

Bishop Museum
NHEP Project On-site Fieldtrip
Summative Evaluation Report
July 2014



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Abstract

A summative evaluation of the Bishop Museum's *The Future is in the Past* fieldtrip finds it to be highly engaging and effective. Forty students and 19 teachers participated in self-completed post-experience surveys. They were enthusiastic about the program; they had fun, learned new information, and found inspiration. Respondents readily identified messages of navigation, and learning about or from ancient Hawaiian ways. Study findings confirm that while all components contribute to learning, the Mo'Olelo and planetarium shows are especially powerful at communicating key messages and delivering information. Suggestions for improvement include offering pre-visit materials, articulating more clearly the overall messages for students, and including a wrap-up activity to help students integrate the different program components.



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Introduction

Project Overview

In 2011 the Bishop Museum and two collaborating organizations, University of Hawai'i at Manoa (UH) and the Pacific Voyaging Society (PVS), were awarded a multi-year grant from the Native Hawaiian Education Program (NHEP) to develop classroom and dockside curricula, an online resource center for educators, teacher workshops, a planetarium show, and a fieldtrip program for middle school students. The overall goal of these educational products and programs is to make STEM content accessible to Native Hawaiian students by presenting it through the lens of ancient Hawaiian navigational systems.

Michael Shanahan, Director of Education, Visitor Experience and Planetarium, at the Bishop Museum contracted with Doris Ash, Ph.D., and Wendy Meluch, MA, to conduct formative and summative evaluation of the NHEP program components. Ash and Meluch collaborated on all evaluation plans. Ash was primarily responsible for evaluation activities relating to the collaboration itself, curriculum components, the on-line resource center and teacher workshops. Meluch managed the fieldtrip evaluation studies with teachers and students, including extensive formative testing. All study protocols were submitted for IRB review at UH and granted exempt status.

This document reports on the summative evaluation of the on-site fieldtrip program.

Fieldtrip Program Evaluation

Science and culture educators at the Bishop Museum used findings from formative evaluation efforts to inform fieldtrip development. In addition to many logistical improvements, the team adjusted their presentations to tie each component together conceptually, and to build in more hands-on opportunities. They also refined the key message to emphasize the idea that STEM is not new to Hawaiians, we can still look to our ancestors for lessons of the past which can guide our future. The following field trip description was written by Museum staff; it is used in promotional materials for classroom teachers.

I KA WA MA MUA KA WA MA HOPE - The Future is in the Past

(Middle School Grades 6-8)

If we stare into the future we'll see....nothing. The future hasn't happened yet. Turn around however and the view is endless. Through the lens of Pacific voyaging, this program helps students to explore the works of our ancestors and discover that S.T.E.M. is nothing new to us. In the course of 3 hours, students will explore the role of winds, waves and stars in navigation via the immersive full dome video of the newly renovated J. Watumull planetarium; learn about canoe engineering and structure in Hawaiian and Pacific Halls, brought to life through vivid storytelling; examine voyaging plants and their uses in the Native garden; and visit the Science Adventure Center to explore the role of birds in traditional navigation.



**Summative Evaluation Report**

Summative evaluation of the fieldtrip included self-completed questionnaires from teachers and students. An online survey of teachers asked them to report on 1) apparent student engagement during the field trip, 2) results of a facilitated classroom discussion about the field trip, 3) feedback about each component, 4) fieldtrip logistics, and 5) issues relating to academic standards. Meluch worked closely with Museum staff and teachers of Hawaiian descent to develop a culturally responsive approach to the evaluation which fit within logistical constraints of the study.

Responses from 19 teachers who completed the survey from March through June of 2014 are included. Students from two classes on site for the field trip in May of 2014 completed a paper questionnaire in their classrooms the day after their field trip experience. Forty students from Central Middle School participated.

Many representative respondent quotes are included in this report to give Museum staff a thorough understanding of how teachers and students receive the experience, and articulate their ideas. Many teacher comments are included for full understanding, and because some references touch on recent updates or adjustments to the program.

Discussion of Key Findings***Do students and teachers perceive intended messages?***

Yes. Students and teachers readily identify messages of navigation and learning about or from ancient Hawaiians. Both groups describe a similar range of navigation-related messages in survey responses, but with slightly different frequency. Students tended to focus on messages about using stars or natural, non-electronic means to find the way. Teachers were more likely to emphasize the Native Hawaiian cultural context (better understanding and appreciation of “our past,” learning from ancestors, getting guidance for our future from our past, and/or cultural preservation).

Though students were more likely to refer to the tools of navigation on surveys, messages of Native Hawaiian and/or Polynesian history clearly came through as well. Two very precisely wrote about one of the program’s key messages, “look back at the past to see the future.” Teachers who lead class discussions about the fieldtrip also reported that their students were sensitive to messages about learning from the past and cultural preservation.

On their questionnaires, students didn’t mention science or technology by name, but they clearly understood that ancient methods can take the place of modern technology. “You don’t need electronics to do amazing feats.” Teachers commonly cited “science” or some other STEM-related subject area, such as technology, sustainable practices, tools, methods, math, and the like.

What impresses students and teachers most?

The planetarium and Mo’Olelo stood out as highlights for both students and teachers. While most students identified the planetarium as their favorite component, their other survey responses, teacher reports, and evaluator observations confirmed very high levels of engagement with the Mo’Olelo as well. Student self-reported emphasis on the planetarium show could in part be due to the fact that it was the last presentation they saw at the end of the fieldtrip, thus it was freshest in their minds when talking with classmates and taking the survey.

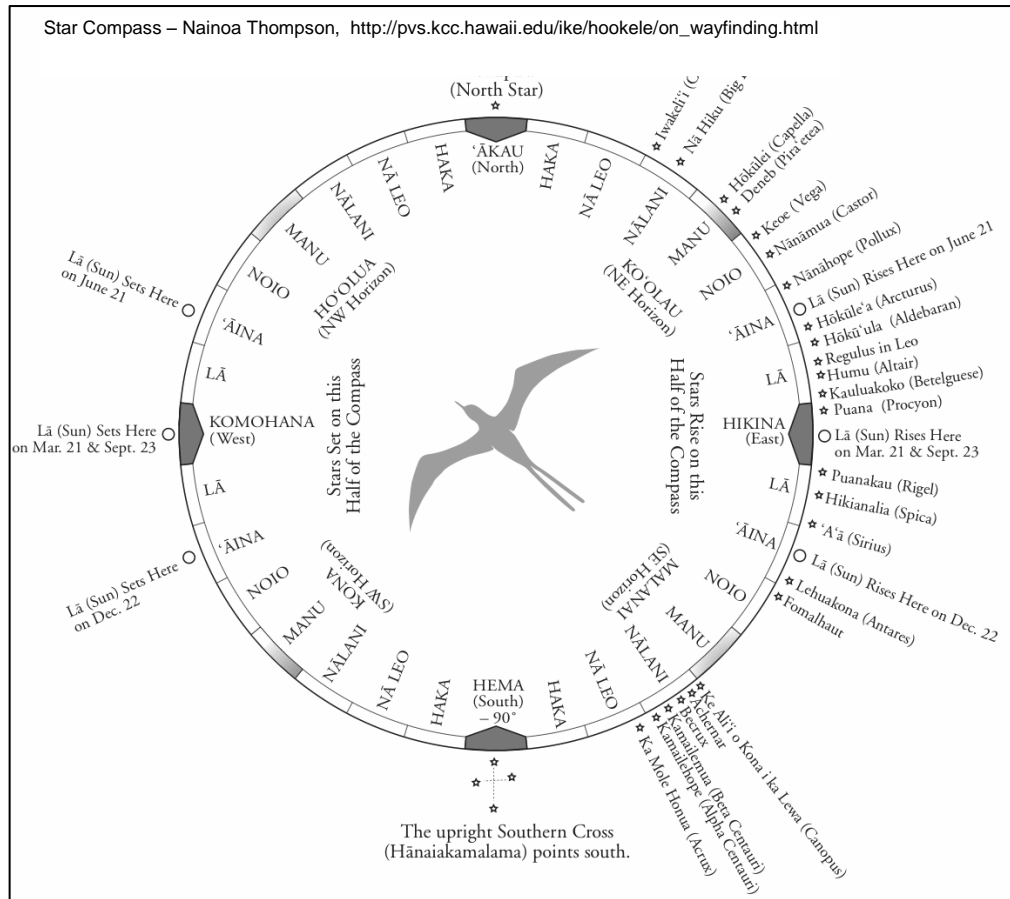
Storytelling with Moses stood out as a highlight for every teacher in this study. It was expertly presented, funny, engaging and perfectly set up the theme of the fieldtrip. Students also enjoyed the story and were moved by the power of Moses’ performance. Some children even wanted to learn/use storytelling in school.



