Talking Story: Understanding Culture-Based Curricula

Cruz, J. D.¹
¹ University of Phoenix - Faculty

Corresponding email: jmedc82@gmail.com

ABSTRACT

The phenomenological study investigated the perceptions of teachers who implemented a culture-based curriculum at an elementary school on Oahu. Aloha ʻĀina is a culture-based curriculum with instruction and student learning grounded in the values, norms, knowledge, beliefs, practices, experiences, and language that are the foundation of the Hawaiian culture. Eight teachers were interviewed after they used the culture-based curriculum in their classrooms for one semester. Data analysis revealed four categories: teachers’ initial experiences, student engagement, challenges and opportunities, and meaningful experiences. Teachers were challenged by the culture-based education program and teachers’ perceptions of the Aloha ʻĀina curriculum were positive, most agreeing that it helped students to learn and improve student engagement through hands-on learning in and outside of the classroom.

Keywords: Aloha ʻĀina, culture-based curricula, place-based education

DOI: http://dx.doi.org/10.20961/ijpte.v3i1.25370
INTRODUCTION

The phenomenological study was designed to develop an understanding of the experiences and perceptions of Hawaii elementary school teachers who used the Aloha ‘Āina culture-based curriculum in their classrooms. A qualitative design presented a detailed view of the teachers’ perspectives as they implemented the curriculum during a period of one semester. In particular, the study used a phenomenological approach to understand and appreciate the lived experiences of the subject teachers. The study’s objective was to learn from the different experiences of these subjects to create better culture-based programs for the future.

The Aloha ‘Āina curriculum is a culture-based learning program that enables students to learn about the many aspects of their local Hawaiian community. Within the program, there are curriculum units that are mapped out for students in grades three to twelve that cover different environments and Hawaiian practices. Teachers in grades three to five who were using the wetlands, ahupua’a, and stream life units in their classrooms were interviewed.

The Aloha ‘Āina learning units enhance student learning with a culturally relevant curriculum to inspire them to embrace aloha ‘āina (love of the land) as a way of life. “This project fosters foundational learning experiences that reflect Native Hawaiian culture and core values” (Project Aloha ‘Āina, 2007, p. vii). The Aloha ‘Āina curriculum fosters place-based education strategies and integrates Hawaiian culture, terminology, and core values. The terms “place-based” and “culture-based” may be used interchangeably because culture-based teaching strategies and curriculum draw the physical, natural and cultural resources of communities to create rich contextual learning.

With the development of the No Child Left Behind Act (NCLB) of 2001 came the use of standardized tests measuring student achievement and the necessity for teachers to reach national standards (Smyth, 2008). As each year passes, the target student achievement scores increase, and there is a need for more children to pass the exam (McElroy, 2007). As many schools in Hawaii struggle to make these target scores which are needed to be in good standing, schools are struggling to find solutions to their current dilemma (Schools Directory, 2008).

As schools prepare their students to make these achievement tests, many schools try to find creative ways to help students do their best. However, schools are directly focused on preparing students to excel in reading and math, the two major components of the yearly test. Some of the challenges that schools face include the removal of many extracurricular activities that include recess, physical education programs, music programs, foreign language sessions, and even limiting science and social study periods to focus more on the testing subject areas of math, reading and writing (Smyth, 2008).

As educators across the nation prioritize resolutions due to NCLB, they resort to using basic texts and have followed scripted programs that allow for minimal hands-on student-centred activities (Smyth, 2008). Because these programs do not consider the needs of every learner, classroom teachers try to find ways to fill
the missing gaps in current programs to supplement ongoing classroom activities (McElroy, 2007).

