Middlebury

Trends and perceptions in zoo and aquarium field trips: a survey-based study

By Nick Meiers

Trends and Perceptions in Zoo and Aquarium Field Trips:

A Survey-Based Study

Executive Summary

This paper reports the results of a survey designed examine trends in zoo and aquarium field trip attendance, as well as the perceptions and practices of zoo and aquarium educators. The results suggest that field trip attendance is down at most zoos and aquariums over the last five years, but increased during 2009 over 2008 at about half of the institutions reporting data. Educators reported that conservation, habitat, and adaptations are the most common field trip themes. A majority of zoos and aquariums provide support materials for classroom teachers, yet many educators reported that students have not been adequately prepared for the field trip. Half of zoo and aquarium educators reported feeling their objectives differed from that of classroom teachers. A majority of zoos and aquariums offer guided and self-guided programs aligned with state standards. The results obtained here, combined with those reported in the published literature, suggest that zoo and aquarium educators must continue to provide classroom teachers with professional development opportunities if field trips are to remain an educationally-relevant part of the K-12 experience.

About the Author

Nick Meiers (nmeiers@middlebury.edu) graduated from Middlebury College in 2010 with an undergraduate degree in biology and education. Nick has served as a volunteer education intern at an AZA-accredited zoo and worked seasonally for the Wisconsin State Park System in visitor services, recreation, and education. He is currently looking to pursue a career where he can combine his interests in education and guest experience in a zoo or aquarium setting.

Cover photo taken at The Detroit Zoo, posted by Dave Hogg on flickr

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Anecdotal evidence suggests factors such as standardized testing and school district budget cuts may be reducing the frequency with which school groups in the United States of America take field trips to zoos, aquariums, museums, and similar institutions. This change impacts both the institutions and the students missing-out on the unique learning opportunities they provide.

If field trips are to continue to establish themselves as an integral part of the K-12 experience, schools and informal learning institutions must work together to ensure that the benefits provided to students through field trips are worth the additional time, coordination, and expense that they require.

To better understand what might be done on a macro-scale to improve the working relationships of schools with zoos and aquariums, more must be learned about the current state.

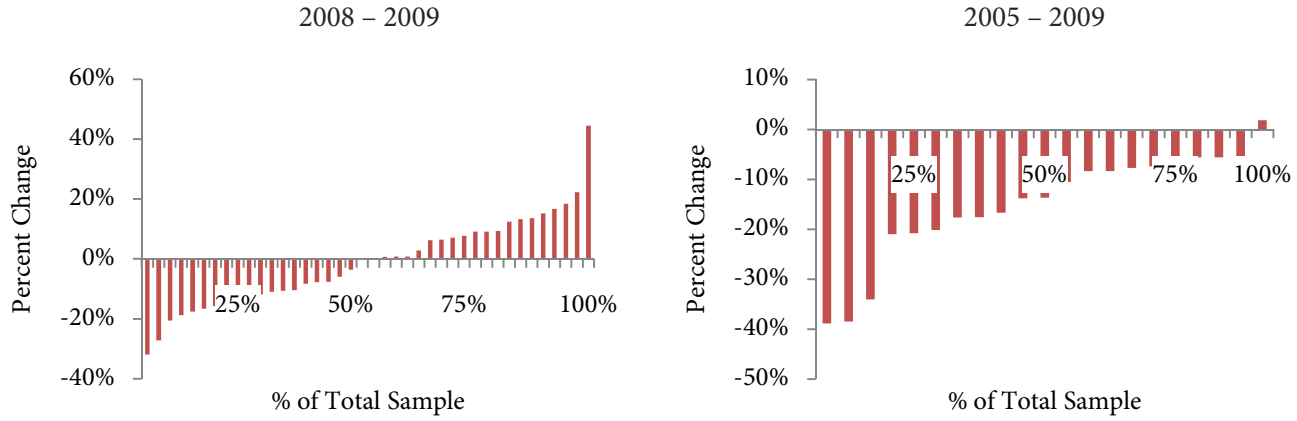
Namely, we must investigate:

- The differences and similarities between the goals and perceptions of zoo and aquarium educators and classroom teachers toward various aspects of the field trip experience;
- Whether or not significant changes in field trip attendance have occurred at zoos and aquariums in recent years;
- The extent to which zoo and aquarium educators provide classroom teachers with resources for use before, during, and after the field trip;
- The themes and concepts emphasized most often during field trips.

Much has been written about the perceptions and agendas of classroom teachers.[i] The research presented here begins to consider trends in field trip attendance at zoos and aquariums, as well as the perceptions, practices, and beliefs of zoo and aquarium educators from around the United States.

Exhibit 1

Percent change in field trip attendance at zoos and aquariums 2008 – 2009 (n=43) and 2005-2009 (n=21). Bars represent individual zoos and aquariums.



Field trip attendance

School district budget reductions and increasing transportation costs, combined with an emphasis on standardized-test preparation, have been cited as two reasons for the decreasing number of school field trips across schools. In recent years, notable United States museums such as Chicago's Field Museum and The Natural History Museum of Los Angeles County have reported declining field trip attendance.

I hypothesized that zoos and aquariums in the United States may likewise be experiencing declining attendance, similar to what occurred during the 1980s.

Results The results, reported by zoo and aquarium educators, suggest that nearly 100% of zoos and aquariums reported fewer field trip visitors in 2009 than in 2005. Unfortunately, that comparison was limited by the 21 zoos and aquariums providing data for both years.

More recently—between 2008 and 2009—approximately half of zoos and aquariums reported increasing field trip attendance, while half reported a decrease (n=43). There was no significant difference in field trip attendance between 2008 and 2009 ($p=0.18$, $df=42$, $t=-0.92$)

When zoos and aquariums were divided into three size classes based on annual visitor counts, no single size class experienced a change in attendance significantly different from that of another between 2008 and 2009, suggesting that variation in the results may be attributed to regional influences and not institutional size or resources.

Comments When asked to comment on changes to field trips in recent years, many zoo and aquarium educators described difficulties getting student groups. Some attendance-related comments included:

> "Transportation costs have skyrocketed."
>
> "You have to work harder to get groups here; much more competition now."
>
> "Money is an issue and some groups are not allowed to do any field trips of any kind."
>
> "Buses are the single limiting factor. We did forge a partnership with a local private busing company…that has helped a bit."
>
> "Less are visiting because of transportation challenges and how the economy is affecting their school district. I have had a few groups cancel that had grant funding to visit, but they still couldn't visit because of the perception in their school about their spending of money."
>
> "Schools are now restricting teachers to 1 field trip a year and the cost of gas has also decreased field trip."
>
> "Due to budget cutbacks teachers are requesting more zoomobiles (bringing the animals to the school) and less on site programs."

