool was designed to be used with K-2nd grade[4] school groups to measure change in attitude towards the animals and perceived similarity and differences between an animal and person's needs. Seven visiting classrooms between kindergarten and 3rd grade were recruited to participate in this assessment. Prior to their zoo visit teachers followed an implementation protocol, having their students complete the pre-assessment a minimum of 5 days before their field trip. Immediately after attending the program at the zoo the participating classrooms completed the post-assessment at the zoo. A total of 122 paired responses were collected.
   o *Care for Animals* pre/post assessment: A brief on-site written assessment completed by participating students at the beginning and end of the program. This assessment was designed to assess emotion towards the animal and perceived animal affect. A total of 178 paired responses were gathered from 3rd through 5th grade students at the beginning and end of the program.
   o *Living and Thriving* pre/post student assessment: A written assessment conducted with students at the beginning of Day 1 and the end of Day 3, was designed to measure students understanding of basic and secondary needs of animals and how to help animals thrive in the wild or in human care. In total 165 3rd through 5th grade students completed both assessments.

To support accuracy of data collection, zoo staff that gathered data using the peer assessment and observational framework, participated in trainings to familiarize themselves with the tool and its purpose. Additionally, to ensure quality and accuracy of recorded observations these staff conducted observations at the same programs prior to independent data collection, to support a high inter-rating reliability. This piloting phase informed modifications to the peer assessment tool to improve reliability of observations. For example, the piloted tool included observable indicators for use of storytelling in the program, but challenges with consistent reporting necessitated this criteria to be eliminated from the final tool.

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[4] A previous 2017 study conducted at Woodland Park Zoo found that almost 6 in 10 students visiting the zoo with a school group were in Kindergarten through 2nd grade.

OUTCOME RESULTS

Programmatic capacity to provide empathy-based programming.

During this granting cycle the project team developed new content or programs, and on-boarded new ambassador animal staff to deliver these zoo experiences to varied audiences. Observations of *The Nature of Growing Up, Flights,Camera,Action!* and *Care for Animals* were conducted to monitor and record the frequency with which program delivery modeled the steps of the empathy bridge or incorporated effective empathy practices (see Table 5). Results indicated that 97% of the 52 programs observed included introducing the audience to the animal (step 2) through using the animal's name or highlighting unique personality traits or individual preferences. For example, when talking about our trio of guinea pigs one presenter said "*Sofia's favorite food is lettuce and she's the brave one of the three."* Similarly, 93% of observed programs informed the audience about the animals (step 3) by talking about the animal's needs to thrive and in some cases comparing these to our own. In our *Nature of Growing Up* program, our young audience met Anahi, a boa constrictor, and heard that "*Anahi needs warm places in her home and she likes to climb trees just like some of you do".*

When asked on the longitudinal, self-report survey for examples of how they are applying learning from the empathy training, staff also most often mentioned practices that support step 2 and 3 of the bridge, indicating that they have the most confidence in their consistent use these practices.

Observation of assuring animal welfare with the audience (step 1), inviting perspective-taking (step 4) and connecting to a caring action (step 5) was less frequent. Similarly, staff were less likely to self-report applying these practices. Semi-formal interviews with staff found that some perceived barriers to using these practices include a lack of confidence in knowing how to best encourage perspective-taking with older audiences and a lack of clarity on the specific caring actions or conservation behaviors that the zoo aims to promote.
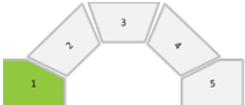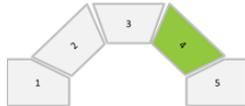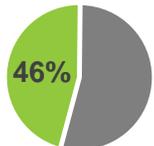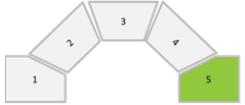

Janelle and Suzy present Flights, Camera, Action! to zoo guests at the outdoor Wildlife Theater.
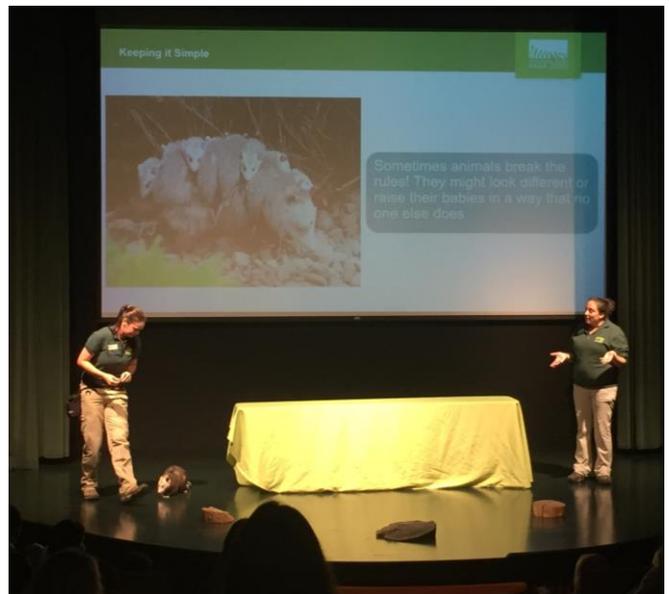
Janelle and Regina work alongside Blossom, an opossum, during the Nature of Growing Up program presented in the Paccar auditorium.

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Table 5. Observed and self-reported application of the empathy bridge steps.