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Fans of the planetarium show were moved by the beauty and interest of the stars and/or knowing how to use them. Teachers also reported that students were fascinated by the complexity of the stars and the star compass.

Though the storytelling and planetarium were the most popular fieldtrip components, each component (including Pacific Hall, canoes, plants, birds) stood out as best or most engaging for at least a few teachers and students. All respondents were very positive about the overall program.



Did students learn new information? Did they find inspiration?

Yes. Nearly every student reported that they felt as though they had learned something new. Teachers also reported about areas of curiosity and discussion among students. More than any other fieldtrip component, students learn and have questions about planetarium show content. They are fascinated to learn about the star compass and navigating by the stars, even if this information can sometimes be confusing. Thinking about the planetarium show, which includes images of Hokulea, moves students and teachers to ponder what it takes to make a voyage. That, in turn, helps them reflect on the Mo'Olelo, canoe and food-related activities. Student-generated ideas about possible classroom projects tend to focus on voyaging and storytelling; the bird activity was also mentioned as a topic of conversation and possible project work.

Did students enjoy the fieldtrip?

Yes. Fully 88% of students in this study rated the fieldtrip overall as Very Good or Excellent. Student comments throughout the written survey evidence enthusiasm and engagement, findings which are corroborated by teacher comments.



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Participant students overwhelmingly listed positive words when we asked them for two or three words which describe the fieldtrip. Topping the list were *fun* and *interesting*, followed by *amazing*, *awesome*, *cool* and *exciting*.

What feedback do teachers have about fieldtrip components? Do they work well in concert? What strengths and challenges do they see?

There was strong agreement among respondent teachers that the components of the field trip worked very well in concert. A few teachers felt that even though this was true for them, their students would have benefited from a more obviously articulated message about the overall big picture, and how each section relates to it. As we heard from teachers during formative testing, these respondents also suggested providing pre-visit materials and including a wrap-up activity to help students prepare for and then integrate these fieldtrip experiences.

Teachers offered mixed feedback about the pace and fullness of the trip. Some thought it worked well at the fast, busy pace they experienced. Others would prefer to slow down and limit the amount of content being delivered. Visiting additional exhibitions, such as the Doraemon, was distracting from the theme of the field trip.

As discussed above, the storytelling and planetarium portions of the field trip were enormously impressive and effective with teachers and students. The Mo'Olelo not only entertained and amazed the children, it set up the theme of the whole fieldtrip. The Planetarium fascinated students with the complexities of the star compass, an actual navigational tool. Hands-on experiences with canoe-building, plant seeking and food tasting were also seen as strong features. Some teachers felt that the bird activity needed to be better organized, but there is agreement that giving students an active role and an opportunity to present to the class is very valuable. The bird activity was where some students can use lived experience and prior knowledge.

Several teachers felt that the planetarium was not engaging, but this was due to students being sleepy or hungry (particularly at the overnight events). Other activities that teachers felt were not fully engaging included free time in exhibits.



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Teacher Survey Results

Teachers Weigh in on Messages & Coherence of Fieldtrip Components

Most teachers referred to navigation in some way when describing the overall message(s) of the fieldtrip program. A majority gave emphasis to the Native Hawaiian cultural context, referring to better understanding and appreciation of “our past,” learning from ancestors, getting guidance for our future from our past, and/or cultural preservation. Several other teachers also touched on themes of learning from or about the past, and early navigation, but with less focus on cultural preservation or sense of reverence. Apart from “navigation” just over half of teacher comments also cited “science” or some STEM-related subject area such as technology, sustainable practices, tools, methods, math, and the like. Using natural resources and sustainable practices was a common thread as well. Two people very specifically took the key message to be that modern technology isn’t always best, ancient ways also can be relied upon for survival.

- *The overall theme or message of the program seemed to be about learning from our ancestors and making their teachings relevant to our current times and our future. It wasn't just about learning to navigate, but about remembering our past to better our future.*
- *The theme of this program is all about the Hawaiian culture and how the past should have an effect on the decisions we make now and in the future. The students were able to see how the ancient people traveled without the use of modern day tools, and how they used natural resources to stay alive on these long voyages and when they arrived on new islands.*
- *I think the overall message of this program was to show our students that modern technology doesn't always mean better. Sometimes going back and using old techniques are just as effective.*
- *The navigational aspects was a metaphor for the Hawaiian saying that also incorporates science to portray it.*
- *Developing an understanding of how Ancient Polynesians navigated the ocean and used sustainable practices and resources to cultivate their lifestyles.*
- *I thought the message of the program was the beauty, wonder, and methods how things got to Hawaii. The people (with the storytelling), the animals (with the birds activity), and the science hall covered the scientific aspects of it. The planetarium show really explored the methods they used to travel. Well done movie by the way.*
- *Understanding navigation; respecting the environment and understanding how we can (and native Hawaiians) use our surroundings; multi-disciplinary (math, science, ELA)*

A majority of these teachers felt that the individual fieldtrip components worked well in concert to present a coherent message and experience (14 out of 19). Two people found that including the Doraemon exhibition was distracting and diminished the experience. Two teachers asked for more explanation or narration about the big picture and how each component fits into it to help students grasp it more readily; one suggested a wrap-up activity at the end to tie things together. While one teacher liked the fast pace of the fieldtrip experiences, two others felt it was too rushed and that there was too much information being crammed into the allotted time.

- *Yes, one of the best field trips I have ever attended.*
- *I believe that the components of the program work well together since all show essential parts of voyaging.*
- *I liked how the components moved quickly to keep student interest high and keep them moving. This is important for this age group and very helpful to educators. // Keep the fast-paced elements of the program. It was wonderful to see my 8th graders so invested--especially at the end of the year. :)*
- *I believe so; however, it seemed rushed at every section. I think the students would have enjoyed it more if more time was spent in certain sections and then a wrap up in the end that incorporated all components. // Try to have everything tie in to one another in the end for the students to better understand. Also, sometimes, cramming too much info in little amount of time might be too much for the students.*



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A few teachers took the opportunity to offer praise and thanks, or offer other suggestions. Three suggestions or requests: having more time in Hawaiian Hall following the story, offering pre-visit materials for teachers to prepare students for the experience (something that featured greatly in formative evaluation findings), and perhaps creating an informational scavenger hunt activity for students.

- *never apologize or be intimidated for anything you may be unclear or unsure of, nobody has the right to expect you to be perfect*
- *You all did a very good job. Very informative and hospitable.*
- *Keep up the great work! Students had a blast! Mahalo nui loa!*
- *I wanted to thank the two leaders that were with us during the overnight trip. They both seemed to enjoy what they do. Also, to all of the staff members. The staffs at Bishop Museum are always impressive.*
- *I thought it was very helpful to have the field trip scheduled on a day where it was closed to the public. It made it more personable and it felt like all attention was give to our students. It was very heart felt, since I am of part Hawaiian ancestry. To be reminded of my ancestors was special.*
- *Would have liked visiting the Hawaiian Hall after the story.*
- *Having something for the teachers to prepare students before the field trip and post activities are always great.*
- *Having the kids do scavenger hunts with pieces of specific information they are to gather is very effective at the 5th and 6th grade level.*

Teacher Perceptions of Student Engagement & Highlights

In post-experience online surveys, we asked classroom teachers which fieldtrip components most engaged their students, and what students were excited about or discussing afterward. We also asked them to lead a class discussion and report back to us on the survey about which fieldtrip components were most memorable for their students. Every component was identified as a highlight by at least a few teachers, and they were all very enthusiastic about the whole program.