Although a small number of schools in Hawaii have created new curricula for students and have reached state benchmarks and good standing, schools with higher Native Hawaiian populations have not met the state benchmarks. As a result, these schools have resorted to extending math, reading and writing sessions, leaving little time for anything else, including the use of creative teaching strategies. Much of the previous evaluation research relative to indigenous cultures, including the Hawaiian culture, have helped to evaluate the writing of new curricula and ways to improve them rather than relying on the stories that people have had while implementing them in their classroom. These stories are important to document as they are the most effective ways to improve current curricula those are being disseminated. Much of the previous evaluation research relative to indigenous cultures, including the Hawaiian culture, have helped to evaluate the writing of new curricula and ways to improve them rather than relying on the stories that people have had while implementing them in their classroom. This research will help organizations to best support front line teachers to continue the use of a curriculum and not feel discouraged when problems arise from its implementation. The research will help organizations to best support front line teachers to continue the use of a curriculum and not feel discouraged when problems arise from its implementation. The research is critical to the success of future programs as the teachers in Hawaii become more involved and become partners in the overall curriculum planning and evaluation process.

In the pilot project of Aloha ‘Āina, student achievement for students in grades three to twelve increased on the piloted Aloha ‘Āina pre/post unit tests (Pacific American Foundation, 2008). The grant was funded for a period of 5 years whereby teachers were trained on how to implement the curriculum and supported through both continued teacher training and evaluation studies. These units were aligned to the state content and performance standards that were addressed in the units of the study.

MATERIALS AND METHODS

“Talk story” in the context of Hawaii is a relaxed term for carrying out a casual conversation among friends. This term was used to allow participating teachers to freely share their ideas as if they were in a conversation with friends and were open to sharing their true feelings without the fear of being judged or critiqued by an evaluator. In doing so, it helped the participants to understand that I was there to support their experiences and not to judge them for their successes or failures with the curriculum unit.

The study used a phenomenological design to understand the perceptions of primary school teachers using a culture-based curriculum using an approach centred around “talking story”. Eight teachers were invited to be individually interviewed which encompassed all of the teachers who were currently implementing the Aloha ‘Āina curriculum at the school. To help provide a clear picture of their experiences two interviews were conducted: one interview during
the beginning of the implementation process, and one when teachers completed the curriculum units. A semi-structured interview guide was used for both interview processes. An initial focus group facilitated ideas and comments about the curriculum and helped to develop additional questions that were used to guide follow-up individual interviews. Also, the school’s accreditation plan and demographics were reviewed to help validate recurring patterns and themes that emerged from the interviews and to check if there was any evidence of outlying data. A major finding of this study was that this school had a strong philosophy of hands-on and place-based learning that was found imminent in their current curriculum and the Aloha ‘Āina curriculum fit perfectly to enhance the current curricula that were existing in their school. The Aloha ‘Āina curriculum helped them to add that cultural piece and had a lot of great activities that helped them to push their students a little more by offering them more hands-on activities and field experiences that made the learning more relevant.

One focus group interview and one individual interview were conducted with eight teachers at the beginning of their implementation of the Aloha ‘Āina curriculum. To help organize the data, each interview was recorded and transcribed word-for-word for analysis. After the interviews were completed, teachers were given the opportunity to review the transcriptions to make any changes, deletions or additions to their responses to clearly express their ideas. Each question and subsequent answers were carefully analyzed, and significant statements were clustered into emergent themes after repeated examination of the responses. After the final analysis was completed, the teachers reviewed the analysis for patterns and verification of the emerging themes. The themes and patterns to follow accurately expressed the feelings of the teachers at the particular site, which were derived from the original research questions.

The primary research questions addressed in the study are as follows:

1. What are the experiences of teachers who used the Aloha ‘Āina culture-based curriculum?
2. In what ways has using the Aloha ‘Āina culture-based curriculum been a meaningful experience?
3. What challenges and opportunities do teachers face in implementing the Aloha ‘Āina curriculum?
4. How do teachers measure student engagement in the classroom?