Empathy Bridge step	What does it look like?	% of observed occurrence (n=52)	% of self-reported use (n=124)
1) Assure Welfare	Promoting a positive foundation of animal welfare from the audience, including recommendations and recognition of participants' positive behavior around animals.	45%	11%
2) Introducing the Animal	Reinforcing the animal as an individual through use of his or her name and sharing individual characteristics like personality traits or unique preferences.	97%	34%
3) Informing our Audience	Using storytelling and comparative framing to provide personal or natural history facts about the animal's needs, and physical characteristics.	93%	24%
4) Inviting Perspective-taking	Encouraging focused observation of the animal, inquiry, or consideration of the animal's perspective through biomimicry or other strategies.	46%	9%
5) Connect to Caring Action	Providing suggested actions or behaviors that are appropriate for the programmatic context and promote beneficial action towards animals.	34%	2%

Promoting opportunities for audiences to practice or express empathy

Observations of attending groups at the three targeted programs were conducted using the *Empathy Towards Animals: Observational Framework* documenting the frequency with which groups attending these programs verbally or behaviorally expressed indicators of empathy (See Appendix X for tool and listed indicators). The facility of these observations was to inform our understanding of the extent to which our programs promote the practice of empathy skills in the attending audiences. It's important to note that this tool does not document feelings of empathy that are not verbalized or observable in empathy-based experiences that are not easily observed

Results indicated a distinct difference between our theater-style, scripted programs and our semi-structured, classroom-based program. (see Table 6). Groups attending the theater programs were much less likely to engage in outward expressions of empathy than audiences attending *Care for Animals.* These distinctions were primarily driven by the different parameters and opportunities presented by these presentation formats. For example, *Care for Animals* is structured around talking points, but includes flexibility for the presenter to respond to both cues from the animal, like talking about the animal's spontaneous behaviors, and frequent questions from the audience. This program is typically presented in a more intimate setting allowing for closer, nuanced observation of the animal and the opportunity for the audience to ask questions mostly throughout. In the framing of this program the presenter was also more likely to use inquiry to engage the attendees in discussion of the animal's needs, observations of the animal's current emotional state, and the relationship between the animal and his or her keepers. Additionally, with only one animal in the program, this typically facilitates a period of 10 to 20 minutes to view the animal.

Keeper Rachel chats with seniors at a senior living center about Skyanna the porcupine, as part of the Care for Animals program.

The two theater-style, scripted programs, *Nature of Growing Up* and *Flights, Camera, Action!* include the participation of multiple types of animals and rely primarily on unidirectional communication to engage the audience. This format promotes opportunities to draw comparisons between different taxa or species, as well as supports consistent delivery of a multi-faceted program and the use of storytelling narratives to promote positive framing. It also, however, has some inherent parameters that can negatively influence the promotion of empathy expressions in the audience. For example, to support positive animal welfare program attendees are asked to stay quiet and seated and to refrain from asking questions such as inquiry around observations of the animal. In addition, the comparatively further distance from the animal, shorter observation period for animal viewing, and the need to deliver a script within the specified duration minimizes opportunities to promote empathy-driven dialogue or conversation during the program. Both programs include an informal Q and A session after the formal program concludes with a small minority of attendees opting to remain and participate.

Table 6. Proportion of programs where the empathic expression was observed from participants

Empathic expression	Nature of Growing Up (n=17)	Flights, Camera, Action (n=19)	Care for Animals (n=16)
Understanding an animal's needs	1	2	15
Perspective-taking	6		13
Demonstrates appreciation or respect for animal	8	4	16
Demonstrates curiosity or interest in animal	6	6	16
Expresses desire to help animals			9
Demonstrates caring behavior or action towards animals	13	16	14
Recognition of animal as an individual	5	2	14

In almost all cases the caring behavior demonstrated was self-regulation of one's own behavior around the animal, such as staying quit and seated.

Understanding of Animal Needs

A primary aim of the zoo's empathy-based programs is to increase awareness and understanding of an animal's needs, both the basic needs (food, water, space, air, shelter) that are needed for all animals' survival and secondary needs to thrive or be healthy, safe, and happy. Pre and post embedded assessments were conducted at the start of day 1 and end of day 3 of the *Living and Thriving* program. Designed to assess the students' ability to understand and provide for different secondary needs, the pre and post tool includes three, scenario-based, open-ended questions where students were asked to provide examples of how they could provide for a commonly known animal's need to be healthy, safe and make choices.   (see Figure 12)
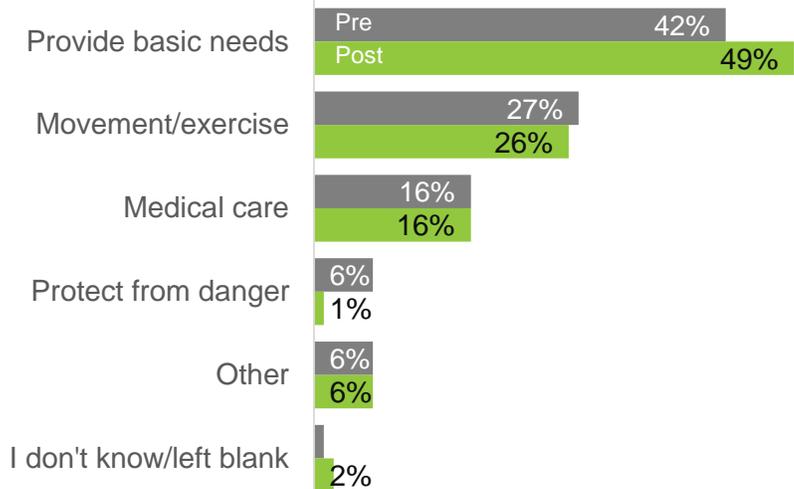
Results of the pre/post assessments indicated that prior to day 1 of the program there was a high level of awareness of the needs of animals that are common to many of our lives, such as dogs, cats and other companion animals. On both the pre and post assessment, the students most often mentioned basic needs as a way to support an animals' secondary need to be healthy. Providing exercise and medical care were also common responses. In addition only 1% of students said "I don't know" or left the question blank on the pre assessment.