- *Yes! They seem to have enjoyed themselves. Mr. Moses captivated the students with his enegetic and excellent story telling. The walk on map at the Pacific room also engaged the students and gave them a better idea of where our islands are located on a map. The bird program & planetarium were also engaging. I don't think there was anything the students didn't enjoy.*
- *I liked that each activity tied into each other, moved at a good pace; involved a variety of ways to present the lesson; and most lessons required the students to be actively involved.*

Clearly, **storytelling with Moses** stood out - every teacher commented on it. All of them were excited about this part of the program; only one person felt that this was less engaging than other parts of the experience because the students were only watching, not actively participating.

- *From the get-go they started off with the play and got our children wondering and laughing. // And of course our kids remembered the shishi part of the play and the gods drinking it.*
- *I think started off with storytelling with an excellent way to invest and engage the students and give them the*





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context for the field trip. Most of my students had been to the field trip before, but the way in which this field trip started allowed for them to understand that this field trip program is unique in its own way. // The storytelling at the beginning was a favorite because the kids were immediately entertained and investing in the story. Many students cited this experience as their favorite part.

- My students enjoyed and were engaged by the storytelling. The storyteller was extremely talented and they enjoyed listening to him and participating in his canoe building exercise.
- Story telling, he was very engaging and captured their attention from start to finish
- The students really enjoyed the storytelling and the canoes. They enjoyed the visual concepts and how well it fit their project needs.

Second to the Mo'olelo, was the **planetarium**, which was mentioned by eight respondents. Their students were impressed by the complexity of the stars and the star compass. They also highlight ties to Hokulea.

- [most memorable] The planetarium. Students learned how complex the stars are and how one can make sense out of the complexity.
- Overall, I felt that our students were very engaged by the program. They really enjoyed the planetarium and the storytelling. It was just the right amount of time for each component of the tour.
- Planetarium was most of the students' favorite part. Students really learned a lot about the star compass.
- They spent a lot of time talking about the stars and navigation during the bus ride home. // The planetarium was a memorable part because the students said they liked learning about the stars and navigation. This was especially timely since students had visited the Hokulea earlier this year.



Teachers mentioned the **garden/tasting, canoe and Pacific Hall** activities with about the same frequency (about six comments each). Comments don't always make clear which specific activity is being discussed, e.g., looking at canoes or building one. Predictably, sensorial activities such as tasting and building were especially memorable.

- [most memorable] learning about provisions on the canoe and tasting the dried hala powder
- [most memorable] Tasting the powder in the garden. Students learned how plants/ food were transported during the voyages.
- The most memorable was the garden emphasis, the tasting of the hala and the rhyming words.
- building va'a
- The students enjoyed the more sensible areas in a sense they felt like the Hawaiians; or even looking at the different canoes. The students really enjoyed the storytelling and the canoes. They enjoyed the visual concepts and how well it fit their project needs.





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- Lastly, being able to explore independently in various halls was also very good for students.
- Story-telling and Pacific Hall was the most engaging. Seeing all the artifacts of our ancestors in Pacific Hall. // While we were going through the programs, it was nice to see them pulled to different exhibits and taking pictures and reading the information. Nice to see them have pride and interest in our lāhui Hawai'i.



The **bird activity** was also mentioned by six respondents. Teachers appreciated the active role this gave students, though some felt it could have been better organized. Two teachers also referred to the Science Center as a highlight, but were not specific about whether that was free time to explore or time spent with the bird activity.

- [most memorable] *The legends from the storytelling. Hawaiian birds and how each bird had a different purpose. LEARN: Which bird to follow in to land and which one not to follow.*
- *They were most engaged when they were actively engaged in the presentation/activity. The storyteller was excellent! The bird activity was also v*





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Least engaging. Several teachers felt that the planetarium was not engaging, but this was due to students being sleepy or hungry. Other activities that teachers felt were not fully engaging include free time in exhibits and the bird activity which they felt could be better organized.

- *Least effective was the artifacts sharing. I think what would help because of time wise, if there were more guides to help. After the mini group and sharing of the Wa'a if there were guides around the different casing so the kids could look at what they felt was interesting to them and someone was close by to enhance them a little more with the knowledge.*
- *Least engaging was the story only because students were only listening and not actually engaged with something to do.*
- *Least engaging was when the kids were given time to explore an exhibit on their own.*
- *The least effective at engaging was the birds activity because it wasn't very organized and the students were slightly confused at their expectations.*
- *The least effective was probably the planetarium because some students were so tired they had a hard time staying awake. However, for other students, the planetarium seemed like a positive experience.*

Teacher Perceptions of Students' Take-home Messages

According to teachers who were able to explore take-home messages with their students, overall messages of ancient Hawaiian/Polynesian navigation come through clearly. Sensitivity to preserving and learning from the past is also clearly evident in their comments.

- *learn and discuss what you are seeing and experiencing; have fun and open your mind to learn something new*
- *Navigation and have fun!*
- *Navigation with nature, ancient Polynesians navigating with the stars and birds to find new lands, and how ancient Hawaiians lived back in the days.*
- *the importance of the Hawaiian culture in looking at the past in order to know how to move forward*
- *The overall message taken was that ancient Hawaiians had many methods of navigation that allowed for Polynesian exploration.*
- *to perpetuate our culture*
- *We are all from somewhere important and had to travel with our knowledge to start somewhere new.*

Teacher Reports of Student Questions and Ideas

Teachers who described **student conversation and questions** after the field trip typically mention aspects of the planetarium show and/or canoe voyaging. The star compass and navigation are fascinating, and sometimes confusing. There is also excitement about the Mo'olelo, what it takes to make a voyage, and the Hokulea story. Ideas about possible projects or goals also tend to focus on voyaging and storytelling. The bird activity was also mentioned as a topic of conversation and possible project work.

- *Many of the kids asked me about the Hawaiian star navigation system we learned about in the planetarium.*
- *Students said they wanted to learn more about the stars and navigation but not necessarily spend more time in the planetarium.*
- *The navigation information in the planetarium - lots of questions about navigating. How to navigate, how long does it take to memorize all of the information.*
- *Students seemed most engaged by the storyteller. They spoke about how they enjoyed his style of telling a story. // Students discussed their knowledge of the Hokulea.*
- *We got in to a discussion about the voyage of Hokulea and how it related to what we had learned at the Museum.*
- *We talked about what types of people and skills would be needed on a canoe voyage as well as supplies that would be taken.*



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- *Yes they discussed the trip since it was mostly based on the project I have assigned to them based upon STEM canoe building and canoe plants.*
- *Students had many questions and were especially interested in the tie to the Micronesian and native Hawaiian components.*
- *Students said they loved the field trip! Many of them expressed interest in returning to the museum with their families.*
- *They did enjoy the bird activity (many of them did not know that birds could travel that far across the open ocean)*

Did students have any ideas for new school projects based on what they did during the field trip?

- *Acting out a scene in history.*
- *learn to be able to tell a story like the storyteller*
- *Birds and star navigation.*
- *Build model houses and canoes; create a stick map/compass*
- *Create a star map, build a canoe (STEM), and plant a garden*
- *Create a voyage of your own--navigate and plan what you'd need to bring.*
- *Yes, the canoe construction and the ahupua'a formation.*
- *We will be doing a research writing assignment in class and I'm going to encourage some of them to do birds that they saw during the bird activity*

Teachers Offer Component-specific Feedback

There is strong agreement among respondents that the components of the field trip worked very well in concert. A few teachers felt that even though this was true for them, their students would have benefited from a more obviously articulated message about the overall big picture and how each section relates to it. Visiting additional exhibitions, such as the Doraemon, is distracting from the theme of the field trip.

- *Overall, I felt that the field trip flowed nicely. All of the parts of the tour seemed to connect and relate back to each other.*
- *Yes I think they all tie in really well to the overall concept except they aren't really explained or summarized to the kids so that they understand and see the connections as well.*
- *I don't think we ever got a BIG picture explanation from any of the museum educators. It felt like we were trying to cram too much into one evening. The Doraemon exhibit took some of our time and that made the night chaotic. For the kids and adult guests to understand the learning objectives of the evening program it is important not to confuse them with non-related exhibits. It would have been better not to have attended Doraemon.*

Mo'Olelo. All comments are very enthusiastic. Teachers loved the way this part set up the whole fieldtrip.