Conservation, adaptations, and habitat were mentioned most frequently.

Common field trip themes

Results When asked to list the most common themes and topics covered during school field trips, educators most frequently mentioned conservation (43%), adaptations (35%), and habitat (30%). Biodiversity and animal-specific themes were each listed 16% of the time.

A list of the most frequent responses can be found in Exhibit 2.

Future Work Not surprisingly, the most frequently-mentioned themes and topics can be easily connected to the school curriculum. Additionally, they may be effectively adapted for use at almost any zoo or aquarium, regardless of collection size or diversity. A logical step for the future is developing an open-source resource where zoos and aquariums can share their worksheets, lesson plans, and other educational resource developments. While there is variation in the styles and types of programming offered from place to place, there is no reason each zoo and aquarium should have to "reinvent the wheel" with the most common themes. I would be interested in working on a project like this with individuals or groups sharing the same common interest. Please let me know.

Exhibit 2

Number and percent of zoo and aquarium educators mentioning a particular theme (n=37).

Theme	# of Mentions	% Mentioned	Theme	# of Mentions	% Mentioned
Conservation	16	43%	Stewardship	2	5%
Adaptations	13	35%	Water Cycle	1	3%
Habitats	11	30%	Structure/Function	1	3%
Biodiversity	6	16%	Senses	1	3%
Animal-Specific	6	16%	Interdependence	1	3%
Classification	4	11%	Inquiry Learning	1	3%
Life Cycle	3	8%	Evolution	1	3%
Endangered Species	3	8%	Restoration	1	3%
World Connections	3	8%	Careers	1	3%
Biomes	3	8%	Animal Welfare	1	3%
Food Webs/	2	5%	Animal Behavior	1	3%
Ecosystems	2	5%	History	1	3%

Surprisingly, being with friends was barely mentioned.

What students enjoy – zoo and aquarium educator perceptions

Zoo and aquarium educators were asked to list what they believe students enjoy most about the field trip experience.

Results 53% mentioned something related to "seeing animals" and 50% mentioned having some kind of an up-close or hands-on encounter with animals. A list of the most frequent responses can be found in Exhibit 3.

Discussion While these animal-related responses might be expected given the nature of a zoo or aquarium, it would be valuable to consider whether or not they are consistent with what students themselves report enjoying. If we knew this, we could find ways to develop the experience accordingly. One survey respondent expressed interest in considering the agendas of students, teachers, and institutions:

> "I want to pay attention to the student's learning agenda, the teacher's agenda, as well as the Museum's agenda. I believe that students learn more about items on the Museum's agenda with a guided program, but they probably miss some things they would have learned on their own, that in the long run might be more meaningful to them. It's a real challenge, and I'd love to work with someone who wants to do research in this area!"

Surprisingly, "being with friends" was only mentioned by one educator. The social element of the experience is important to students; some researchers have suggested it might be the only part of the field trip they remember fifteen or twenty years down the road.[ii] Further, a positive social experience may contribute to learning. One study involving elementary students found a positive relationship between the occurrence of student-student interactions and the number of student-exhibit interactions, suggesting that as students interact more with each other, they interact more with the exhibit as well.[iii]

While it's likely that the social component of the field trip is considered implicitly by most zoo and aquarium educators, perhaps it needs to be more explicitly and intentionally incorporated into the student experience.

Exhibt 3

Common themes and topics during zoo and aquarium field trips (n=38)

Theme	# of Mentions	% Mentioned
Seeing Animals	20	53%
Animal Interactions	19	50%
Staff Interactions	3	8%
Games/Activities	3	8%
Being out of classroom	2	5%
Park Attractions	3	8%
Behind the scenes	1	3%
Artifacts	1	3%
Being with friends	1	3%

Fewer than half of zoo and aquarium educators (40%) felt the preparation given to students before a field trip is adequate.

Support materials and preparation

Results A majority of zoo and aquarium educators (79%) reported offering some type of support resources for classroom teachers. Educators offered resources for use before, during, and after the visit with nearly equal frequency. (See Exhibit 4).

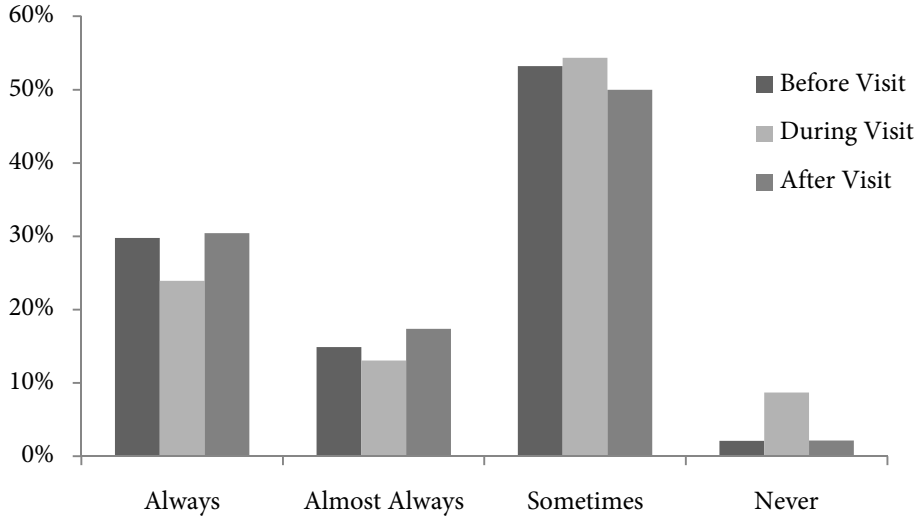
Just over half (55%) of zoo and aquarium educators agreed or strongly agreed that students have received some preparation before their visit, while the remaining educators were neutral or disagreed. Fewer than half of educators (40%) felt the preparation given to students was adequate, while the remainder felt students were not prepared adequately (19%) or were neutral (42%).

Discussion Educators most often reported offering resources "some" of the time. More work must be done to determine exactly what that means, and under which circumstances they are most often provided.