When asked how to support an animal's need to be safe, on both the pre and post assessment approximately a quarter of students suggested ways to create a safe environment, such as "*let him sleep inside"* or *"give them a space that's their own."* They also frequently mentioned providing both physical comfort ("*I would comfort him when something scary happens*") and emotional kindness ("*Give him lots of love and don't shout at him."*). Again very few respondents left this question blank or indicated they didn't know how to help an animal feel safe.
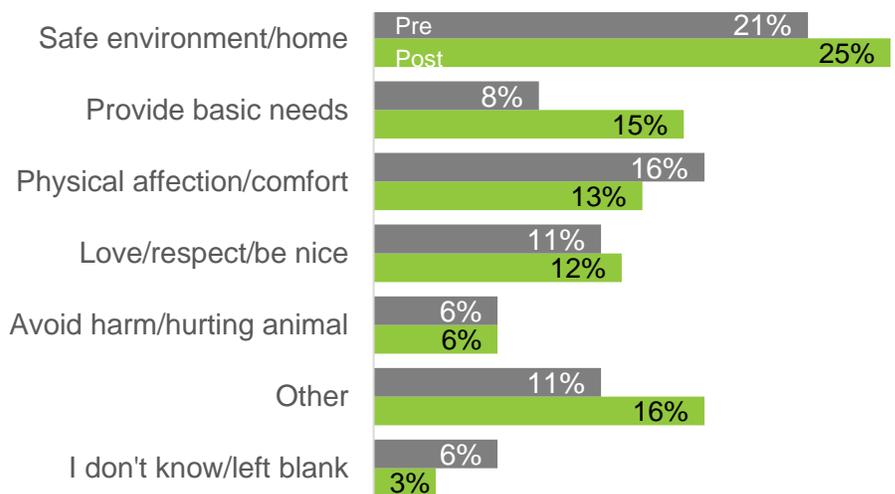
The students did, however, show gains in understanding about how to provide for an animal's need for choices. The opportunities to thrive, an AZA framework for positive animal welfare, is emphasized on day 2 in the classroom. Prior to the program just over 20% provided no response, and this fell to 10% on the post. Also there was a significant increase in the proportion of students presenting ways to add variety to an animals typical day or routine, such as "*Give her different toys, food and other necessities so she can have choices*" or "*Let her decide if she want to play laser with me or sleep*".

Figure 12: Suggested ways to support an animal's needs
A comparison of students' pre and post responses (n=165)

Need to be Healthy

	Pre	Post
Provide basic needs	42%	49%
Movement/exercise	27%	26%
Medical care	16%	16%
Protect from danger	6%	1%
Other	6%	6%
I don't know/left blank		2%

Need to be Safe

	Pre	Post
Safe environment/home	21%	25%
Provide basic needs	8%	15%
Physical affection/comfort	16%	13%
Love/respect/be nice	11%	12%
Avoid harm/hurting animal	6%	6%
Other	11%	16%
I don't know/left blank	6%	3%

Need to Make Choices

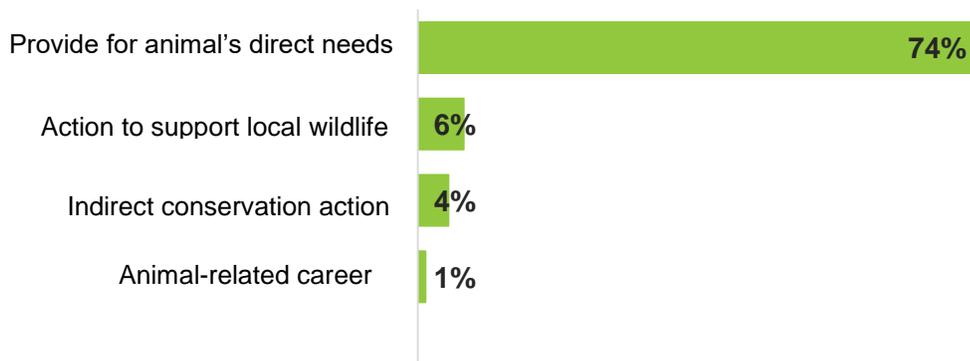|	Pre	Post
Offer variety in routine	20%	40%
Autonomy of decisions	6%	11%
Freedom of movement	12%	7%
Provide basic needs	5%	
Other	12%	9%
I don't know/left blank	21%	10%

In addition, at the end of day 2 the students identified an animal that they themselves care about and pledged an action to take to help them thrive. Almost three quarters demonstrated awareness of the individual animal's needs, listing suggestions to provide for either the animals' basic or secondary needs. A small handful of respondents included indirect actions, such as reducing their carbon footprint or becoming a biologist when they grow up.