- *Excellent story teller! He was really able to pull students in with his voice and student participation.*
- *It was a perfect introduction for the trip.*
- *This was the most riveting part of our visit. Uncle Moses had all of our attention, and what he was sharing made sense.*
- *We all loved this. The actor was incredible, and the story was an excellent set-up for the rest of the visit.*

Planetarium. The planetarium show is most effective when students are awake and the presenter is engaging them with questions. Teachers appreciate and enjoy the information, and wrapping up the fieldtrip here, but two note that it feels long and too packed with information.

- *A bit disjointed with the back and forth clips and star gazing. At times I felt lost trying to follow along.*
- *I enjoyed how they closed with the planetarium.*
- *I enjoyed this. However, students were really tired and had a hard time staying up.*
- *I love the stars. And would like more info on the houses in which they travel.*



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- *Most of this was interesting; there were times when it felt a little long. It was great when the presenter asked us questions that we were to try to figure out.*
- *Students really enjoyed this portion but seemed to be a lot of information jammed in to a short period of time.*
- *The students really enjoyed this part of the field trip. The presenter did an excellent job of keeping the students interested.*

Canoe. Apparently this part of the program has been changing. The hands-on building activity stood out for the groups that did it.

- *could have pointed out some direct correlations to the floor map and the islands that were referred to in the Planetarium.*
- *Interesting and much better to do in small groups.*
- *More guides so the kids could look more in the casing and see what different cultures was using. Some kids even asked about the fishing with a kite.*
- *One of the most visual, but would like to spend more time in the section. So much great info, but it seemed rushed.*
- *Students liked the displays. They could compare and contrast easily.*
- *This was excellent and the kids loved putting the va'a together in the Pacific Hall.*

Garden. Teachers appreciated this for many reasons and would have liked more time with it. One suggested that in addition to this introductory level presentation, another one be available for students who arrive already familiar with the basics.

- *Students loved this portion and being able to engage themselves and play the part.*
- *Another intriguing section that I would have enjoyed spending more time at. Especially would have liked the students to go and explore the garden at their own pace.*
- *Good presentation about food and survival on the voyages.*
- *Great to see the different plants and how they had multiple uses.*
- *Mahalo Mahalo Mahalo Mahalo nui to the Brahhdahh who guided us and when I asked about the uala and what verity it was and answered me and told me to go and pick one. I told him I can't go in there and pick one to take but I take back with me what he gives. Then to the the staff who was working in the uala patch thank them to for their information and offing in which I told them the same thing to. I cannot pick, only what you give I can go with. And the Brahhdahh came back with a small bag with some of both Uala Kaneohe and Uala Piko. Mahalo Nui Aloha!*

Birds. Though two teachers felt that this could have been better organized or better contextualized, many teachers appreciated it for specific reasons. The information is good, students can learn about birds that they have seen, sometimes using their own knowledge. Students play an active role and get the opportunity to present to the rest of the class.

- *Could be a bit more organized and meaningful for the kids. Activity idea is great and something they enjoy doing but they didn't really understand the purpose of learning that information.*
- *Fun activity. The kids don't get a lot of opportunities to present to a large group so this was fun for them.*
- *I liked how students had to work in groups and collaborate with each other, then present their information to the whole group. This is a learning strategy we often use at school in our classrooms.*
- *Once again, very interactive and applies to the students. Some students have noticed some of the birds around their homes and was able to inform their parents about them.*
- *This was a great learning activity and the kids were pushed to present, this was very well done. I would turn the room around and use the stage on the other end. I would consider reinstalling the track lighting. I thought this was a well composed activity.*
- *very interesting and informative of the birds that they may or may not have ever seen.*
- *very interesting; students could use prior knowledge*



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Teachers Consider the Fieldtrip Program Description

Ten teachers were presented with questions about how well the program matched the description and met relevant standards. Nine of them felt strongly that the program matched the description extremely well. However, one of those nine mentioned that “there were [not] many elements that hit upon characteristics of oceans and the atmosphere.” The tenth teacher felt that the state standards are culturally rooted and so can’t be applied to this type of program.

- *Hawaiian Islands standards are covered during the first semester and the other Pacific Islands are covered during the second semester.*
- *I think the program did an excellent job at addressing the standards highlighted in the program description.*
- *I feel that the program addressed most of the standards and helped out students see how they are connected to everyday life.*
- *Overall, the program addressed the components in a meaningful way, although there is one listed (SC 8.8.6) that I may have missed in the trip.*
- *The program components seemed to align very well with the standards highlighted in the program description. As a math teacher, I am able to use the information about the canoes and how they were created on a smaller scale before being built on a larger scale, to emphasize what I have previously taught them about scale drawings and models.*
- *Being that these are standards made with a foreign mentality, it is really difficult to align the programs with the proper "standards".*

Teachers Reflect on State Standards

The table below presents all teacher responses about which standards they felt were well met, and which ones are most important to them.

Please list specific standards you felt were met.	Which of these standards is most important to you teaching context?
Explained the past, described how the earth and weather patterns affected navigation, used geographic representations, explained technologies impact on society...	n/a
SC.7.3.2, SC.8.8.9, SS.6.2.2, SS.6.6.1, SS.7PI.7.1, 7.EE.2, 7.G.1	
SC.6.2.1, SC.6.2.2, SC.8.8.9, SS.6.7.3, SS.7PI.7.1	SS.6.2.2
All except SC 8.8.6	As an English teacher, 7.EE.2 is one that I could apply most easily in my class.
SC.7.3.2, SS6.2.2, SS.6.6.1, SS.6.7.3	SS.6.6.1,SS.6.2.2
SC 6.2.1,6.2.2, 7.3.2, 8.8.9 and SS 6.2.2, 6.6.1, 6.7.3	SS 6.2.2
7.G.1, SS.6.2.2, SS.6.6.1, SS.6.7.3, SC.6.2.1, SC.6.2.2, SC.7.3.2, SC.7.5.4, SC.8.8.3, SC.8.8.9	7.G.1, 7.EE.2
SC6.2.2, SC6.2.1, SC7.5.4	

All 19 respondents commented on the importance of state standards when seeking and selecting field trips. The majority, 10 out of 19, agreed that standards are an important part of the process. Several specified that fieldtrips have to meet standards so they can make the case to the principal. Four stated that standards do not play a role in choosing fieldtrips, though one of these explained that s/he likes to meet them regardless. Two teachers emphasized content which enhances classroom activities over strict adherence to the standards.



Summative Evaluation Report

- *No, hitting the standards does not play a role in getting permission to attend the museum, yet as a teacher I do want to hit the standards.*
- *Definitely the alignment of the standards make a huge impact on which field trip to choose. Since we are only able to choose 2 field trips per year, we are very selective on our decisions. For the past 3 years, Bishop Museum stay has met the academics portion and also provides the social needs for the students.*
- *Having a set of standards expedited the field trip approval process and made it much more appealing to plan a field trip like this.*
- *It plays a significant role, especially since our classes are based on a rotation and we have less than an hour per class. It is important for us to be able to find a field trip that fits our quarter needs and not take away from precious class time.*
- *When we apply for a field trip with our boss (the principal), we need to justify how and why it fits into our curriculum (all schools need to do this). So, yeah, it does have an influence/impact when your programs are aligned the way you have them.*
- *It is important to select field trips that enhance the lessons that are being taught in the classroom.*

Teachers Give Feedback about Fieldtrip Logistics

Teacher feedback about fieldtrip logistics falls into three main categories: booking and/or communications issues (5), time management of students while on site (8), and praise and gratitude because everything was easy and smooth (5). Several teachers reported having a difficult time getting responses from Museum staff. Teachers also ask for bathroom or rest breaks, more time to explore exhibits, and a later start time. Other teachers appreciated the fast pace of the program, even the transitions were smooth.