My survey also failed to ask educators what types of resources they provide to classroom teachers (Worksheets? Lesson plans? Rules and regulations?) Future work should examine the quality of these resources, and determine classroom teacher perceptions of them. Conflict may arise when zoo and aquarium educators have objectives that differ from those of classroom teachers.

Exhibit 4

Zoo and aquarium educators (n=46) who reported providing classroom teachers with support resources of some kind were asked to consider how often those resources are for use before, during, and after the visit.



Most zoo and aquarium educators agreed that the field trip should be an extension of the curriculum, but just over half believed classroom teachers felt the same way.

Desires for classroom teachers

In the survey, I provided zoo and aquarium educators with an opportunity to describe what they wished classroom teachers better understood before bringing a group to their zoo or aquarium.

Results Educators most frequently mentioned wishing classroom teachers were better able to connect the field trip to their curriculum (20%) and wishing teachers had a better idea of the resources available at the zoo or aquarium (20%). Educators also expressed a desire for teachers to do more research prior to their visit (16%), better control their students (16%), and better prepare chaperones (13%). A coded list of the responses can be found in Exhibit 5. Complete responses can be read in Appendix 1, Part 1.

These results are consistent with what was learned in another part of this survey, when educators were asked the extent to which they agreed or disagreed with various statements related to the field trip experience. Most educators agreed or strongly agreed (92%) that the field trip should be an extension of the curriculum, but only 57% agreed or strongly agreed that classroom teachers felt the same way.

Student behavior may also be a concern amongst zoo and aquarium educators. 62% of respondents agreed or strongly agreed that classroom teachers take responsibility for managing their students during the visit. The rest were neutral (28%) or disagreed (9%).

Exhibit 5

Zoo and aquarium educators were asked to describe what they wished classroom teachers better understood before bringing their class to the zoo or aquarium (n=45).

Desire for Classroom Teachers	# of Mentions	% of Responses
Better connections to curriculum	9	20%
Better understanding of resources available	9	20%
More research prior to visit	7	16%
Better control of student behavior	7	16%
Better chaperone preparation	6	13%
Choose focus area / have a plan	6	13%
Better student preparation	5	11%
Read materials prior to visit	5	11%
Place for education, not just recreation	3	7%
Better use of worksheets and time during visit	3	7%
Nothing/not a problem	2	4%
Realize zoo is aligned to standards	2	4%
Better communication with zoo staff	2	4%
Engage students in informal setting	1	2%
Better communication between teachers	1	2%
Name tags for students	1	2%
Better understanding of novelty	1	2%

Chaperones are often left out of discussions centered on the teacher-institution-student relationship

Emphasis on chaperones

The extent to which zoo and aquarium educators commented on the need for better preparation of chaperones suggests more emphasis may be needed in this area. Further, if zoo and aquarium educators desire improvement, they may need to take initiative themselves by designing pre-visit resources targeted specifically at chaperones.

Chaperon-related comments include:

> "[I wish teachers knew] how to coach chaperones in questioning."
>
> "I wish [teachers] would convey to their chaperones that they need to be flexible during the day. Each exhibit may not be available or a show may not be taking place and if these things happen there are many other things to do. And to remember that there is secondary learning taking place, like how to behave, follow directions, read maps, etc. etc. that students are learning while on field trips."
>
> "Chaperone supervision is a REQUIREMENT not a suggestion."
>
> "Preparation is important, including the training of chaperones. I would say the majority of teachers understand this. Our problems are usually associated with chaperones not providing the support needed."

Discussion While chaperones may be a requirement, they are often left out of discussions centered on the teacher-institution-student relationship. Tunnicliffe et al.[iv] compared the conversations of family groups visiting a zoo to the conversation of student groups (pre-school through age 12) visiting the same institution. The results revealed that school and family groups conversed amongst themselves in a similar fashion; their conversations were centered on observing animals, naming them, and connecting them to their own past experiences. Compared with the family groups, affective and emotive comments were actually higher in school groups.

The similarities between verbal communication in school and family groups suggested that school group leaders may view the zoo visit in the same terms as families; with the primary objective being social.[v] This might be explained by the fact that most student groups are led by a chaperone who is the parent of one of the students in the group. In one study, nearly 70% of parents reported that their main reason for chaperoning was to spend time with their children. [vi] Thus, the experience of students in a chaperon-led group may be similar to that of a family group visiting zoo or aquarium. Some chaperones may promote better learning experiences than others.[vii]

Classroom teachers may not have the background knowledge necessary to take advantage of the unique opportunities for learning the zoo or aquarium provides.

A perception of differing objectives

Results Only half of zoo and aquarium educators (52%) agreed or strongly agreed that they share the same objectives for students as classroom teachers, while the remaining educators were neutral (40%) or disagreed (8%).

While this response may indicate a perceived disconnect between the goals of classroom teachers and zoo and aquarium educators, it should not be taken as a sign of a tense relationship between the two parties. 83% of zoo and aquarium educators agreed or strongly agreed that communicating with classroom teachers prior to a visit is a good use of their time. Further, 70% of zoo and aquarium educators agreed or strongly agreed that classroom teachers were familiar with what their zoo or aquarium had to offer before arriving.

Discussion Past research has suggested that classroom teachers may approach field trips with fact-based learning objectives that align more closely with their perceptions of a traditional classroom, while zoos and aquariums may place their focus on observation and inquiry.[viii] If that is the case—or even if it isn't—the implication is that providing support and training for classroom teachers should be a primary objective of the zoo or aquarium. Classroom teachers may not have the background knowledge necessary to create an experience for their students that is intriguing while at the same time takes advantage of the unique opportunities for learning the zoo or aquarium offers.[ix]

Many zoos and aquariums offer pre-visit orientation programs for classroom teachers. Two survey respondents commented:

> "All teachers are required to attend an orientation prior to bringing their group to the nature center. This allows us to adequately prepare teachers. Even so, I would like to see less "rushing" and more encouragement of free play and exploration."

> "We have a policy that all Florida teachers are free, with valid ID or recent pay stub. We encourage them to come ahead of time to see the facility. Last year we decided to go back to a Fall open house for teachers. 110 came and we anticipate that we will do it again this year and increase attendance for this event. Hopefully, this will help with field trip preparation."

91% of educators reported always or almost always offering guided programs aligned with state standards.

The impact of state standards

Results 75% of zoo and aquarium educators agreed or strongly agreed that state standards are important to classroom teachers. When asked to explain what has changed most about field trips in recent years, nearly 30% of educators mentioned state standards—the most frequent response to that prompt.