RESULTS AND DISCUSSION

The findings indicated that teachers were able to provide a curriculum that brought academic enrichment to their existing curricula. All of the teachers enjoyed having the curricula as a supplement to their current social studies and science curricula. With curricular demands that are placed on teachers in the State of Hawaii, the Aloha ‘Āina curriculum does not fully encompass a stand-alone curriculum that suits the needs of the school that they originally expected. Teachers at the school chose to use the Aloha ‘Āina curriculum as a supplement
to their ongoing efforts to help provide their students with the most meaningful learning experiences. Teachers used the activities and lessons within the curriculum to support their existing units that are used throughout the year. Teachers fit these activities and lessons into their curriculum as they saw fit.

In review, the school has been able to positively use the Aloha ‘Āina in the classrooms in which the curriculum is considered a good fit for the school because it aligns itself with the vision that the school has for student learning. Many teachers became more familiar with where they teach, had a renewed sense of vision and mission for the school and were clearer in their next steps in their collective school efforts toward their stated goals.

Teachers are at the forefront of educational strategies and can lead schools to create new systems that work for their students (Ackerman & Mackenzie, 2006). The different perspectives and perceptions of these teachers are critical in making decisions that will help to refine the current curricula and to inform stakeholders on how to increase student achievement. Culture-based educational strategies can provide students with a better hands-on experience than by using a textbook alone since most textbooks address one dominate the subject area. In most textbooks, each subject area is tailored to only meet the standards for that particular subject and does not generally find ways to integrate the standards of the other core subjects.

The teachers felt respected because they had a voice in how the curriculum could be improved; and felt that they could help their schools and other educators. As key stakeholders, teachers can feel that they have contributed to improvements not only in their own classrooms but also in their own schools and in the professional communities. These talk story sessions helped to open new gateways for effective communication with teachers so they felt more comfortable sharing their ideas in a relaxed setting.

The Aloha ‘Āina curriculum served as a catalyst for the teachers to further integrate different subject areas into their units to include art, math, social studies, science, and language arts. Through using these culture-based and hands-on strategies, teachers were able to integrate the reading, writing, math, social studies, and science standards within their unit to make the material is meaningful for the students that they teach. The teachers articulated that their experience with the program validated their feelings about the value of culture-based curricula and student engagement.

Teachers' overall impression was that the Aloha ‘Āina curricula was a great model for culture-based learning but needed more supplemental material on how the lessons were planned out, more background information, and more literature on the Hawaiian culture especially for first-time users, with no or little experience in using culture-based curricula in Hawai‘i.

The design of the overarching question, four subsequent questions, and a concluding question aided in the introduction of the general themes and allowed subjects to expand on their lived experiences as educated men and women. The researcher started the interviews with an explanation of the study followed by the overarching, subsequent, and concluding questions. The subjects started with
accounts of their lived experiences. The preceding sections include the identification of the themes followed by the questions and supported by a selection of narratives of the subjects in the study.

<table>
<thead>
<tr>
<th>Research Question</th>
<th>Theme/CATEGORY</th>
</tr>
</thead>
</table>
| What are the experiences of teachers who used the Aloha ‘Āina culture-based learning program? | Initial Experiences with Aloha ‘Āina  
• Comfort with Culture-based Curriculum  
• Initial Impressions of Culture-based Curriculum  
• Alignment with Current Curriculum  
• Heightened Awareness |
| How do teachers measure student engagement in the classroom?                     | Student Engagement  
• Teacher Definition of Student Engagement  
• Engagement Through the Senses  
• Impressions of Aloha ‘Āina and the Effects on Student Engagement |
| What challenges and opportunities do teachers face in implementing the Aloha ‘Āina curriculum? | Challenges and Opportunities with Aloha ‘Āina  
• Success with the Aloha ‘Āina curriculum  
• Challenges with the Aloha ‘Āina curriculum  
• Impact on Teachers  
• Need for More Training  
• Impact on Students  
• Pushing the Curriculum Further |
| In what ways has the Aloha ‘Āina culture-based curriculum been a meaningful experience? | Meaningful Experiences  
• Suggestions for Teachers Using the Curriculum for the First Time  
• Overall Impressions of the Curriculum  
• Teacher Feedback for Program Improvement  
• Improved Teacher Confidence |

