

Teaching with Animals: The Role of Animal Ambassadors in Improving Presenter Communication Skills

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Abstract

Much is known about the benefits of interacting with animals for learners. However, little is known about the animals' potential influence on the communication ability of the presenter/educator. The purpose of this qualitative study was to describe the experience of undergraduate students who used live animals (baby chicks, turtles, salamanders, and non-venomous snakes) during in-class and outreach presentations and the animals' role in influencing their communication ability. The influence of an instructor who teaches with such animals was also examined. A purposive sample of students enrolled in an introductory environmental education course open to all majors was obtained and five students agreed to participate in semi-structured interviews. Once audio was recorded and transcribed, the constant comparative method was used to analyze the data. Six reoccurring themes emerged. Presenting with a live animal (1) helped students feel less nervous while teaching, (2) increased presenter confidence, (3) promoted flexibility while teaching, (4) encouraged audience analysis, (5) helped create a positive, comfortable learning environment, and (6) influenced student career decisions. These themes aligned with Bandura's triatic reciprocity model. Pre-service teacher education programs may consider using small, live animals, when relevant, with apprentice teachers as they can equally benefit the presenter and learning environment.

Keywords: animals in the classroom; classroom environment; communication anxiety; pre-service teacher education; triatic reciprocity model

Introduction/Literature Review

When used in teaching, live animals can provide a memorable learning experience. In the formal (indoor/classroom) setting, captive live animals can enhance learning, strengthen feelings of empathy and compassion, and build skills in responsibility (Daly & Suggs, 2010; Fuhrman, 2007; Fuhrman & Ladewig, 2008; Hummel & Randler, 2012). In the nonformal (outdoor/non-classroom) environment, animals used as teaching tools can enhance the relevance of local conservation efforts targeting specific species and habitats and increase attendance at program activities (Dierking, Burtnyk, Buchner, & Falk, 2002; Siegel, 2004; Swanagan, 2000). Animals can also elicit physiological responses in participants. When used in either setting, companion animals can decrease blood pressure, lower heartrate, lessen feelings of homesickness, and enhance one's outlook on life (Siegel, 2004; Von Bergen, 2015). Although animals are often used in formal and nonformal presentations delivered by agricultural and environmental educators, it is unknown

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whether live animals used during such presentations could positively influence the presenters' communication ability.

The ability to communicate with diverse audiences is a skill required of nearly every occupation. However, college students graduating today lack many essential communication skills needed in the workplace (Brooks, Flanders, Jones, Kane, McKissick, & Shepherd, 2008; Crawford, Lang, Fink, Dalton, & Fielitz, 2011; Guenther & Moore, 2005; Schneider, 2015; Thomas, 2010). Of the types of communication skills desired by employers, effective oral communication is one of the most important (Crawford et al., 2011). Mangan (2007) called on college faculty to strengthen these "soft skills" in college students and Dwyer and Davidson (2012) more recently suggested that faculty should train students in public speaking specifically. Given the need to strengthen communication skills in college students, undergraduate students at the University of Georgia served as a relevant audience for this study.

Public speaking skills are of particular importance in the agricultural and environmental fields (Kaufman, Rateau, Ellis, Kasperbauer, & Stacklin, 2010). The act of public speaking may increase one's communication apprehension, and college students are no different from others in their anxiety with speaking before their peers. However, animals may offer support for reducing stress like the apprehension associated with public speaking. In fact, experts encourage those with communication and other fears to interact with live animals to overcome their anxieties (Mallon, 1992; Meadan & Jegatheesan, 2010). When considering whether handling stuffed (toy) animals would lower student anxiety when compared to handling live animals, Shiloh et al. (2003) found that petting live animals was more effective at reducing anxiety and thereby enhancing communication skills. Interestingly, touching a live turtle was just as effective at reducing anxiety as touching a live rabbit (Shiloh et al., 2003). With their generally smaller size and transportability, reptiles and small mammals can be used in classrooms and offer promise in enhancing the communication abilities of college students engaged in public presentations.

One explanation for the potential effectiveness of live animals in reducing communication anxieties and improving a presenter's overall speaking skills is the distractor factor. Live animals may serve to distract the handler away from potential sources of anxiety like those experienced during public speaking and allow the speaker to focus more on delivering their educational message. Live animals are "ideally suited for a distraction role because...they are complex, unpredictable, interactive, and operate on tactile, auditory, visual, and probably other levels" (Shiloh et al., 2003, p. 392). This aligns with Brickel's (1982) attentional shift hypothesis which suggests that interacting with animals can reduce anxiety by diverting attention away from stressful stimuli.