Thus, it should be no surprise that 91% of educators reported always or almost always offering guided programs that are aligned with state standards. Educators reported that 81% of the worksheets and resources provided for self-guided programs are always or almost always aligned with state standards.

Zoo and aquarium educators frequently mentioned standards-based programs when asked what about field trips has changed in recent years:

> "A lot of focus on alignment to state framework."
>
> "Although we strive more to be standard-based, most teachers do not show the same interest. We now feel we have to sell ourselves more to get groups to come."
>
> "Teachers have expressed increased need to justify their field trips to administrators by demonstrating connections to state learning standards; we have focused on these connections in formal programs and are now looking at how to improve our support of science learning on field trips through informal programs and online teacher resources."
>
> "Field trips are very limited - teachers often have to justify how these trips fit into classroom lessons and/or grade standards in order to get approval."

Another educator reported placing less of an effort on standards:

> "I am not as worried about meeting state standards and providing that info for teachers, they have NEVER asked what I thought we met; they make up their own matches. We just work to show our resources to their best advantage."

The need for teachers to educationally-justify field trips may be having a positive impact on the experience for students:

> "Administrators are asking for educational activities to be able to justify sending students."
>
> "More schools are choosing to participate in educational programs as part of their field trips, probably to enhance their chances of securing funding. More and more often, teachers are viewing the zoo as a living classroom that can help reinforce and drive home the lessons learned in the classroom. They are also looking at the zoo as a resource for interesting topics they cannot adequately teach in traditional classroom setting."
>
> "Field trips are becoming increasingly aligned with standards and curriculum, instead of simply a fun day away from school. This change is very positive, as it allows students to expand their learning and engage in relevant experiences."
>
> "I think more teachers are trying to be sure the Zoo field trip fits into their curriculum and is part of the students learning. Not just a trip for enjoyment of going on a trip. They are also looking at field trips which they feel will be a good use of their families' money."
>
> "Schools cannot get funding unless a field trip or program aligns with state curriculum standards. This puts more pressure on our education department, but it is worth it for the number of kids we see on trips and in school programs."

While the emphasis on educational goals is promising, at least one study proposed that in some cases teachers may invoke standards to secure funding and abandon the curricular connections after the trip request has been granted.[x]

Guided programs and spontaneous encounters

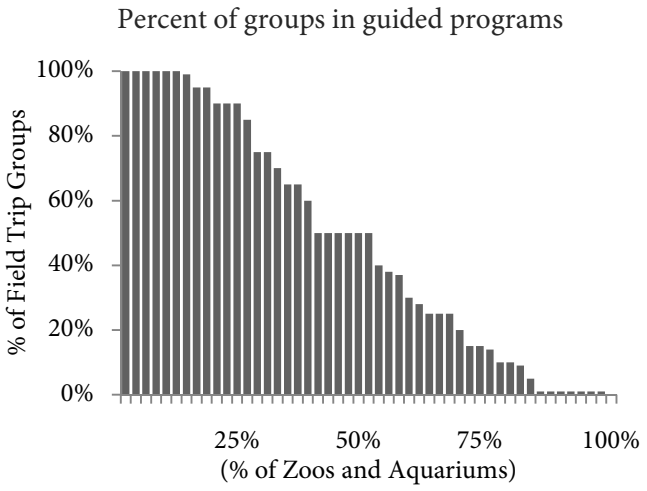
Zoo and aquarium educators were asked to estimate the percentage of school groups participating in guided programs, as well as the percentage of school groups experiencing unplanned educational encounters with staff or volunteers during their visit.

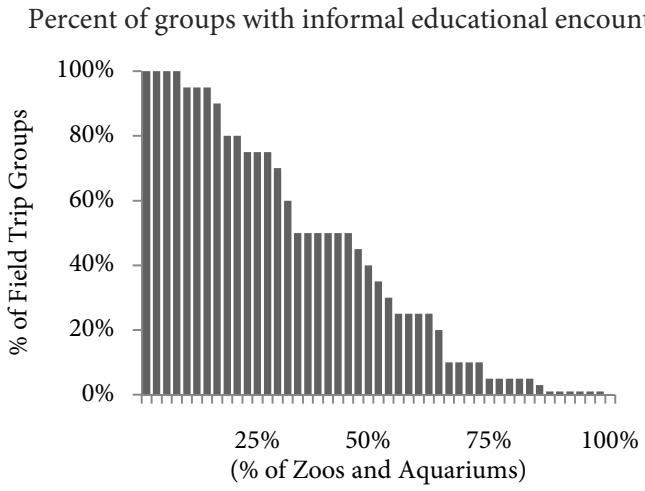
Results There was wide variation in the percentage of groups participating in guided programs or informal educational experiences, with no clear pattern (Exhibit 6). Half of institutions fell near the extremes, while the remainder fell in the middle. Dividing the results by zoo or aquarium size class (based on annual visitor counts) suggests that a significantly-greater percentage of groups participate in a guided program at institutions in the smallest size class than the largest size class ($p<0.05$). There was no significant difference in the frequency of informal encounters amongst the size classes.

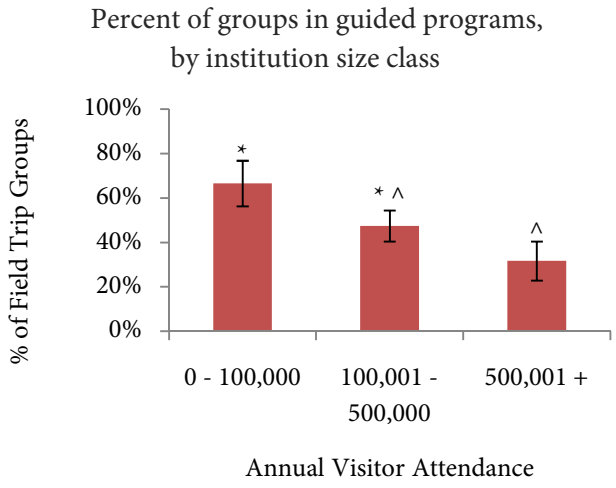
In a separate part of the survey, nearly all educators reported believing that learning takes place at their zoo or aquarium. Most (85%) agreed or strongly agreed that learning is more likely to occur when students participate in a guided program.