Figure 13: Types of pledged actions to help an animal

The pre/post assessment for *The Nature of Growing Up* also included two statement questions designed to assess understanding of the basic similarity and difference between animals' and people's needs when growing up or maturing to adulthood, the driving theme of the program's content. Students rated their agreement on a 3-point scale (yes/maybe/no). Results showed, however, that students as young as kindergarten were mostly aware of these similarities and differences in needs prior to attending.

Figure 14: Student ratings on two statements comparing animals and people's needs to grow up.
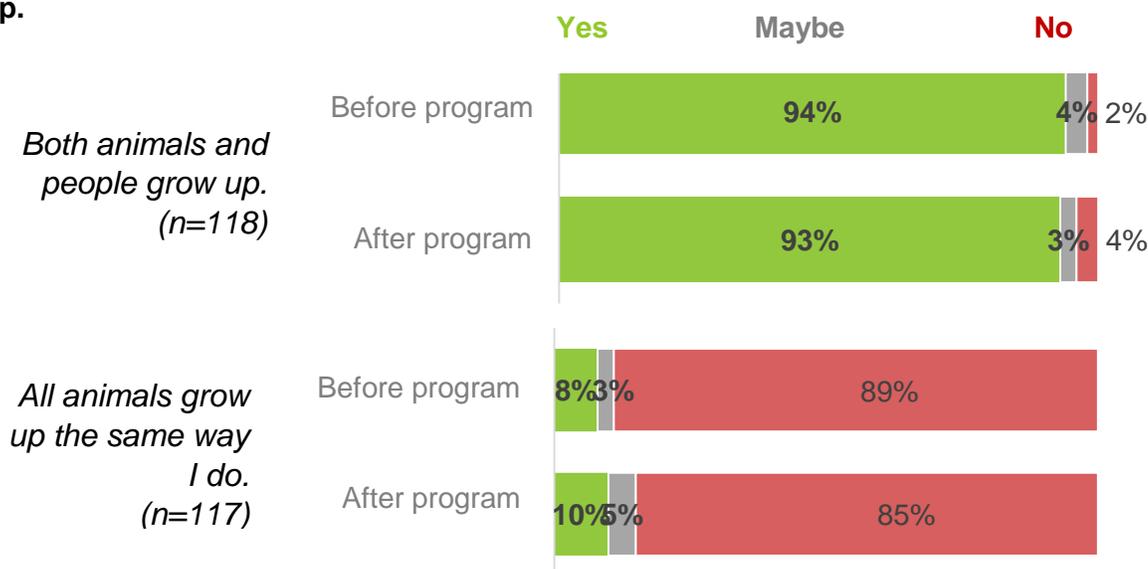
## Promoting positive attitudes towards animals.

Fostering positive perceptions or attitudes about a diversity of animals is the other primary aim for the zoo's empathy-based programs. Program content was designed to support positive framing for ambassador animals included in the programs. For example, when a snake was included in *The Nature of Growing Up* the animal keepers intentionally used descriptive

language that emphasized these reptiles' beauty compared to the other animals featured in the program. Additionally, the keepers modeled positive relationships with these animals and highlighted the animal's behavioral indicators that helped communicate the animal's current state or emotion.

Two questions were included on the pre/post *Living and Thriving* that assessed perceptions of the animals as having emotions and deserving of respect. Students rated two statements with a yes, no or maybe. Paired analysis showed respondents were more likely to show positive agreement that *animals have feelings just like I do* at the end of the program, increasing from 88% to 96% selecting yes. There was no significant change in student response on the second statement, with 85% and 86% agreement with *I think all animals, even things like snakes and spiders, deserve respect.*

Figure 15: Student ratings on two attitude statements about animals.
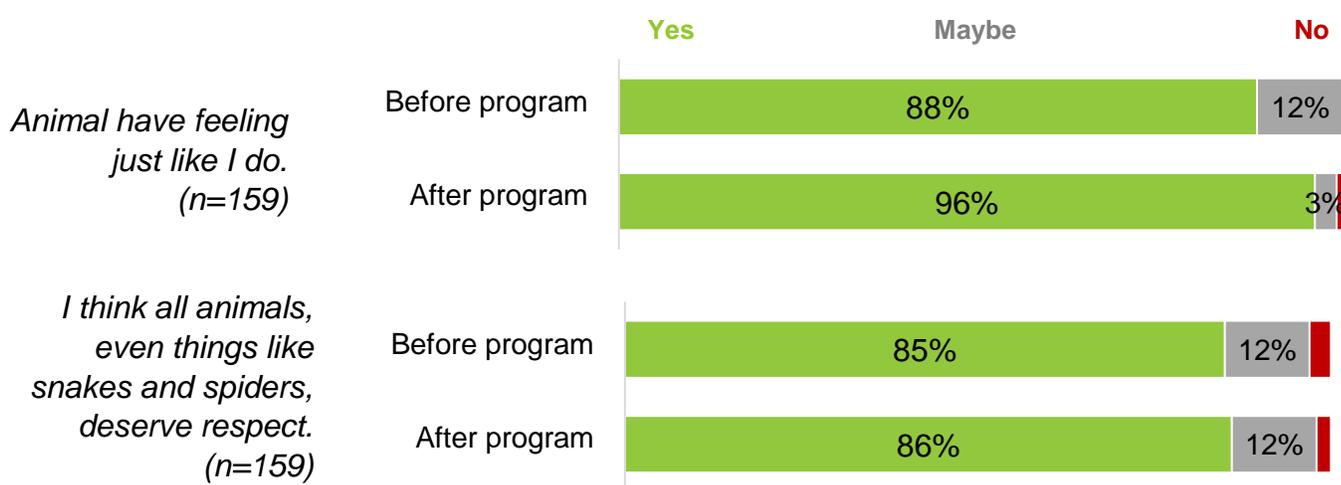
In a pre/post comparison students' self-reported feelings about meeting the ambassador animal on day 2 of *Living and Thriving,* students felt more positively towards the animal at the end of the program. For example, before the animal was introduced 19% of students said they were feeling happy to meet the animal and at the end of the class 38% said they felt happy meeting the animal.