Although much is known about the benefits of interacting with animals for learners, little is known about the animals' influence on the educator/presenter. Shiloh et al. (2003) called for additional research on the influence of touching live animals like rabbits and turtles on reducing anxiety. Daly and Suggs (2010) recommended that additional studies be conducted on the use of companion animals to enhance communication skills. Most recently, Hummel and Randler (2012) encouraged additional research on the use of different animal species from different taxonomic classes on one's motivation to communicate. The need to strengthen communication skills in college students, the potential for animals to aid in reducing communication anxiety of those engaged in public speaking, and the lack of research on an animals' influence on the presenters' communication ability prompted this study.

Theoretical Framework

Bandura's (1986) Social Cognitive Theory proposed that learning occurs through interactions between the individual, behavior and the environment (see Figure 1); enactive and vicarious learning; and through observation, modeling, and imitation. Bandura elaborated that the reciprocal interactions between the individual, behavior, and environmental factors all influence the outcomes of the learning experience. Therefore, a teacher must consider the environmental factors that exist as they prepare a lesson and how those environmental factors will influence the behavior being taught (Schunk, 2012). In this study, the learners were engaged in a course that was established utilizing Bandura's triadic reciprocity model as a theoretical underpinning.

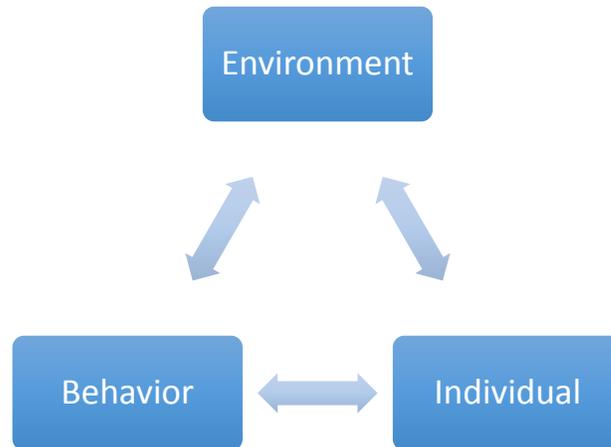


Figure 1. Triadic reciprocity model (Bandura, 1986)

Bandura (1986) posited that to enhance the learning environment and promote student learning, educators should utilize enactive and vicarious learning experiences. When utilizing enactive and vicarious learning experiences, Bandura proposed the utilization of modeling, observational practices, and student imitation of behaviors. Therefore, the researchers developed enactive and vicarious educational experiences for students to promote engagement and cognitive development. Vicarious learning experiences were developed as opportunities to witness the instructor and other guest speakers demonstrate presentation skills and utilization of animals as teaching tools. Each skill was modeled for the learner's observation, followed by an opportunity for learners to imitate the same behavior with stuffed animals and finally with live animals, all within the confines of the classroom environment. Each of the enactive learning experiences were video recorded for students to self-reflect on their skill development, as well as receiving constructive feedback from the instructor.

Purpose and Objectives

The purpose of this qualitative study was to understand the experience of undergraduate students who used live animals during presentations and the animals' role in influencing their communication ability, substantiated by Priority Area Four of the National Research Agenda (Doerfert, 2011). Specifically, student communication ability was addressed from a public speaking skills standpoint. This study was guided by the following research questions:

1. What influence does presenting with a live animal have on the presenter's communication ability?

2. What influence does an instructor, who teaches with animals, have on students' presentation abilities in a classroom environment?

Methods

The course, "Animals in Education," trained students from a variety of majors in safely handling, transporting, and teaching with live animals. The animals were used as ambassadors of educational messages shared during presentations given in-class and before an audience of special needs youth. The educational messages shared by student presenters worked to move audience members from being aware of environmental issues regarding wildlife (e.g., habitat protection) to taking specific actions to alleviate such issues. Messages even related topics such as respecting others with physical differences to respecting animals with stereotypes (e.g., snakes). Students engaged in two team teaching activities (four students/team) where they developed a lesson plan taught first to an audience of 24 of their peers (in-class) and then before an audience of 10 to 12 youth with mental and physical disabilities at a local camp (outreach). Each presentation was videotaped and students reflected on their team's teaching abilities to revise their presentation before delivering it to the youth with special needs. Both presentations were designed for an audience at the second-grade level. Animal ambassadors used by students during their in-class and outreach presentations included baby chicks, land and water turtles, salamanders, and non-venomous snakes.