More and varied types of culture-based curricula like the aforementioned are needed and it is apparent that schools are still able to find the rigor and relevance that the Hawaii Department of Education strives. If there were more types of culture-based curricula available for teachers to use, they could serve as models for curricula that could increase student engagement, teacher efficacy, and student enjoyment for learning. In addition to these hands-on project-based curricula can
help to better serve students in different economic statuses in order to help improve their demographic standing. With the requirement for alternative curricula, there is also a need for different and varied teaching strategies for students to achieve success. Through testimonies and phenomenological studies, these stories help to validate that successful experiences can be attained in using these kinds of curricula to help different kinds of learners succeed in the classroom and in life especially those who don’t have as many experiences afforded to them.

Despite these efforts, there is a need for more studies to measure and validate student success by using such programs. Culture-based curricula can provide students in Hawaii with a new style of learning that can provide tangible evidence of student success to raise the academic standards in public schools in Hawaii. If more schools adopt these programs, the improvements in student achievement, graduation rates, and professional development will become more apparent, and school administrators will be more willing to adopt these kinds of teaching strategies.

One of the limitations of the study was that culture-based education had not been widely used in the public school system in Hawaii. However, more research within a charter school context is forthcoming. Culture-based education has not been a strategy that the Hawaii Department of Education has looked toward initiating in their schools, and thus many schools have not adopted these strategies. With this problem, there were a limited number of schools that could be used to compare this study, and it may be difficult to generalize the findings of the study to other situations. Additionally, the study was limited to a small teacher population using culture-based education methods at one school on the island of Oahu. The study was limited in this context, and the researcher cannot make any generalizations to other professions or schools since the curriculum was only implemented within a limited time period of one quarter or nine weeks. The specific sampling of the study required that all teachers were certified to teach elementary-aged children and all teachers implemented the culture-based curriculum Aloha ‘Āina in their classrooms only. Another limitation of the study was that it focused only on one primary school. The Aloha ‘Āina curriculum is a third to tenth-grade curricula and all teachers in grades three to five were considered for the study. But, because the sample size was small, only ten teachers participated in the study, it was difficult to generalize the findings.

Through the use of the Aloha ‘Āina curriculum in the school, the teachers were able to offer their students new learning activities that were situated in a place that surrounded them. Students were able to learn from direct experience afforded through a geographic place where they were comfortable and familiar, and in turn, allowed students to make more real-world connections. Students were engaged in the learning process and brought their background knowledge to add to the conversations, which is often left out of the context of textbook learning. In doing so students were able to learn the importance of their community and the many ways to take care of it for future generations.
All of the teachers enjoyed using the Aloha ‘Āina curriculum and each teacher liked different aspects of the program. Furthermore, all of the teachers specified that they enjoyed the hands-on activities and/or the culminating field trip. Teacher number six put it simply:

I have to say that you know I believe strongly in taking kids out into the field and I don’t think that there is any substitute for that. So I agree with what’s been said already about it making the learning relevant and definitely a lot more engaging for the students, especially at this age because they really do love to be outside and explore the environment. (Focus Group Interview)

During the individual interviews, all teachers responded that the culminating field trip was a great way to integrate prior knowledge with the current Aloha ‘Āina lessons. Also, teachers felt that the field trip was very meaningful for the students to experience what they were learning about in the classroom. Teacher number four stated that his students had:

A much deeper appreciation of the things we see outside in nature. I know for a fact that when you take kids out in the field if they are not well prepared with the knowledge it just becomes another activity. But we see from giving them all of the background knowledge through the classroom activities that in the field they make connections that are relevant and show insight and some understanding of the culture and the environment. (Individual Interview #4)

The findings also indicated that teachers were able to provide academic enrichment to their existing curricula. All of the teachers enjoyed having the curricula as a supplement to their current social studies and science curricula. For this school, in particular, teachers have been using environmental education in the classrooms and have been planning their lessons for a number of years and have used the Aloha ‘Āina curriculum to help supplement ongoing efforts to help the students to learn. Aloha ‘Āina has also helped the school to consider integration models and has also increased the understanding of how to tie the Hawaiian culture into the teachers’ lessons, making them more culture-based.