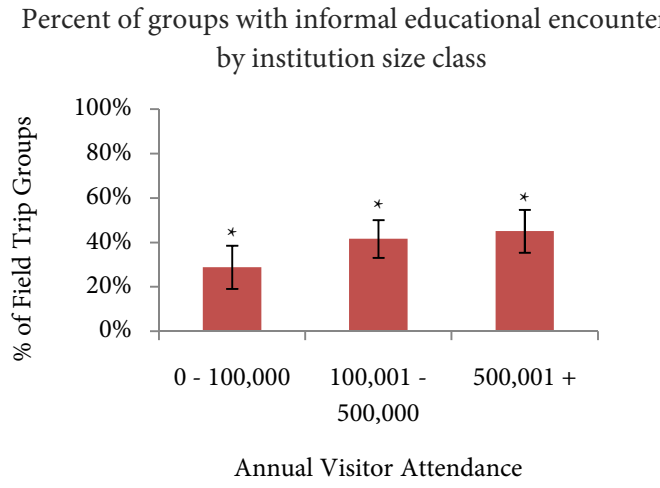
Exhibit 6

Percentage of visiting school groups participating in guided programs (left) and percentage of groups having an unplanned educational encounter with staff or volunteers (right). Top figures represent the total sample (n=49) and bottom figures divide the sample into three size classes by number of annual visitors: < 100k (n=13), 100k - 500k (n=19), and < 500k (n=17). Error bars represent +/- 1 standard error of the mean.









The challenge is for educators at zoos and aquariums to work cooperatively with classroom teachers to educate them on how they might augment their curriculums by taking advantage of the resources zoos and aquariums have available.

Conclusion

The results reported here may be used as a starting point for future studies examining the practices, beliefs, and perceptions of zoo and aquarium educators. To complete the present work and maximize its utility, a similar survey should be distributed to classroom teachers to build upon what is already known about classroom teacher perceptions. In addition, comparing and contrasting the responses of classroom teachers and zoo and aquarium educators will help both parties more fully realize areas of agreement and disconnect.

Still, the results presented here may be used by educators at zoos and aquariums to better understand their colleagues' perspective on a macro-scale. Educators reported emphasizing similar program topics and facing similar challenges in getting groups to their institutions. These educators should continue to collaborate at the national level in order to discuss best-practice approaches to curriculum, logistics, and other challenges as they arise.

In addition to the present study, a wealth of research has been conducted examining the ways in which field trips can be planned, prepared for, and facilitated to best support student learning. The challenge is for educators at zoos and aquariums to work cooperatively with classroom teachers to educate them on how they might augment their curriculums by taking advantage of the resources zoos and aquariums have available. This will require time, effort, and a shift in the way we perceive the role of the field trip in the K-12 experience. Zoos and aquariums should lead the way by taking responsibility for providing classroom teachers with professional development opportunities and ensuring that they are offering programs and resources that meet the needs of the teachers in their communities. Classroom teachers, in turn, should be willing to take advantage of the opportunities for learning that zoos and aquariums offer.

Methods

An online survey was distributed to zoo and aquarium educators during March and April, 2010. The Association of Zoos and Aquariums (AZA) education listserv was initially used to disseminate the survey, followed by email distribution directly to the education departments of AZA-accredited zoos and aquariums, where those addresses were available. A total of 53 responses were received at the writing of this paper, but not all participants responded to every question.

The survey was divided into five pages. The first section asked for background and classification information, such as the size of the educator's employer institution and extent of the educator's experience in zoo and aquarium education. Responses were received from institutions with annual visitor counts ranging from 27,000 to 2.19 million. Respondents reported between 1 and 40 years of experience in zoo and aquarium education, with a median of 9 years of experience.

The second section was related to the field trip experience at the educator's zoo or aquarium. Respondents were asked questions pertaining to the frequency of guided vs. self-guided field trip groups, as well the extent to which worksheets and background resources were provided to teachers for use before, during, and after the visit. Educators were also asked how often state standards are incorporated into their programs. Finally, this section asked two free-response questions pertaining to the concepts and themes covered during field trips and what educators perceive students enjoy most about the field trip.

The third section asked educators to report how much they agreed or disagreed with various statements related to field trips and perceptions of the dynamic between schools and informal learning institutions. In the fourth section, respondents were asked to provide the number of students who had visited their zoos and aquariums in recent years. The final section asked two free-response questions—one pertaining to how zoo and aquarium educators view field trips differently now than in the past, and the other about what educators wished classroom teachers better understood when bringing groups to their institutions.

Acknowledgement

I would like to thank Claudia Cooper, my project advisor and Director of the Program in Education Studies at Middlebury College in Middlebury, Vermont for her support and guidance with this project.

Appendix 1

Part 1 - Zoo and aquarium educators were asked what they wish classroom teachers better understood about bringing a school group to their institution. Here are their complete responses, edited only for clarity.

How to really use the facility and exhibits as an extension of the classroom.

(1) How to coach chaperones in questioning and (2) how to help students deal with the novelty factor.

(1) The zoo offers much more than a place for recreation but, also education. We have seen an increase of educational program participation also. (2) Some teachers look at a zoo trip as their break and kiddos run wild. Though most teachers are responsible, I do have a few issues each year with this.

All of the extra opportunities that are available to them prior to and/or during their visit.

All teachers are required to attend an orientation prior to bringing their group to the nature center. This allows us to adequately prepare teachers. Even so, I would like to see less "rushing" and more encouragement of free play and exploration.

Are they coming for fun or education? Both are acceptable reasons to come but there should be guidelines for both types of trips. We provide tips for trips but so many teachers never read printed material we send them.

Be prepared! We have a policy that all Florida teachers are free, with valid ID or recent pay stub. We encourage them to come ahead of time to see the facility. Last year we decided to go back to a Fall open house for teachers. 110 came and we anticipate that we will do it again this year and increase attendance for this event. Hopefully, this will help with field trip preparation.

Also, check out our website, we have many resources for teachers that they can download and use in the classroom prior to their visit.

Connection to classroom curriculum is key to a successful zoo learning experience -- both zoo educators and classroom teachers play important roles in making that connection come full circle.

Everything we have to offer!!

General knowledge about birds. Otherwise, a basic understanding of what they are going to see and maybe specific things for the students to look for in the tours or on site. Any other information they will get from the tours.

Have a plan. Choose a group of animals to focus on and prepare chaperones to lead their group.

How it can be an extension of their classroom lesson plans.