Table 7: Students' reported emotions about meeting an ambassador animal in the classroom*
(n=178)

	Before meeting the animal*	After meeting the animal*
Angry	1%	1%
Happy	19%	38%
Nervous	7%	4%
Excited	47%	39%
Sad	1%	2%
Curious	19%	10%
Nothing	5%	4%
I don't know	3%	2%

*Students could select more than one emotion so totals may exceed 100%.

The students also perceived the animal's experience in the classroom more positively at the end of the program. Thinking that the animal was nervous decreased from 35% to 20% and perceptions that the animal is feeling happy increased from 11% to 32%.

Table 8: Students' perceptions of the ambassador animal's emotional experience or state*
(n=177)

	Before meeting the class*	After meeting the class*
Angry	2%	1%
Happy	11%%	32%
Nervous	35%	20%
Excited	12%	16%
Sad	1%	1%
Curious	26%	19%
Nothing	4%	5%
I don't know	9%	6%

*Students could select more than 1 emotion so totals may exceed 100%.

Keeper Erin introduces Adelaide, a tawny frogmouth, to students at Centro De La Raza.

The Nature of Growing Up pre/post assessment also asked the youth to indicate how they felt about seven different types of animals, both prior to visiting the zoo and then immediately after attending the program. The list included a porcupine, snake, and skunk, three animals that are regularly included in ambassador animal programs. It also included animals that would be familiar to the students, but were not featured in the live program. The included charismatic megafauna (tigers), local specie (crow), and commonly stigmatized animals (rat, spider). The students rated the animals using a 4-point, pictorial thumbs up/thumbs down scale that was successfully piloted with a similar aged audience. A snake was included in all seven programs viewed by the respondents, the skunk, Harry, was in five programs, and Skyanna the porcupine was in two programs.

Figure 16: Students showed improved attitudes about snakes after *Nature of Growing Up*
There was no significant change in attitude about the other animals listed. (n=179)
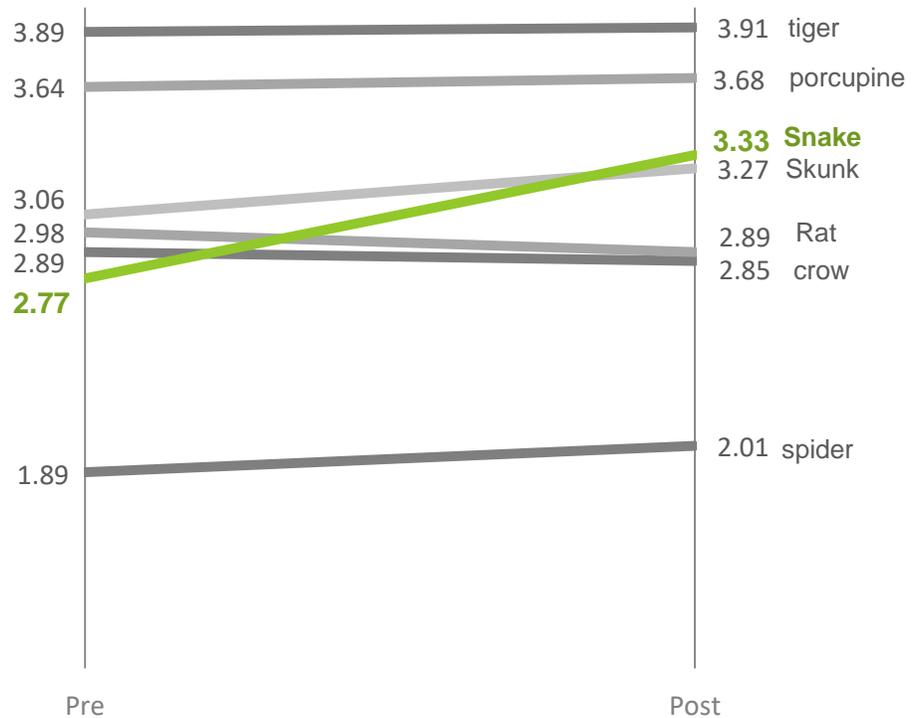
Overall the students liked tigers the most, both before and after the program. (Figure 16) They also had similar positive feelings for porcupines, with highly positive ratings on both the pre and post. In contrast, students indicated the most dislike for spiders both prior to and after the program. The only significant improvement in positive feelings towards an animal was the snake, which increased from an average 2.77 to 3.33. Possibly this change is due in part to the students having mixed feeling at the beginning of the program, as well as the positive framing of the snake in the program. The animal keepers' previous experience with audience discomfort around snakes and reptiles likely also contributed to this change. As the post-assessment was conducted within 30 minutes after attending the program, it is uncertain, however, whether this positive change was sustained or lost after their zoo visit.