- *I was not in charge but the teacher that was had a difficult time getting some activities for our stay-back group of students to do. I know she mentioned that she emailed and emailed but got no response. Not sure who she was communicating with though.*
- *Great organization. It was a little hard to get a hold of main contact to confirm the field trip.*
- *I think that overall everything went really well. I had a hard time communicating with certain people when I asked about getting resources for our students.*
- *The cafeteria manager needs at least three weeks' notice in order for our fieldtrips to be approved because it impacts his lunch count. It would be beneficial to get the schedule as soon as the confirmation so that we may communicate the necessary info to the appropriate individuals on our end.*
- *I waited a long time between requesting booking and getting confirmation. I can tell you guys are busy ;-)*
- *The only suggestion I have is to add in one or two bathroom breaks during transition time.*
- *I believe that the trip should include a mini break since most students could not hold their attention when it came to the school's recess break period. Many were grumbling by the end of the second phase.*
- *My suggestions for the field trip is to provide more time for students to explore the science center. Previously, we had more time for students to explore. Students really enjoy the Volcano room and many have mentioned that they wish they were given more time.*
- *Everything really worked well! My one comment is that some of our students mentioned that they could have used a few more waffles in the morning. Middle schoolers can eat! Other than that, I wouldn't change anything else. Even though students were really tired at the end of the night, this helped to get most of them right to sleep.*
- *We were really late for lunch because the activities ran over and were late.*
- *The only feedback I have is that the 8:45am start time is difficult for schools coming from the Coast. I appreciated the flexibility that the organizers had though as we were a little late arriving.*
- *I didn't work on the booking, communications and transportation, but I did appreciate the great transitions. We were never idle which kept the children busy.*
- *I thought the activities were well organized, set at a good pace, and allowed students to be active participants in their learning. I would have liked to have given pre activities or a briefing on the activities that was planned for the students so I could prepare them before we went on the field trip.*



Summative Evaluation Report

- *I think that the whole trip went extremely well. I had no complaints and neither did the students.*
- *Everything went fairly smoothly in booking the field trip. I was in touch with Jennifer P. and she made sure that I had all of the information our school needed to plan the trip.*
- *Hadley has been great to us, for two years running now. We're very appreciative of her. And very glad to have her running an activity for us this year.*
- *all worked very easily*
- *I am the one that personally dealt with the logistical aspects of our trip and I have to honestly say that Jennifer Poloa and staff have nothing to change. They were very encouraging and supportive and I felt like we could not have asked to be better taken care of.*

Suggestions for Other Fieldtrip Topics

Many teachers offered ideas about fieldtrips or subject areas for the Museum to address. All of their comments are listed here, along with the text of the question.

Question: The Bishop Museum is exploring the possibility of developing another fully integrated field trip program with supporting online curricula for Hawaiian Middle School students. This is the model we are using for I KA WĀ MA MUA KA WĀ MA HOPE, which presents STEM through the lens of Pacific voyaging. Do you have any suggestions for additional topic areas that the Museum could address in an integrated field trip? We are especially interested in your thoughts in light of Common Core Standards and the new NGSS standard implementation.

- *Place names and stories to share of locations all around the islands. For example Maui and Hele-A-Ka-La the story of catching the sun to slow it down for grandmothers kapa, is said to be out in Nanakuli. As the story of Kane and Kanaloa there is a Heiau out at Poka'i bay Kaneilo which is said to be used for navigational purposes. People our kids seen it been there but have no clue of the past that is right there under their feet. How kings and queens have dwelled in those same areas. Once again mahalo mahalo mahalo mahalo. Aloha Nui*
- *Quarter 4 is about ecology and evolution. perhaps spending more time in the garden and reflecting on how the canoe plants evolved to take root in the hawaiian islands would add to the field trip. Or even have someone from the museum do a follow up in the class to reinforce the information from the trip.*
- *Possibly connecting conservation, preservation, ahupuaa and the seasons might be another great topic.*
- *I think it would be great to have a brochure for parents so they know what they are paying for. Some parents had a hard time giving the 45 dollars for the field trip because they didn't see it as a learning experience. My suggestions would be to have the benchmark alignments on the brochure so the parents have more insight to what the field trip is about. Maybe more students will be able to join us next time.*
- *Integration of more maps - having the kids trace the Polynesian triangle. Using more information on weather patterns and ocean currents. More information on what was taken on the boats.*
- *Oceans, Stars, Gravity. There's lot of possibilities depending upon what type of rotating exhibit you have in Castle Hall.*

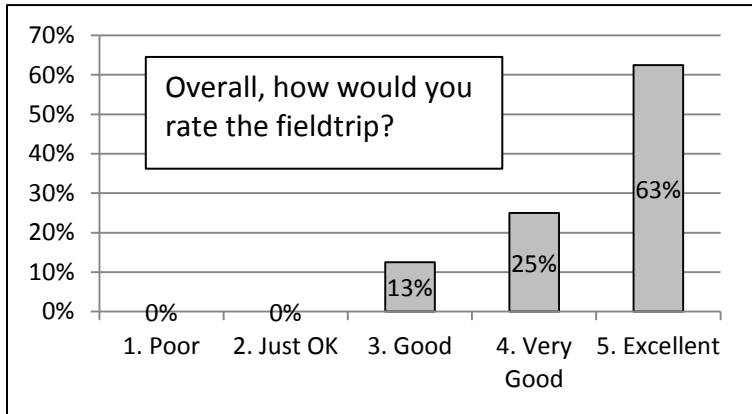


Summative Evaluation Report

Student Survey Results

Student Satisfaction

Students who participated in this survey rated the fieldtrip very highly. Fully 88% rated it as Very Good or Excellent; the rest rated it as Good, none selected Just OK or Poor.



When asked for two or three words which describe the fieldtrip, students overwhelmingly wrote enthusiastic, positive words. Out of 102 words offered, only two are neutral or negative: *boring* and *okay*. Topping the list are *fun* and *interesting*, followed by *amazing*, *awesome*, *cool* and *exciting*.

<i>Fun</i>	18
<i>Interesting</i>	13
<i>Amazing</i>	9
<i>Awesome</i>	7
<i>Cool</i>	6
<i>Exciting</i>	5
<i>Educational</i>	3
<i>Excellent</i>	3
<i>Fantastic</i>	3
<i>Good</i>	3
<i>Great</i>	3
<i>Learning</i>	3
<i>Entertaining</i>	3
<i>Historical</i>	2
<i>Informational</i>	2
<i>Knowledgeable</i>	2

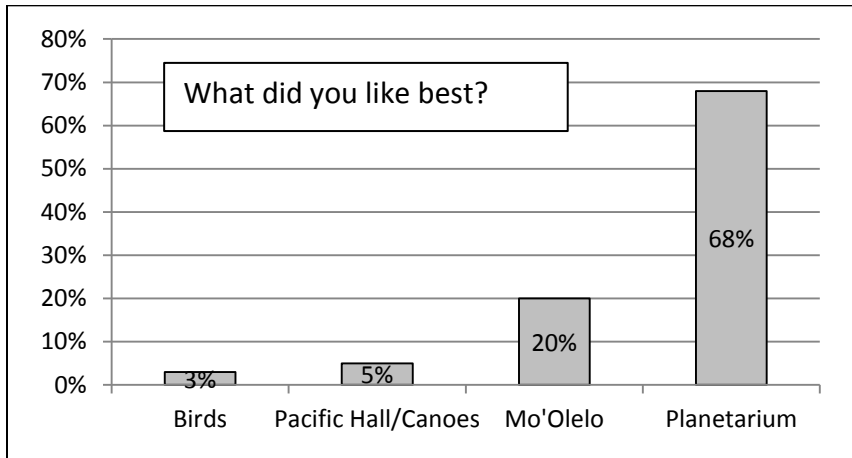
<i>Awesomely Fun</i>	1
<i>Boring</i>	1
<i>Crazy</i>	1
<i>Cultural</i>	1
<i>Enjoying</i>	1
<i>enthusiastic</i>	1
<i>epic</i>	1
<i>extraordinary</i>	1
<i>fascinating</i>	1
<i>fun place</i>	1
<i>good Hawaiian story</i>	1
<i>intimate</i>	1
<i>okay</i>	1
<i>pacific</i>	1
<i>scientific</i>	1
<i>super</i>	1
<i>wonderful</i>	1



Summative Evaluation Report

Student Highlights

The planetarium was by far the most popular fieldtrip component among students. Sixty-eight percent named or described the planetarium when writing about what they liked best. Most planetarium fans referenced the beauty or interest of the stars and/or knowing how to use them. A few noted the views and/or the story of Hokulea. The Mo'Olelo was a distant second. Students liked that it was funny, and the actor was impressive. A few children favored the Pacific Hall and related canoe activities, and the bird activity.