A purposive sample of undergraduate students enrolled in "Animals in Education," an introductory environmental education course (N = 28) was obtained (Koro-Ljungberg, Yendol-Hoppey, Smith, & Hayes, 2009). A total of five students agreed to participate in semi-structured interviews with one of the co-authors. Students were not interviewed by the instructor of the course to prevent influencing their responses. The University of Georgia Institutional Review Board approved the study protocol and all participants were provided written informed consent prior to participation in the study. Participants received no benefit or incentive to participate in the study.

Participants were asked to participate in a less than one-hour interview with a co-author of the study. The semi-structured interviews included 10 questions that examined the student's experience in the "Animals in Education" course. The interviews lasted between 25 and 48 minutes in length and were conducted with students over the phone approximately four months following their participation in the course. Conducting interviews over the phone has been deemed a preferred collection method (Opdenakker, 2006). Following the interviews, the audio files were transcribed verbatim and each participant was assigned a pseudonym to ensure anonymity (Creswell, 1998).

The researchers utilized the constant comparative method proposed by Lincoln and Guba (1985) to analyze the data. Each researcher individually reviewed the transcripts and compared incidents applicable to each category. Together, the researchers then integrated categories and defined their characteristics or meaning. Following this, the researchers constructed the written form of the data in this manuscript. To ensure that the trustworthiness, credibility, dependability, and transferability of this study were upheld during the data collection and analysis processes, the researchers utilized several qualitative data collection best practices (Dooley, 2007; Lincoln & Guba, 1985). Specifically, participants were engaged in member checking to ensure that their responses were interpreted accurately and methodological journals were used to ensure the interviewer was consistent in facilitating each interview. Peer debriefing was also used to ensure consistency in the interpretation of themes which emerged from the raw data.

The researchers in this study were an Associate Professor and Assistant Professor with formal training in educational teaching and learning methodologies. Both researchers believe in

the utilization of hands-on learning and building connections through experiential learning, including the utilization of animals in their teaching. Throughout their lives, animals have played an important role in their learning experiences and development as faculty members.

Results

All five participants were female and represented academic majors in both the biological and social sciences (see Table 1). Pseudonyms have been used to protect participant identities.

Table 1

Demographic Characteristics of Interview Participants

Pseudonym	Academic Major	Year in School
Abby	Agricultural Economics	Senior
Becky	Wildlife Science	Junior
Carla	Agricultural Communication	Junior
Dana	Agricultural Education	Junior
Erica	Agricultural Communication	Senior

Six reoccurring themes emerged from the raw data regarding the influence that presenting with a live animal has on a presenter's communication ability, including: (1) feeling less nervous while teaching with an animal, (2) increasing presenter confidence, (3) promoting flexibility while teaching, (4) encouraging audience analysis, (5) a positive, comfortable learning environment, and (6) influences on career decisions. Some overarching themes were further broken into subthemes to further describe participant experiences in using animals while presenting.

Feeling Less Nervous while Teaching with an Animal

Four of the five participants believed that using animals as ambassadors while teaching helped reduce their public speaking anxiety. Becky noted that teaching while handling an animal distracted attention away from a potential mistake she might make, saying, "it was a calming thing to know that most people are watching the animal instead of watching me. That way if I messed up I was less self-conscious about it, because they were more focused on the animal." Abby also mentioned, "it's different when you have an animal there because people are very interested in that and what's going on, so that calms you down because they don't care about what's going on with you." Dana added, "...my nerves fade a lot quicker because it [handling the animal] gives me something else to concentrate on. I think students also, they're more engaged with you when you're not the only one up there." Erica also shared that one of the benefits of handling a live animal while teaching was that the animal relieved tension because the presenter believed the audience's attention was equally focused on the animal. She noted,

It's easier than if you're just standing up there with empty hands because a lot of attention is on the animal. Even if you're up there assessing something, they're listening but they're also watching the animal to see what they're doing, how they're

behaving. Not all the light is on you to perform or to teach. It makes it more comfortable to me to use an animal.