RECOMMENDATIONS

1) **Find opportunities to promote audience expressions of empathy in scripted programming.** Few verbal or behavioral expressions of empathy were observed from the audience during these programs. Consider the existing barriers or contextual factors that challenge fostering this outward emotion in zoo guests, such as the pacing and more rigid structure of a scripted program, and then identify opportunities to address or work around some of these obstacles. For example, find ways to incorporate more audience engagement, movement and verbal expressions that are appropriate within this program setting.

2) **Incorporate your audience's preexisting knowledge into program design.** Most students indicated having an awareness of an animals' basic needs as well as many secondary needs prior to their zoo experience. Prior to designing other empathy-based programming conduct research or data gathering to improve the zoo's awareness of the intended audience's baseline understanding of animal needs, and their preexisting experience caring for animals. Including this perspective in the design of the program will foster greater relevancy for the audience and support stronger learning outcomes.

3) **Reinforce positive framing for stigmatized or less liked animals.** Zoo guests can bring negative perceptions of animals such as spiders, snakes, rats or vultures, to their zoo experience. Intentionally framing the narrative of these animals to strategically respond to these negative perceptions can promote improved attitudes towards these stigmatized species.

4) **Reinforce positive attitude change towards animals.** Although the zoo has seen measured success in promoting positive attitudes towards stigmatized animals in particular, it is unclear how long this improved attitude is maintained after exiting the program. Further research or focus on follow-up opportunities that reinforce these attitudes would be valuable to understanding in what ways zoos and aquariums can support lasting change.

5) **Refine practices to evaluate or measure empathy development across settings and audiences.** Finding valid and reliable methods to evaluate empathy towards animals within our program settings remains a challenge. Although we did see measured improvements on individual assessments, these tools were tailored to be appropriate a program's audience and setting, making comparison across programs more challenging. Future evaluation efforts would benefit from development of a tool that can be utilized in many setting and with different audiences.

Fostering Empathy for Animals Training

Participant Feedback

1. How would you rate your overall experience in today's training? (circle one)

    Poor   *Fair*   *Good*   *Excellent*   *Outstanding*

2. For each of the following scales, please mark what best describes your experience:

    Today's training was....

Boring	☐	☐	☐	☐	☐	Interesting
Not useful	☐	☐	☐	☐	☐	Very useful
Confusing	☐	☐	☐	☐	☐	Straightforward
Not relevant to my work	☐	☐	☐	☐	☐	Very relevant to my work
Unsuccessful	☐	☐	☐	☐	☐	Successful

3. We are interested in receiving feedback as these trainings continue to develop. Please provide additional details or reasoning about why you gave the ratings above.

    _____

    _____

4. Please rate the following statements	Not at all	Slightly	Somewhat	Moderately	Very much so
I feel confident in my ability to use empathy-building techniques when talking to guests.	☐	☐	☐	☐	☐
I learned something new in today's workshop.	☐	☐	☐	☐	☐
I think using empathy-building techniques will help connect guests to animals.	☐	☐	☐	☐	☐
I think using empathy-building techniques will help motivate guests to take action for wildlife.	☐	☐	☐	☐	☐
I think WPZ's empathy initiative is a worthwhile effort.	☐	☐	☐	☐	☐

Thanks.

Fostering Empathy for Animals Training

Participant Feedback

1. How would you rate your overall experience in today's training? (circle one)

Poor   *Fair*   *Good*   *Excellent*   *Outstanding*

2. For each of the following scales, please mark what best describes your experience:

Today's training was....

Not useful ☐ ☐ ☐ ☐ ☐ Very useful

Not relevant to my role at the zoo ☐ ☐ ☐ ☐ ☐ Very relevant to my role at the zoo

3. We are interested in receiving feedback as we continue to develop these trainings. Please provide additional details or reasoning about why you gave the ratings above.

_____

4. What kind of ongoing training, resources or support would be most beneficial for you moving forward? Please check all that would be helpful for you to receive from the trainer:

☐ One-time observation of your program/talk with follow-up feedback

☐ Multiple observations of your program/talk with coaching

☐ Revisions to program/written materials to enhance empathy messaging

☐ Handout or reference guide – specify: _____

☐ Other: _____

5. Please rate the following statements:	Not at all	Slightly	Somewhat	Moderately	Very much so
I feel confident in my ability to use empathy-building techniques when talking to guests.	☐	☐	☐	☐	☐
I think using empathy-building techniques will help connect guests to animals.	☐	☐	☐	☐	☐
I think using empathy-building techniques will help motivate guests to take action for wildlife.	☐	☐	☐	☐	☐
It's clear to me how using empathy-building practices contributes to the zoo's mission.	☐	☐	☐	☐	☐

WOODLAND PARK ZOO

Fostering Empathy Through Programs: Peer Feedback

Date: _____ Observer: _____ Program: _____

Animals in program: _____

Use of Empathy Best Practices

1. Did the program include expectations for audience behavior around animals?

What to look for (check all that apply):	*Specific Examples/Notes*
□ Draws connection of audience behavior to animal's comfort/safety	
□ Reinforces good audience behavior	