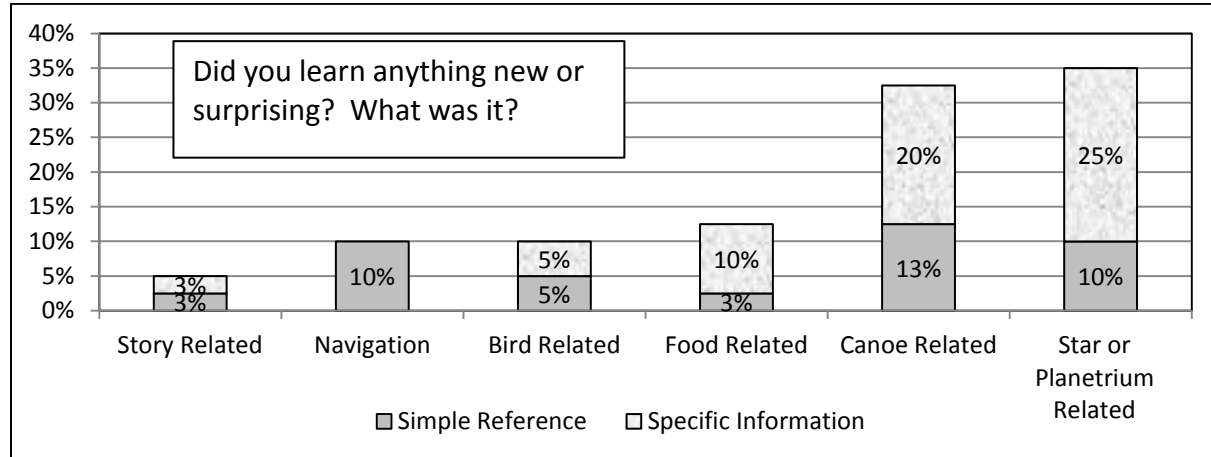
- *I like the planetarium because I would watch slide shows, stars, and planets there, which was interesting & cool at the same time.*
- *When they talked about the stars, like how this man can use them.*
- *I liked where we went to learn about the stars inside the planetarium because the stars are beautiful & we got to see awesome constellations.*
- *I liked how you showed how to find some stars.*
- *I like the planetarium because it looked 3-dimensional & the stories were cool.*
- *I liked the planetarium the most because it showed a first-person view of the canoe.*
- *I like the story telling of the Hokulea.*
- *I like the play in the beg[in]ing [be]cause it shows us what [is going to] happen.*
- *I like when the guy performed & told us a story at the same time because he was good at acting & it was amazing how he remembered all of the words.*
- *The beginning what the guy that talks at the stage about, because his voice sounds like [an] actor's in movies.*
- *I liked when he was telling us the story because it was so funny.*
- *the boat because they have unique way to navigate.*
- *I liked learning about all of the different canoes because they looked amazing & they were a huge part of history.*
- *The bird, because I learned some new birds.*



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Student Learning

Self-reports of student learning on paper questionnaires were very high. Thirty-six out of 40 students stated that they learned something new (90%); two felt that they had not done so, and two did not answer the question. Students most often described something related to stars or the planetarium. Lessons related to canoes were a close second. Less common were lessons related to food, birds or the story. A majority of students offered specific information or ideas, others simply named a topic.



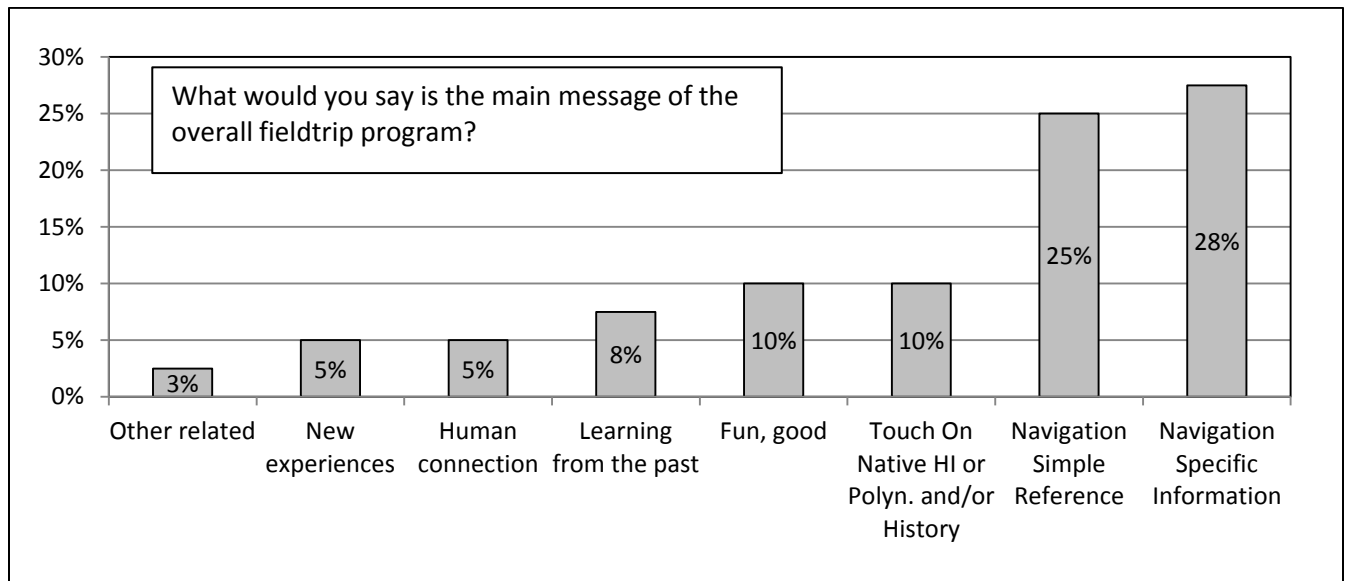
- *I learned how they used stars or wind to keep them moving. I learned about birds, Hawaiian history & the canoes.*
- *I learn something surprising. It was when I learned that a guy (Papamau) from Micronesia knew how to navigate & taught the Hawaiians & the Hokuleas.*
- *I learned that we could use the stars as a compass.*
- *I learned about the North Star. It stays in its place, while other stars roam around, and [it] guides us like a compass.*
- *The surprising thing is the stars can teach us to go anywhere.*
- *the stars can make shapes*
- *I learned that a boat is called a Va'a. I learned a new story about 3 goddess brothers. I learned how to survive with just plants.*
- *I learned about the Polynesian triangle. [It's] Hawaii, Easter Island & New Zealand.*
- *the Polynesian triangle*
- *It was about canoes & the shapes of the canoe.*
- *They showed us the different canoes for different stuff that it is used for.*
- *what a hull is; it is something on the boat that balances it*
- *I learned that it would take one month to go from Hawaii to Tahiti.*
- *I learned plants have many uses.*
- *I learned that powdered food last long.*
- *They turn their food into powder.*
- *I learn the bird. I learn that what the 6 different bird. I learn what they eat, what they behave, fun fact & culture connection & the habitat.*
- *It was the birds I never seen.*



Summative Evaluation Report

Take-home Messages Perceived by Students

Just over half of the students felt that the main overall message of the fieldtrip was navigation; about half of these respondents offered some sort of detail or elaboration about navigation. Specific points about navigation typically focused on using stars or natural, non-electronic means to find the way. In smaller numbers, students touched on Native Hawaiian and/or Polynesian history. These references were not very specific; however two other students very pointedly wrote about learning from the past, e.g., “look back at the past to see the future.” Themes of human connection came to two students: “I would say the message is coming together & unite,” and “that we are all the same & no one is different, like the Hawaiians travel to meet other people to see new cultures.”