How to navigate the zoo, how to manage classroom group behavior when at zoo, how to make the zoo educational - use our resources

I want them to have some sort of activity for their kids to do while they are here. Letting 7th graders "just walk around and see the animals" is not a good plan. Yes, we want school kids to enjoy the Zoo, but it shouldn't be a free for all. Our Education Dept. is happy to help come up with activities for the kids to do at the Zoo - they just have to ask for that help if they need it.

I wish they would convey to their chaperones that they need to be flexible during the day. Each exhibit may not be available or a show may not be taking place and if these things happen there are many other things to do. And to remember that there is secondary learning taking place, like how to behave, follow directions, read maps, etc. etc. that students are learning while on field trips.

(1) Name tags, (2) one accurate check for payment, and (3) I have to meet the timing of many school districts and thus must have different starting times available

Chaperone supervision is a REQUIREMENT not a suggestion

Preparation is important, including the training of chaperones. I would say the majority of teachers understand this. Our problems are usually associated with chaperones not providing the support needed.

Read the confirmation packet!!!! It has important information about where to park, what to bring, what to expect, and where to go if they have an on-grounds program as part of their trip.

Teachers did a little more research when taking a field trip to a Zoo or an Aquarium.

That it is an extension and we are here to help excite student in the area of science.

That the experience they have at our aquarium can be very interactive and reinforce what the teacher is teaching in the classroom.

That the whole facility is a learning lab. If they prepared for that, they could make science come alive and use exhibits and species to teach many, many lessons.

That the zoo has something for every classroom; history to physics.

That they need to prepare their students beforehand with pre-visit activities so that field trip lessons can actually be effective rather than being the first time kids are introduced to particular concepts. That field trips are not vacation time for teachers and chaperones - that they are needed to participate, they are responsible for discipline and they need to set an example for their students - field trips are not the time to talk on their cell phones, chat with fellow teachers and let children go through the building unsupervised.

That they should still be in control of their group. We are interpreters not teachers. We need them to keep classroom control over their students at all time.

That we are a professional organization with experienced educators that are capable of delivering a fabulous standards-based program!

That we are an opportunity to teach kids about the environment. Not just a place to come and hang out.

That zoo educators can be a great extension of their curriculum and have resources that the classroom does not have. That our programs are really aligned to our state standards. That a visit to the zoo can be so much more than a day not to do lesson plans.

The importance of maintaining the provided schedules in order to keep all groups on track. (ie: designated picnic areas and times, show times)

The need to prepare students and familiarize themselves with the topic of the program.

The resources that the zoo has for the teachers.

The teachers with whom I have been working have a strong understanding of how a visit to the zoo enhances their instruction.

(1) Choose 1-2 areas of the museum to focus on- there is no way to see everything in one day. (2) Museum worksheets and scavenger hunts work best when they are open ended and encourage conversational learning, not fill-in-the-blank.

There is little communication amongst teachers who participate in a field trip. Usually one teacher or school administrator books the program, and receives the pertinent logistical and content enhancing information. They rarely share this information with the rest of the chaperones coming with the students. Teachers are, in general, unwilling or unable to prepare for the trip, especially if they are not the primary person booking the trip.

The teachers need to be involved in the programs and activities, prior to, during and after the experience. Teachers need to be communicative with zoo staff as well.

This aspect is not a problem...we just want more of them to be able to come.

This is a living museum, and thus it should be treated with respect and reverence.

To break the groups up smaller and just stop, observe, and ask "I wonder why" questions.

Ways to engage student learning in this informal setting.

"We provide each group with a "field trip information packet" that highlights everything they should know before coming. However, a lot of teachers do not read or share that information with the chaperones attending.

It would also help if some of the teachers had a background basic knowledge of animals (which I know can't happen for everyone) because often we hear teachers telling students the wrong information about animals."

We really wish they would simply read their confirmation letters. 100 percent of the problems we face would be fixed if they simply read their confirmations.

We're a small facility, and the degree to which students pay attention, minimize interruption, and in general "focus" on the presentation makes a huge difference in the value of the time spent.

What they are studying in school that makes a program at or trip to the zoo worthwhile for their students. We get some teachers that say they are studying something entirely different than what they choose to learn while they are here at the zoo.

Part 2 - Zoo and aquarium educators were asked to comment on how they view fieldtrips now differently than they did in the past. Here is a complete list of responses, edited only for clarity.

Teachers are under more pressure for class time. Field trips might be seen as non-productive out-of-school time.

Transportation costs have skyrocketed.

We implemented a $1 per-person charge for local schools which has greatly impacted the number of students attending the Zoo.

You have to work harder to get groups here. Much more competition now.

I am more interested now in exposing children to nature and giving them positive experiences in the out-of-doors than in making sure they go home knowing lots of "facts". I want our programs and exhibits to make both emotional and intellectual connections with participants.

We have to work harder to get the school groups to come. Money is an issue and some groups are not allowed to do any field trips of any kind. We are offering a teacher orientation each month and a big open house in the fall.

Our local county has cut busing from 125 buses for field trips per day to 25 in 2009 and in this fiscal year they have cut it to 12 buses for field trips. Buses are the single limiting factor. We did forge a partnership with a local private busing company to help with groups so that they can get buses and that has helped a bit.

Teachers have expressed increased need to justify their field trips to administrators by demonstrating connections to state learning standards; we have focused on these connections in formal programs and are now looking at how to improve our support of science learning on field trips through informal programs and online teacher resources.

We spend less time with each group and try to give each group a great 30 program instead of trying to spend 1-2 hours with each group. This is due to staffing and teacher time!!

More schools are bringing more students, and more schools are making yearly visits.

I want to pay attention to the student's learning agenda, the teacher's agenda, as well as the Museum's agenda. I believe that students learn more about items on the Museum's agenda with a guided program, but they probably miss some things they would have learned on their own, that in the long run might be more meaningful to them. It's a real challenge, and I'd love to work with someone who wants to do research in this area!

No difference...we need a better evaluation system. It's quite tricky and VERY subjective. You can spin an evaluation any way you want to really.

Less are visiting because of transportation challenges and how the economy is affecting their school district. I have had a few groups cancel that had grant funding to visit, but they still couldn't visit because of the perception in their school about their spending of money.

We are trying to shift our field trips to be more hands-on instead of just walk-and-talk tours about the animals. We try to get the kids involved more than in the past.