2. Did the program reinforce that animals are individuals?

What to look for (check all that apply):	*Specific Examples/Notes*
□ Always uses animal's name and/or pronouns	
□ Highlights unique personality trait or individual story for each individual animal	

3. Did the program inform about the animals' needs?

What to look for (check all that apply):	*Specific Examples/Notes*
□ Informs about animals' basic (survival) needs	
□ Informs about secondary needs of individual (to thrive at the zoo)	
□ Informs about secondary needs of species (to thrive in natural habitat)	

4. Did the program highlight similarities and differences between animal and people?

What to look for (check all that apply):	*Specific Examples/Notes*
□ Compares or contrasts animal and people's basic needs	
□ Compares or contrasts animals and people's physical characteristics, age, etc.	
□ Compares and contrasts animal and people's secondary needs	

5. **Did the program encourage focused observation of the animal?**

What to look for (check all that apply):	*Specific Examples/Notes*
□ Prompts focused observation of animal's physical characteristics	
□ Prompted focused observation of animal's behavior/movement	
□ Draws connection between animal's behavior and interpretation of animal's emotional experience	
□ Asks open-ended questions about audience's observations	

6. **Did the program invite perspective-taking of animal?**

What to look for (check all that apply):	*Specific Examples/Notes*
□ Uses role playing/mimicry/physical movement	
□ Draws attention to the animal's perspective	
□ Asks open-ended questions about animal's behavior	
□ Prompts audience to take animal's perspective	

7. **Did the program include an appropriate conservation or caring action?**

What to look for (check all that apply):	*Specific Examples/Notes*
□ Includes way for audience to help/care for animals	
□ Asks open-ended question about ways people can help animals	
□ Audience practices caring behavior	

8. **Did the program reinforce that animals have their own agency?**

What to look for (check all that apply):	*Specific Examples/Notes*
□ Animal movements are not physically controlled	
□ Animals make own decisions and act by choice	
□ Draws attention to animal making choices	

9. **Did the program reinforce that animals can have relationships?**

What to look for (check all that apply):	*Specific Examples/Notes*
□ Interactions with other animal/person is observed	
□ Relationship between animals or animal/handler is highlighted	

10. <u>Identify one area for improvement or additional opportunity to reinforce empathy:</u>

Interview Questions for Semi-structured summative interviews with staff and volunteers.

When thinking back on the empathy train, what stands out in your mind, or what do you remember?

Overall would you say the empathy training has been beneficial or not to your work? (if yes, how, if no, why not?)

Have you used or applied any of the information or practices into your work at the zoo? (Give concrete example)

In what other ways has the topic of empathy or empathy practices shown up either in practice or discussion with the team of people you work with on a daily basis? Does your manager talk about this topic?

If someone new came to your team and wanted you to teach them a little about the best way to apply empathy practice, where would you have them start?

What kind of follow-up information or support would you have been interested in receiving?

Observation Codesheet   Date : _____

Program/experience:_____   Group type:_____   Ages: ____

Notes:

Expressions of Empathy and Related Emotions: Observation Codesheet			
1) Understands needs of an animal			
	OBSERVATIONS	**X**	**Notes/supporting evidence**
a.	Talks about/expresses animal's basic needs (food, water, oxygen, shelter, space)		
b.	Talks about/expresses secondary animal needs (e.g. safety, health, comfort, emotional wellbeing)		
c.	Compares self to animal		
d.	Contrasts self to animal		
e.	Connects animal to own lived experience.		
2) Able to consider perspective of animals			
a.	Predicts or speaks to animal's state, emotion or wants		
b.	Provides reasons for prediction of animal's state, emotion or desires		
c.	Verbally mimics animal, speaks in voice of animal		
d.	Physically mimics animal behavior (biomimicry)		
3) Demonstrates appreciation or respect for animal			
a.	Verbalizes appreciation, gratitude, or love for the animal		
b.	Verbalizes positive feelings about animals' physical characteristics		
c.	Demonstrates physical affection/appreciations		
d.	Verbalizes negative feelings about the animal.		
4) Demonstrates curiosity or interest in the animal			
a.	Asks questions about the animal or seeks out information		
b.	Observes animal closely		
c.	Expresses observations of animal.		
d.	Prolongs observation or repeated observation of animal		
e.	Retreats or withdraws from animal, avoidance of contact		

5)	**Expresses desire to help animals (individually or as a group)**		
a.	Expresses concern for an <u>individual</u> animal's well-being		
b.	Wants to take action/behave in a way that helps an individual animal		
c.	Expresses concern for animals overall/as a group		
d.	Wants to take action/behave in a way act to help animals overall.		
e.	Shares beneficial actions with others.		
6)	**Expresses desire to help animals (individually or as a group)**		
a.	Promotes safe and comfortable environment for animal.		
b.	Physical interaction/touch is gentle or appropriate.		
c.	Self-regulates behavior in response to the animal's cues.		
d.	Provides for the need of the animal.		
e.	Protects or reduces danger to an individual or group.		
f.	Demonstrates harmful behavior towards animal, puts animal in danger.		
7)	**Recognition of animal as an individual**		
a.	Speaks to animal's independent movements/making choices.		
b.	Refers to animal by name or pronouns.		
c.	Greets or says goodbye to animal.		
d.	Speaks directly to animal.		
e.	Comments/inquires on animal's relationship with other animals or people.		