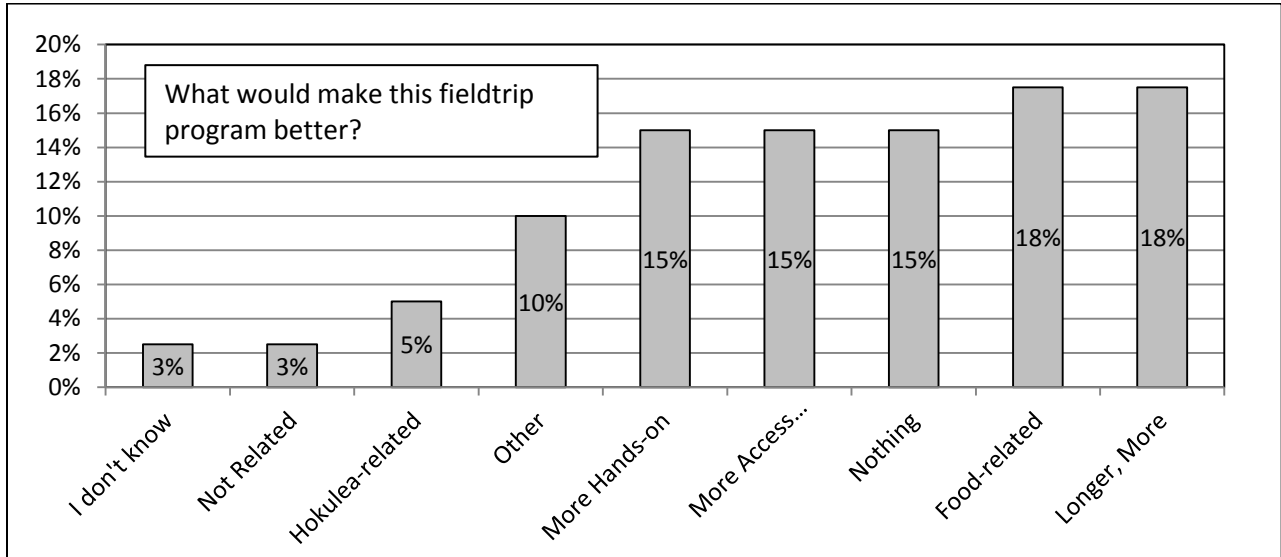
- *how the Pacific Islanders used astronomy & how they traveled on the Hokulea*
- *I think that they were teaching us navigation & how they used the stars.*
- *knowing how to travel with stars*
- *that you can navigate with nature*
- *The main idea is how & what they used [to] find direction.*
- *the main message of the overall field trip was different ways to navigate around the world.*
- *There are other ways to survive & navigate.*
- *to know about navigation, who taught who, or even to know about history*
- *You don't need electronics to do amazing feats.*
- *I guess to have fun & get to learn new things.*
- *It was fun & told us about the field trip, & Hawaiian history needs more information.*
- *Thank you. I had lots of fun there, & it was exciting, so [I] hope to come again.*
- *Dear Bishop Museum, thank you for teaching us. The field trip is a about in our country.*
- *The field trip tried to say that the Hawaiians tried to spread culture.*
- *I think it is telling us about the history & now. Also facts too.*
- *look back at the past to see the future*
- *I would say the message is coming together & unite.*
- *that we are all the same & no one is different, like the Hawaiians travel to meet other people to see new cultures.*
- *Thank you for letting us explore the stuff in Bishop Museum.*
- *It is pretty fun because there [are] so many stars.*
- *a boat that is really cool*



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Student Suggestions for Fieldtrip Improvements

Students most often suggested that the fieldtrip would be better if it were longer or if there were more of something they liked, such as stars. Equally frequent were references to food: more treats in general or more voyage foods to sample. Second-most cited improvements include nothing (it's already great), more access to exhibits (canoes, whale, volcano, and science center), and more hands-on activities. A few students would like to have more Hokulea content; one would like to play games that ancient people played and have a canoe-building project, and one would like it to be more scientific.



- if it was longer
- To get to see around more & more information, examples, & props.
- if there were more stories about the past!
- It would be better if there [were] more stars.
- to make it more longer & more interesting histories about navigating.
- More food examples & hands-on activities
- Cookies & milk for snacks there
- I think nothing should be changed.
- The field trip is awesome; there's nothing to change.
- I [get] how great it is, but you could let us explore the Hawaiian Hall more. That would be nice.
- getting to see the volcano & everything else that we missed
- Letting us sit on the whale & sit in the canoe.
- if we could see how the volcano erupts in the science room
- having to play some games that they played long ago in the past and having to do a project having a group working together making a canoe.
- It [needs] to be more hands-on.
- More scientific
- It would be better if we saw the Hokulea.
- If we could of watched about the canoe sailing, or if they could of brought some people to talk to us.



Appendix A – Teacher Instructions for Facilitated Discussion and Student Survey

Bishop Museum field trip program:

I KA WÄ MA MUA KA WÄ MA, HOPE —THE FUTURE IS IN THE PAST: STEM through the Eyes of Voyaging.

Evaluation, May 2014

Instructions for Teachers to Guide Classroom Discussion & Complete Online Survey

Note: Only two classes also did the self-completed student survey.

Dear Teacher,

Thank you very much for agreeing to help Bishop conduct an anonymous survey of your students. They will provide important information to the museum. Please follow this guide to administer the survey before leading the class discussion described on the following page.

- Please explain to your students that the Bishop Museum would like their feedback about yesterday’s fieldtrip, so that the Museum can understand how the field trip is working from your students’ point of view.
- Please tell them their feedback is important to the Museum.
- Assure them that they will always remain anonymous (no one will know their names). Please tell them that the survey is not a test and won’t be graded. Let them know that you won’t even look at the forms before mailing them to the researcher.
- Before passing out the form, ask students to think quietly to themselves about the field trip and what they remember about it. Discourage conversation until after the surveys have been completed so students will share their own ideas on the survey.
- Encourage them to answer all the questions in a complete and thoughtful way.
- As you pass out the forms, call attention to the one-page information coversheet stapled to the front of the survey form. This is for them to read and keep, they don’t need to be signed or returned to me.
- Please do not administer the survey to students who did not attend the field trip.
- Place completed forms in the shipping envelope provided and send asap.

Thank you again for taking time to do this!

-Wendy Meluch

Program Evaluator

wendy@VisitorStudies.com

415.897.4051



Bishop Museum field trip program:

I KA WĀ MA MUA KA WĀ MA, HOPE —THE FUTURE IS IN THE PAST: STEM through the Eyes of Voyaging.

Evaluation, May 2014

Instructions for Teachers to Guide Classroom Discussion & Complete Online Survey

Note: Only two classes also did the self-completed student survey.

Dear Teacher,

In addition to administering the student survey as described on the previous page, we hope you can take time to lead a class discussion about the field trip, and then report back to us about it in an on-line survey. You will also receive this message by email. Thank you very much for your time and help!

-Wendy Meluch

Aloha,

On behalf of the Bishop Museum, mahalo for bringing your students to take part in the "KA WĀ MA MUA KA WĀ MA HOPE - The Future is in the Past" science and culture integrated field trip on DATE. We hope the experience was fun and interesting for you and your students.

As you know, this is a new program and we are committed to developing it with input from professional educators like you. We are asking teachers to lead a discussion with their class(es) and report back to us the outcomes of the discussion using a short online survey. If you accompanied students on the field trip, but do not work with them in the classroom, please ignore the classroom discussion guide below and go to the survey directly.

Below please find a discussion guide to use in your class(es) and a link to the survey. Please contact Senior Educator Amber Inwood at the Museum if you have any questions about the field trip program. If you have any questions about this email or the program evaluation, please feel free to contact our program evaluator, Wendy Meluch. If you have questions about your rights as a research participant, you may contact the UH Human Studies Program at 808.956.5007 or uhirb@hawaii.edu.

-Amber Inwood, 808 234 3291,
amber.inwood@bishopmuseum.org<<mailto:amber.inwood@bishopmuseum.org>>

-Wendy Meluch, 415.897.4051<<tel:415.897.4051>>,
wendy@visitorstudies.com<<mailto:wendy@visitorstudies.com>>



Summative Evaluation Report

Bishop Museum field trip program:

I KA WÄ MA MUA KA WÄ MA, HOPE —THE FUTURE IS IN THE PAST: STEM through the Eyes of Voyaging.

Evaluation, May 2014

Instructions for Teachers to Guide Classroom Discussion & Complete Online Survey

Note: Only two classes also did the self-completed student survey.