Increasing Presenter Confidence

Using a live animal in a teaching demonstration enhanced participants' confidence in their teaching ability. Knowing that the animal would be incorporated into their presentation seemed to also increase the presenter's enthusiasm to present information. For example, Dana shared, "I was always told that as a teacher I became more enthusiastic because I love teaching with animals. The students get so much more engaged. I guess my personality would change in it. I get more confident...I'd say teaching with animals increased my confidence." As an agricultural education major, Dana participated in student teaching the semester following her enrollment in "Animals in Education." She recalled a specific instance when she borrowed the animals she used in the course for one of the lessons she would teach at her cooperating school. Students at her assigned middle school had a history of disciplinary problems and she was nervous to teach them. Dana remarked,

I brought animals one day because I needed the confidence to teach in front of them. I was nervous. After I taught with the animals that day, I felt more confident because the kids responded to me. I feel I'm a better teacher after using the animals in that class.

Carla also mentioned the value of teaching with animals because she believed having an animal peaked students' interest in a lesson and thereby enhanced her own confidence to engage that audience. She shared, "If you pull in an animal that is something they've never seen before, new to them, that'll definitely get their interest..." From a teamwork standpoint, Erica noted that incorporating the animals into a lesson helped her and her teaching team's confidence in their preparation to teach. Having that live animal in front of the audience, "you have to practice out who is going to say what, where you're going to stand and who is going to hold the animal, when to transition so everything flows well. We did a lot of work outside of class to prepare." She went on to add that such preparation, because of having the animals, enhanced the team's confidence in their presenting abilities.

The experiences of teaching with the animals increased participants' confidence in their teaching ability enough that some students willingly volunteered to continue using animals in teaching outside of the scope of the class. Becky volunteered to go help with an outdoor festival in the community and said that the experience of teaching with the animals in the class "helped her prepare mentally for what I needed to expect."

Promoting Flexibility while Teaching

When teaching with any live animal, one must expect the unexpected. Several participants mentioned that handling the animals while teaching enhanced their skills in being flexible and adaptive. Carla declared that teaching with turtles, snakes, salamanders, and birds is "very different from public speaking just from the simple fact that there's that wild animal variable and you have to be able to be flexible and kind of roll with the punches rather than just having a speech memorized and just speaking." For Erica, she shared that teaching with live animals, "definitely taught me a lot about being prepared for things to not go your way or exactly how you prepared for them."

When students in the "Animals in Education" course visited the special needs youth to share the presentation they had previously delivered before their peers in the classroom, they

experienced the value of being flexible and the wisdom in capitalizing on teachable moments. Erica shared an example of her experience while visiting with the special needs youth and how the experience helped her become flexible in her delivery. She noted,

They [youth with special needs] slightly interrupt you, but then they say it and then you make a little comment about it and you can move on and keep teaching. It was interruptions, but it wasn't necessarily negative interruptions...we had to be flexible and address what they were saying or what they were doing and then get back on point and continue our lesson.

Participants in this study experienced the value in adapting to learner needs and questions and often used those opportunities to bring attention to an animal's characteristic or behavior.

Encouraging Audience Analysis

Promoting curiosity and suspense. Several participants mentioned that the experience of teaching with animals forced them to consider their audience, their choice of animal ambassador, and the relevance of the animal to the associated learning objective. Carla shared,

Ah, like your audience, how old are they, are they going to be scared, that kind of thing. If you're working with children, pulling out a really big, long, strong snake may scare them. You want to consider what your audience type is. You want to consider kind of novelty I guess, is something that really pulls audiences in.

Abby also noted the novelty effect of the animal and its ability to promote curiosity and suspense among audience members, stating, "If you bring a snake or a turtle, most of them have never seen that, and that really gets them excited...they've got in trouble if it was outside and their mom's told them not to touch it so being there it excites them."

Visible impact on audience members. Other participants shared how using the animals prompted visible non-verbal reactions from audience members—especially the special needs youth—that seemed to build their confidence. For Abby, holding a snake and teaching the youth with special needs was impactful because she was able to, "see his [special needs student] face connect right then was very...warm and fuzzy inside because we had taught him something that he didn't know." Becky also mentioned the visible impact her teaching with the animals was making on the audience of special needs students, saying,

You could see the joy on their face that they were still being treated like a normal kid to be able to interact with a snake and with a turtle, and things that they wouldn't normally see. Then we'd be able to get on their level for them to learn.

Participants appreciated knowing that their efforts in teaching were making a visible difference. Some, like Dana, were impacted by what she observed in one handicapped student who had already interacted with the animals through another teaching team. This young man wanted to experience the animals a second time. Dana recalled,

I think how much it sticks with them because we were only speaking for five minutes...and he was so attentive and so engaged in the ones previously before us that he enjoyed sharing the information [with her]. I guess I wouldn't have thought somebody would have remembered all the information.