Meeting an Animal's Needs worksheet

Name: _____   Grade: _____

Read through the questions and circle the answer.

1. Animals have feelings just like I do.   YES   NO   MAYBE

2. I think every animal, even things like snakes
   or spiders, deserve respect.   YES   NO   MAYBE

3. I don't know how an animal is feeling
   because they can't talk.   YES   NO   MAYBE

Imagine you have a pet dog named Ziggy. It is your job to give him the things he needs to thrive and live a happy and healthy life. For each of Ziggy's secondary needs listed below write in the blank one or two things you could do make sure that need is being met.

(Example): What would you do to meet his b*asic need to survive*? *Give him dog*

*food and water in his bowl.*_____

4. What would you do to meet his <u>need to be healthy</u>? _____

5. What would you do to meet his <u>need to feel safe</u>? _____

6. What would you do to meet his <u>need to have choices</u>? _____

Meeting an Animal's Needs worksheet

Name: _____   Grade: _____

Read through the questions and circle the answer.

1. Animals have feelings just like I do.   YES   NO   MAYBE

2. I think every animal, even things like snakes
   or spiders, deserve respect.   YES   NO   MAYBE

3. I don't know how an animal is feeling
   because they can't talk.   YES   NO   MAYBE

4. All people and animals like the same things.   YES   NO   MAYBE

Imagine you have a pet cat named Fluffy. It is your job to give her the things she needs to thrive and live a happy and healthy life. For each of Fluffy's secondary needs listed below write in the blank one or two things you could do make sure that need is being met. If you aren't sure you can write "*I don't know".*

(Example): What would you do to meet her b*asic need to survive*? *Give her cat food*

*and water*_____

5. What would you do to meet her <u>need to be healthy</u>? _____

6. What would you do to meet her <u>need to feel safe</u>? _____

7. What would you do to meet her <u>need to have choices</u>? _____

Name: _____   Grade: _____

★

7. **How do you feel** about meeting a live animal today?

Angry   Happy   Nervous   Excited   Sad   Curious   Nothing   Don't know

8. How do you think the animal will feel meeting all of you?

Angry   Happy   Nervous   Excited   Sad   Curious   Nothing   Don't know

1. **How did you feel** meeting the live animal today? (circle one)

Angry　　Happy　　Nervous　　Excited　　Sad　　Curious　　Nothing　　Don't know

2a. **How do you think the animal felt** meeting all of you?

Angry　　Happy　　Nervous　　Excited　　Sad　　Curious　　Nothing　　Don't know

2b. Why did you choose your answer above? What did you think about or what did you notice about the animal?

_____

This is my animal: _____

This is how I will help them Thrive:

Teacher Instructions for the *Nature of Growing Up* worksheet

The front page of the attached worksheet is to be completed by your students a minimum of 7 full days before your planned visit to the zoo. For example, if you plan to visit the zoo on a Monday, this worksheet must be completed no later than the Monday prior that visit. Only have your students complete one side of the worksheet. They will complete the second side at the zoo.

Instructions:

1. Distribute copies of the 2-sided worksheet to your students and a pencil.

2. Ask the students to turn the page so the side with the star (☆) in the upper right corner is facing up.

3. Before your students begin, please read the following instructions out loud.

   "Before you begin I am going to read each question out loud and then you will circle the answer that is closest to what you think. There are no right or wrong answers to these questions."

5. Read question 1 and 2 out loud including the answer options, allowing time for your students to select their answer.

6. Question 3 asks students to rate how much they like or don't like an animal using a thumbs up/thumbs down answer scale. Two thumbs down means "I really don't like", one thumbs down means "I kind of don't like"; one thumbs up means "I kind of like" and two thumbs up mean "I really like". Read this scale out loud to the students and answer any questions they have prior to rating the animals.

7. Read out loud each animal one by one, allowing time for the students to select their response on the thumbs up/down rating scale.

8. When students have completed the front side of the worksheet have them write their first name at the top and collect their papers.

9. Bring your classes worksheets with you on your zoo visit.

For any questions please e-mail mary.jackson@zoo.org.

1. Both animals and people grow up. YES NO MAYBE

2. Animals grow up the same way I do. YES NO MAYBE

3. Circle how you feel about each of these animals.

	I REALLY LIKE	I KIND OF LIKE	I KIND OF DON'T LIKE	I REALLY DON'T LIKE
Porcupine	👍👍	👍	👎	👎👎
Crow	👍👍	👍	👎	👎👎
Snake	👍👍	👍	👎	👎👎
Rat	👍👍	👍	👎	👎👎
Skunk	👍👍	👍	👎	👎👎
Spider	👍👍	👍	👎	👎👎
Tiger	👍👍	👍	👎	👎

1. Both animals and people grow up.   YES   NO   MAYBE

2. Animals grow up the same way I do.   YES   NO   MAYBE

3.Circle how you feel about each of these animals.				
	I REALLY LIKE	I KIND OF LIKE	I KIND OF DON'T LIKE	I REALLY DON'T LIKE
Porcupine	👍👍	👍	👎	👎👎
Crow	👍👍	👍	👎	👎👎
Snake	👍👍	👍	👎	👎👎
Rat	👍👍	👍	👎	👎👎
Skunk	👍👍	👍	👎	👎👎
Spider	👍👍	👍	👎	👎👎
Tiger	👍👍	👍	👎	👎👎