CLASSROOM DISCUSSION GUIDE:

We are asking that you lead a class discussion with your students as soon after your field trip experience as possible. We understand that not all students will agree about preferences and highlights, and it is important to us to capture the differing points of view if possible. Please try to write down a few notes to describe the range of responses and areas of broad agreement and disagreement that you hear in your students' comments.

- Please ask your students to reflect on the field trip experience for a moment.
- Ask them what stands out for them. What things do they think are important?
- Which parts were most memorable? Why?
- Was there a part of the field trip program that they felt was best? What did they get out of that section?
- Did any of the field trip components leave them with questions? What questions?
- How would they use the information they learned to start a new project at school or at home?
- What do students think the trip trying to tell them ---Are there changes they would make? How would they change it? What specific ideas and suggestions do they have?

SURVEY LINK: <http://www.surveymonkey.com/s/5B6RZ3F000BishopMuseumFieldTrip>

Thank you!

**We are looking forward
to seeing you again
at the Bishop Museum!**



Appendix B – Student Survey Instrument

Bishop Museum field trip program:
I KA WĀ MA MUA KA WĀ MA, HOPE —THE FUTURE IS IN THE PAST: STEM through the Eyes of Voyaging.
Evaluation, May 2014

Information for Students

Dear Student,

The folks at the Bishop Museum hope you enjoyed your fieldtrip.

Thank you for taking a few minutes out of your busy school day to share your ideas about the fieldtrip. The attached form is for you to fill out. This letter is for you to keep.

Your ideas and feedback will help Museum staff know what parts of the fieldtrip are working well, and how to improve the parts that are not working well for you. They want to make this the best field trip possible for students like you and their teachers.

Completing this form should take approximately 10 minutes. Taking this survey is completely voluntary and will never have any impact on your grades.

You are allowed to skip questions, but answering all of them would be really helpful to the Museum. This is an anonymous study, which means that you won't put your name on the form, and no one will ever know who wrote these answers.

Thank you for your time and thoughtful responses!

-Wendy Meluch
Project Evaluator

Additional information about this study:

This program evaluation is being conducted by Doris Ash and Wendy Meluch, evaluation consultants to this NHEP-funded project. If you have questions about this study, you may contact:

- Wendy Meluch, Evaluation Consultant, Visitor Studies Services, 415.897.4051
- UH Human Studies Program at 808.956.5007 or uhirb@hawaii.edu.



Summative Evaluation Report

Bishop Museum field trip program:

I KA WÄ MA MUA KA WÄ MA, HOPE —THE FUTURE IS IN THE PAST: STEM through the Eyes of Voyaging.

Evaluation, May 2014

Anonymous Student Survey

1. Overall, how would you rate the fieldtrip? (circle one)

1. Poor 2. Just OK 3. Good 4. Very good 5. Excellent

2. What did you like best? Why? Please be specific.

3. What are two or three words that describe the fieldtrip?

4. Did you learn anything new or surprising? What was it?

5. Do you have any questions about the things you saw, heard or did during the fieldtrip programs?

6. What would you say is the main message of the overall fieldtrip program?

7. What would make the fieldtrip better?



Summative Evaluation Report

Appendix C – Teacher Survey Instrument

Thank you for logging on to this survey, and for bringing your students to the Bishop Museum for the new field trip program: I KA WĀ MA MUA KA WĀ MA HOPE THE FUTURE IS IN THE PAST: STEM through the Eyes of Voyaging.

The Bishop Museum is committed to evaluating programs and exhibits with feedback from teachers, students and visitors. Your input will help the Museum create the best possible experiences for students and other visitors. Your participation in this study is voluntary, you may skip questions if you want to, but we hope that you'll share your thoughts with us. You are and will remain anonymous.

For more information about the program please feel free to contact Amber Inwood at the Museum. If you have any questions about this questionnaire or the evaluation process, please contact me.

Thank you again for your time and interest!
Wendy Meluch
wendy@VisitorStudies.com; 415.897.4051

1. During the field trip, did your students seem engaged by the programs?
What seemed to be most effective at engaging them? Least effective?
Please share your observations and suggestions.

2. After the field trip, did your students discuss it with each other or with you?
Did they have questions? What other evidence of interest did you notice?

3. If you were you able to lead a discussion with your class as requested by the Museum, please share student feedback.
If you were not able to lead a class discussion, please skip this question.
 - What were program highlights for your students? Why?
 - Which parts seemed most memorable? What did they learn about?
 - Did any of the field trip components leave them with questions? What questions?
 - Did students have any ideas for new school projects based on what they did during the field trip?
 - What do they think was the overall message of the field trip program?
 - Are there changes they would make? What specific ideas and suggestions do they have?

4. Your perspective as an educator is especially valuable to the Museum.
Please share your feedback about program overall.
 - What do you feel is the overall theme or message of these programs?
 - Do field trip components work well in concert to support a coherent message?

5. If you have any feedback specific to individual fieldtrip components, please share it here.
 - Mo'olelo (story)
 - Planetarium
 - Canoes
 - Garden
 - Birds

Questions 6 and 7 are about the program description and related benchmarks and standards. For your convenience those things are listed here. Please refer to them as needed to answer the following questions.



Summative Evaluation Report

**I KA WA MA MUA KA WA MA HOPE - The Future is in the Past
(Middle School Grades 6-8)**

If we stare into the future we'll see...nothing. The future hasn't happened yet. Turn around however and the view is endless. Through the lens of Pacific voyaging, this program helps students to explore the works of our ancestors and discover that S.T.E.M. is nothing new to us. In the course of 3 hours, students will explore the role of winds, waves and stars in navigation via the immersive full dome video of the newly renovated J. Watumull planetarium; learn about canoe engineering and structure in Hawaiian and Pacific Halls, brought to life through vivid storytelling; examine voyaging plants and their uses in the Native garden; and visit the Science Adventure Center to explore the role of birds in traditional navigation.

HCPS III Benchmark Alignments:

- SC.6.2.1 Explain how technology has an impact on society and science
- SC.6.2.2 Explain how the needs of society have influenced the development and use of technologies
- SC.7.3.2 Explain the interaction and dependence of organisms on one another
- SC.7.5.4 Analyze how organisms' body structures contribute to their ability to survive and reproduce
- SC.8.8.7 Describe the physical characteristics of oceans
- SC.8.8.6 Explain the relationship between density and convection currents in the ocean and atmosphere
- SC.8.8.3 Describe how the Earth's motions and tilt on its axis affect the seasons and weather patterns
- SC.8.8.9 Explain the predictable motions of the Earth and moon
- SS.6.2.2 Explain the past on its own terms; not judging it solely by present day norms and values SS.6.6.1 Examine the ways in which different cultures have influenced families and communities
- SS.6.7.3 Analyze patterns of cultural encounters and exchanges and assess their impact on societies
- SS.7.PI.7.1 Use geographic representations such as maps or models to explain population distribution and the physical and human characteristics of places in Oceania, including landforms, natural resources, climate, river, lakes, bridges, dams, roads, and buildings

Common Core State Standards (CCSS) Alignments:

- 7.EE.2 Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related.
- 7.G.1 Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale

- 6. Based on the above information...
 - How well do you feel the program matched the description?
 - How well do you feel the program components addressed any of the standards highlighted in the program description?
 - Please list specific standards you felt were met.
 - Which of these standards is most important to you teaching context?
- 7. How much does the alignment of standards influence your selection of fieldtrip programs? Does this play a role in getting permission to take your class on field trips?
- 8. Please share your thoughts about the field trip logistics (booking, communications, transportation, transition between activities, lunch break, etc). What worked well, what suggestions do you have for improvement?
- 9. Is there anything else that you think Bishop Museum staff should keep in mind as they refine these programs?
- 10. The Bishop Museum is exploring the possibility of developing another fully integrated field trip program with supporting online curricula for Hawaiian Middle School students. This is the model we



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are using for I KA WÄ MA MUA KA WÄ MA HOPE, which presents STEM content through the lens of Pacific voyaging. Do you have any suggestions for additional topic areas that the Museum could address in an integrated field trip? We are especially interested in your thoughts in light of Common Core Standards and the new NGSS standard implementation.