At our Zoo we used to have free admission for K-6TH grade and in the 03-04 school year we began charging for their admission.

I think more teachers are trying to be sure the Zoo field trip fits into their curriculum and is part of the students learning. Not just a trip for enjoyment of going on a trip. They are also looking at field trips which they feel will be a good use of their families' money.

I am not as worried about meeting state standards and providing that info for teachers, they have NEVER asked what I thought we met and they make up their own matches. We just work to show our resources to their best advantage.

We have implemented a change in recent years. When our facility opened we allowed participants in a staff led program into the facility and the program free of charge using a drawing system. In recent years, we have adjusted the drawing based on the school's percentage of students on free and reduced lunch. In addition, we have found ourselves working with many more homeschool groups. We have had an increasing number of cancellations in the past two years based on economics. Our program is free but busing costs are more than the schools can afford.

Our biggest changes in field trips have come from the schools. There are more restrictions on our public schools; how far they can travel, if they can travel, how much the buses cost, etc... In addition to that, teachers cannot get funding unless a field trip or program aligns with state curriculum standards. This puts more pressure on our education department, but it is worth it for the number of kids we see on trips and in school programs.

Administrators are asking for educational activities to be able to justify sending students. Parents used to drive, and now most places no longer permit that.

Field trips are very limited - teachers often have to justify how these trips fit into classroom lessons and/or grade standards in order to get approval. Money is more and more of an issue and many districts cut field trips first and it seems that they are seen as a "luxury" rather than a valuable extension of classroom learning

There is more of an attitude of a-day-out-of-school and less taking advantage of a great learning experience. That said--I still enjoy having the school kids!

Funding is definitely more of a challenge, groups are finding it hard to find money to bring groups (gas prices, funding for admission) whereas we have made improvements and additions to our facility, we have not been able to increase our prices without losing groups.

More schools are choosing to participate in educational programs as part of their field trips, probably to enhance their chances of securing funding. More and more often, teachers are viewing the zoo as a living classroom that can help reinforce and drive home the lessons learned in the classroom. They are also looking at the zoo as a resource for interesting topics they cannot adequately teach in traditional classroom setting.

Schools are now restricting teachers to 1 field trip a year and the cost of gas has also decreased field trips.

Field trips are becoming increasingly aligned with standards and curriculum, instead of simply a fun day away from school. This change is very positive, as it allows students to expand their learning and engage in relevant experiences.

Successful educational programs look differently in each place- there is no "right" formula to how all education should be done. Having worked in 3 different museum education departments that had very distinct missions has shown me how wonderful many different approaches can be.

Teachers are increasingly strained by budget cuts. Focus on Math and English is also constraining.

The zoo serves as an outdoor classroom where programs are developed to meet benchmarks and standards

A lot of focus on alignment to state framework. Many more pressures on teachers (funding, bus availability, tight schedule, standardized tests, fear of outdoors).

Standards have been improved to meet state guidelines/standards for science cirriculum.

"We used to set up age appropriate touch-carts with quick activities that were tied to state science standards. We no longer work up these quick lessons because the teachers wouldn't stop for the children to participate. It was a constant, "Hurry up! Hurry up!"

No difference in my perspective--field trips seem to be similar now to ones we had 10 years ago.

It seems like over the years kids have viewed a field trip to the zoo as a free for all instead of a learning experience in the last few years. I think part of that has to do with the teacher and what is expected of the student.

Although we strive more to be standard based, most teachers do not show the same interest. We now feel we have to sell ourselves more to get groups to come.

We're modifying our field trip "format" to provide a more comprehensive experience for the students - i.e., more structure to the visit (program animal presentation, discussion of specific animals and characteristics, not just a generic "tour of the zoo".

We need to determine how field trips are valuable to the schools educationally and help meet their needs educationally.

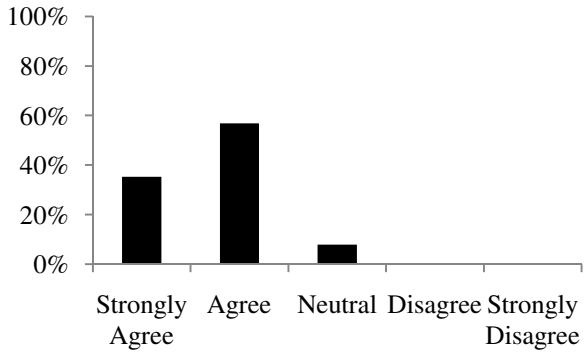
Over the past three years the number of groups of visiting students has increased at the same time the number of students per group has decreased. We think this is reflective of a change in the way teachers are using the Zoo. The Zoo is no longer a place to reward children at the end of the school year. The Zoo is now a place where teachers bring the students in for a specific learning experience.

Due to budget cutbacks teachers are requesting more zoomobiles (bringing the animals to the school) and less on site programs

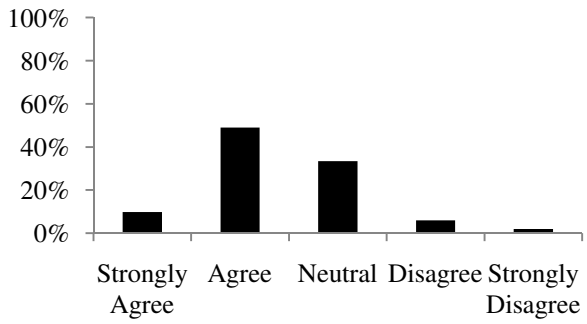
Appendix 2

Zoo and aquarium educators (n=51) were asked to rate the extent to which they agreed or disagreed with the following statements.

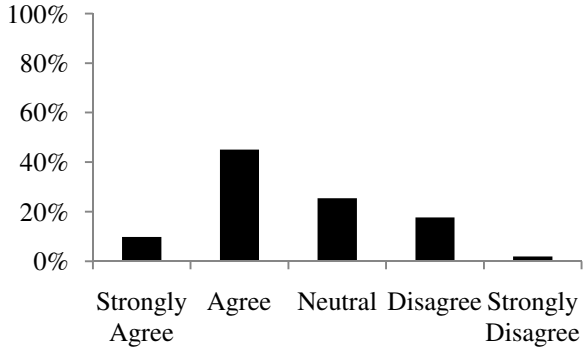
A visit to a zoo or aquarium should be an extension of a school's curriculum.