These observations of learners' verbal and non-verbal cues seemed to be a source of positive feedback for participants in this study and helped affirm that their methods were relevant and appreciated.

Positive, Comfortable Learning Environment

Each of the participants mentioned aspects of the classroom learning environment that were particularly memorable for them. Characteristics of the instructor surfaced as a reoccurring theme and became an influential factor in creating a positive, comfortable learning environment. Becky shared,

He's just so energetic with the animals. He just interacts with them and gives them personality. He gave a turtle a personality. Turtles are kind of just there and he was able to make you, I guess, fall in love and feel something for an animal that people normally would just kind of like toss aside because it moves so slow and they don't really care because it's a turtle.

Dana also mentioned the characteristics of the instructor and how he modeled behaviors that students valued and wanted to repeat in their own teaching. For instance, she shared,

Dr. XXX always taught that enthusiasm is contagious, and how you can take the driest subject, and if you're enthusiastic about it, it catches on...especially when I teach my students if I'm dry in what I'm saying then they're not going to be excited, but if I'm passionate and showing it in my voice and I'm letting them see that I'm enthusiastic, that does more than anything for students.

Dana went on to share an example of how she borrowed animals she handled during the course for use during one of her student teaching activities. She recalled her observations of the middle school students and their level of engagement, saying,

I've never seen a student engaged the whole entire time as when we brought in the turtles. They were all about it, and they wanted to see Mitsy [a tortoise] walk and they just thought it was the coolest thing ever. I just feel like even the most difficult students can be reached by animals.

Participants also noted connections they formed by working with the animals. The instructor's teaching behaviors, combined with the use of live animals, enhanced students' level of classroom engagement. Carla recalled how the animals heightened her attention and curiosity, noting,

I just find myself, in other classes where I find myself falling asleep or having attention difficulties or just not really feeling invested in the class, when you have the opportunity to work with animals, or to watch animals or to learn something new about animals and just form a connection with them, that really does keep you much more engaged in my experience at least, than a simple lecture class does.

Connections were also formed through students' work in their teaching teams. Teams planned and presented the lesson they would go on to teach to the special needs youth first before their peers in class—an opportunity for critique and feedback both on lesson content and animal use practices. When asked to recall what she will remember most about the “Animals in Education” course, Erica said,

The camaraderie with your entire class of people. I think you are cheerleaders and also critiques of each other. That brought us together because while we are critiquing each other in different exercises or after different lessons, we were rooting each other on and being respectful of one another.

The instructor allowed students to feel a sense of ownership in their teaching and independence in their choice of animals and teaching methods. Carla noted the value in this, sharing, “he makes you feel like you're important and that is so, so important in a teacher because it makes the student invested as well and that's something that I want to learn to emulate in my life...”

Influences on Career Decisions

Finally, participants' confidence in their teaching abilities and the experience of teaching with animals may have influenced and even strengthened their interest in a career path. For Becky, a wildlife science major,

It definitely helped for right now and in the future I will definitely be able to say that I can properly teach with animals, not even just like a classroom setting, like if I want to educate people about other animals...I could be able to apply what I learned in that class to other animals. I think it definitely has helped me decide what I want to do for a career.

For Carla, an agricultural communication major, the experience strengthened her career interests.

I think this class has kind of reinforced the ideas that I've already had of that I enjoy interacting with people and that I enjoy educating people about the environment. [...] I don't really know where I'm going yet. I know that seems crazy considering I'm about to graduate but we're figuring it all out as we go. [This class] helped me get that internship and what I've learned in the class will also help me do a better job in that internship.

Discussion, Conclusions, and Recommendations

Aspects of Bandura's (1986) triadic reciprocity model emerged from the participant conversations in this study. Modeling on the part of the “Animals in Education” instructor helped to create a classroom *environment* where *individuals* could observe and then imitate his *behaviors*. Once outside of the classroom and participating in an outreach activity with special needs youth, participants recalled the feedback they received from the instructor and their peers back in the classroom and this seemed to help them identify non-verbal cues of the special needs youth and adapt their teaching accordingly. Participant comments regarding the positive, comfortable learning environment which they experienced helped to validate the relevance of Bandura's model in the context of this study. Observing the instructor's behaviors in the inclusive classroom environment also increased participants' confidence as a teacher both with their peers and with the younger, special needs youth.