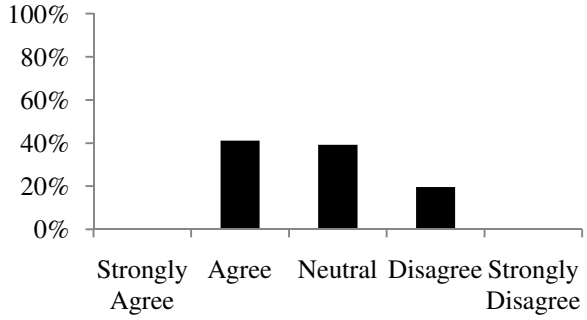
Most classroom teachers view a visit to a zoo or aquarium as an extension of their curriculum.



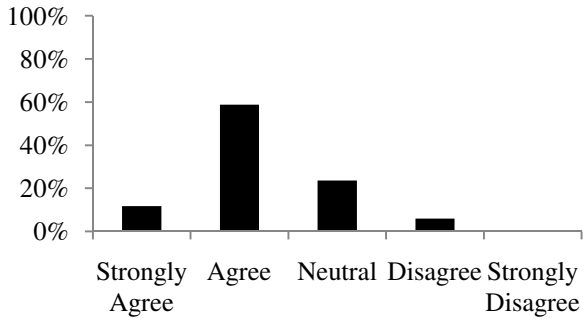
Most students have received some type of preparation prior to their visit.



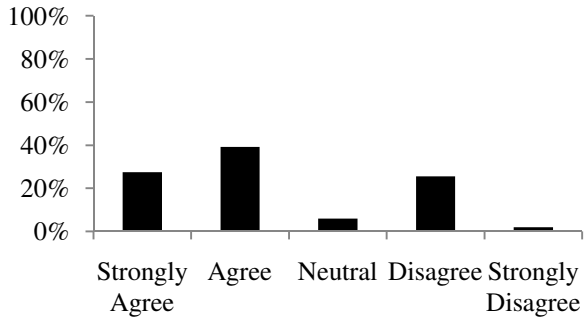
Most classroom teachers have adequately prepared their students for the field trip.



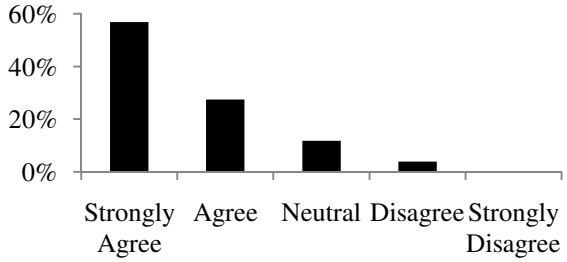
Classroom teachers are familiar with what my institution has to offer before they arrive.



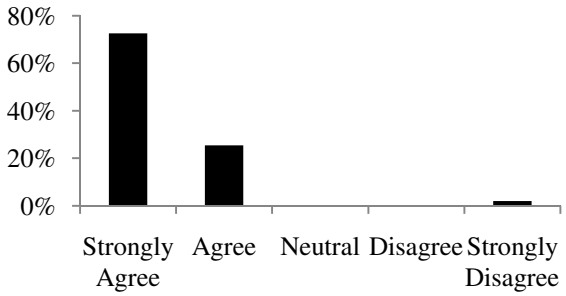
Students would benefit from being exposed to the zoo's physical layout and exhibits prior to arriving.



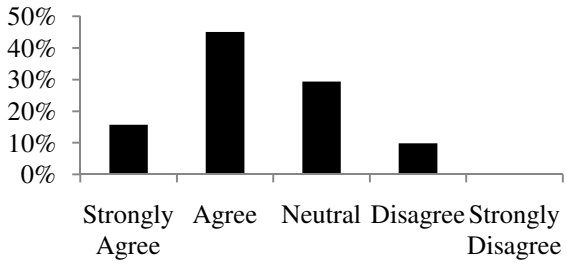
Learning is more likely to take place when students participate in a staff- or volunteer-led program.



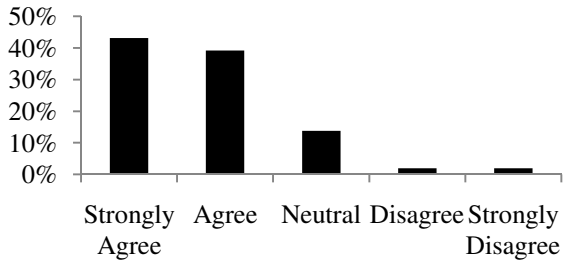
Learning takes place at my zoo or aquarium.



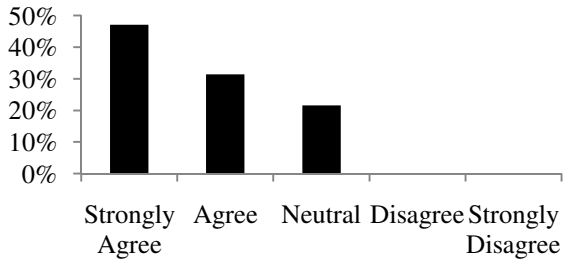
Classroom teachers take responsibility for managing their students during the visit.



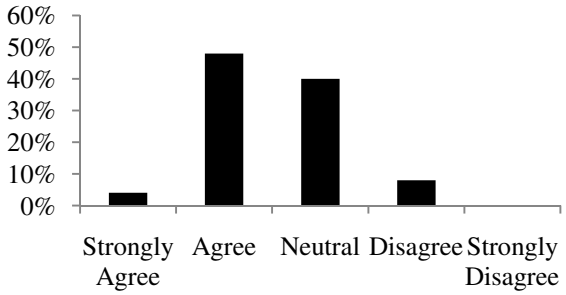
Communicating with classroom teachers before a visit is usually a good use of my time.



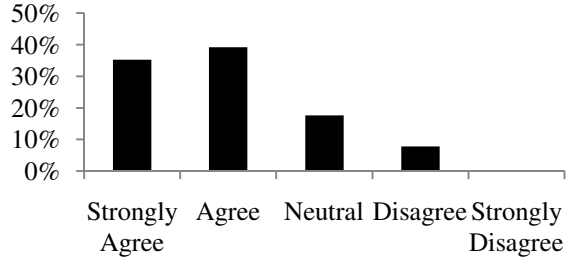
It is important to classroom teachers that some element of their visit is associated with state standards.



Classroom teachers have the same goals for their students that I have.



For students who can read, exhibit signage is important to their experience.



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