Rosenshine and Furst (1971) noted the importance of enthusiasm, opportunities for student practice, humor, and variability as aspects which the most effective educators exhibit. Participants in this study spoke specifically about each of these. More recently, Brain, Fuhrman, and De Lay (2009) found that educators who were flexible and adaptive in the nonformal environment had a

longer lasting impact on learners. Participants in this study experienced the wisdom in capitalizing on teachable moments as their live animal ambassadors and audience of special needs learners were not always predictable. They also observed their instructor modeling many of the behaviors advocated by Rosenshine and Furst (1971).

Teaching with live animals can certainly provide a memorable learning experience. Although physiological responses were not measured in this study as they were in previous studies connecting animals and people (Siegel, 2004; Von Bergen, 2015), participants noted feeling less anxious while teaching with an animal. From the presenter's perspective, holding the live animal prompted them to believe the audience would be less attentive to flaws in their teaching and serve as a distraction. Others have suggested that animals can pleasantly distract audience attention, reduce stress in the presenter, and serve as an object for demonstration (Brickel, 1982; Fuhrman, 2007; Meadan & Jegatheesan, 2010; Shiloh et al., 2003). Students in this study taught in teams and having other presenters in front of the audience may have also helped reduce anxiety by distributing attention off of just one presenter.

Although previous studies have examined the influence of handling and petting domestic, pet-like animals on human responses (e.g., Shiloh et al., 2003) and some have recommended additional research be conducted on using companion animals in teaching (Daly & Suggs, 2010), using reptiles and amphibians was a newer inquiry area. The novelty effect of using the baby birds, turtles, salamanders, and non-venomous snakes may have influenced participants—both as audience members observing their instructor and peers teach with such animals and as presenters themselves. Several participants mentioned the verbal and non-verbal feedback they received from the special needs learners as they presented with certain animals. The audience's unfamiliarity with the animal (as compared with a domestic pet dog, for example) and excited response upon viewing it for the first time may have given an extra boost of confidence to the presenter and helped them feel less nervous while teaching.

Recommendations for Research

Although not generalizable, these findings may be transferred to other teaching situations to enhance student communication skills and the overall classroom environment. Based on these findings, the following recommendations can be made for additional study involving live animals as ambassadors of educational messages:

1. Given the potential influence of previous experiences with specific animals, examine the potential influence of animal type (reptile vs. mammal, native vs. exotic) on the communication ability of a presenter who handles the animal.
2. The previous experiences learners had with specific animals were not examined in this study. Additional research is needed examining the potential novelty effect of different types of animals and the emotional responses elicited by such animals on the presenter/teacher and audience.
3. Although not reported here, students in the "Animals in Education" class referred to the animal ambassadors by name when discussing their impact as a teaching tool. A need exists to examine the influence of naming the animals on presenter and learner attachment to the animal.
4. Additional research is needed on the influence of an animal ambassador on a male presenters' communication ability/skill and anxiety levels since only females were examined here.

5. Students in this study taught in teams of four. Additional research is needed examining whether similar outcomes are possible when students teach with an animal by themselves.
6. Finally, the influence of an animal ambassador on student content knowledge acquisition and retention should receive further investigation.

Recommendations for Practice

This study found that involving students in teaching demonstrations with live animals can benefit their communication abilities. The following recommendations can be made for those interested in involving students in presentations where live animals serve as a teaching tool to enhance an educational message:

1. When confronted with an audience of varying abilities and motivations, consider using a live animal to reduce daily distractions, focus attention (such as through an interest approach), and empower learners to interact with their instructor and animal visitor.
2. If confronted with a pre-service teacher who struggles with public speaking anxiety, using an animal as part of a teaching activity may reduce presenter anxiety while promoting curiosity and enthusiasm for learning among students.
3. Creating an environment where learners can feel comfortable making mistakes can be difficult. Using a live animal will encourage (and sometimes force) flexibility on the part of the instructor and allow learners to imitate that adaptability in their own presentations.
4. Create an environment where learners have the ability to engage at their own pace. While different animals can be utilized within a learning environment, some may cause fear and anxiety for certain learners (e.g., snakes). Ensure that all learners feel safe and secure when utilizing live animal ambassadors through the use of vicarious exposure beforehand.
5. Finally, when planning lessons, select an animal ambassador that will engage learners while ensuring that the novelty effect of the animal does not detract from the acquisition of knowledge.

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