Teachers’ overall impression was that the Aloha ‘Āina curricula was an excellent model for culture-based learning, but needed supplemental material such as lesson plans, more background information, and more literature on the Hawaiian culture. Some teachers felt adequately prepared while others already had experience using place-based curricula. Two of these experienced teachers served as mentors to new teachers. Through such mentorship, the teachers' ability to use the Aloha ‘Āina curricula and quickly implement it was simpler, since teachers were able to collaborate with those who had some experience with units, and were able to more adequately plan out their units. Teachers were able to offer students new learning activities based on hands-on and culture-based strategies.

SUMMARY
Teachers voiced their opinions of the Aloha ‘Āina curriculum as it related to their experiences toward implementation in the classrooms during the 2009-2010
academic school year. The themes were clustered into four categories that arose from the research questions. These areas included

1. The initial experiences that teachers had with the Aloha ‘Āina curriculum
2. Measurement of student engagement
3. Challenges and opportunities with the Aloha ‘Āina curriculum
4. Meaningful experiences that teachers had with Aloha ‘Āina.

The findings helped to better understand how teachers perceived the curriculum and served as a model for teachers to understand what worked well for them and what areas were challenging as they implemented the curriculum in their classrooms. Overall it appears that the teachers did enjoy the Aloha ‘Āina curriculum and felt that it helped make learning more enjoyable for their students. Additionally, the teachers felt that there were aspects of the curriculum that helped their students to be more engaged with the material which helped them to become more confident with the material in the classroom setting. Although the teachers enjoyed implementing the Aloha ‘Āina curriculum in their classrooms, many of them felt that the pre- and post-test assessments were very challenging for their students.

Furthermore, the teachers expressed the importance that learning a new curriculum puts extra stress on teachers and involves a steep learning curve along with the time constraints of a school day. Despite this, their impressions of the Aloha ‘Āina curriculum were very positive and they are looking at ways to best integrate these lesson plans into their ongoing efforts to provide their students' positive learning experiences.

CONCLUSION

The purpose of the qualitative phenomenological study was to explore the lived experiences of eight teachers who implemented the Aloha ‘Āina curriculum in their classrooms. The analysis represented the experiences of educated men and women. This section will summarize the findings discovered through the interviews with participating teachers as it related to the teachers’ initial experiences, teacher measurement of student engagement, challenges and opportunities with the curriculum, and the meaningful experiences teachers had with the curriculum.

The success of Culture-Based Education

In conclusion, culture-based educational strategies can provide students with different learning experiences, and also provide teachers with the improved curriculum. Through using teacher-created units in combination with the Aloha ‘Āina curriculum units, these culture-based and hands-on curricula allow students to learn in ways that best suit their individual needs. Interdisciplinary instruction does, however, require teachers to spend more time planning units for their students to reach the student state and national standards (Fullan, 2001). In most textbooks, each subject area is tailored to only meet the standards for that
particular subject and does not generally find ways to integrate the standards of the other core subjects.

For this school in particular, the Aloha ʻĀina curriculum served as a catalyst for the teachers to further integrate different subject areas into their units to include art, math, social studies, science, and language arts. Through using these culture-based and hands-on strategies teachers are able to integrate the reading, writing, math, social studies, and science standards within their unit to make the material is meaningful for their students. In addition, a critical component of culture-based education is its ability to get students out into the environment. Kanaʻiapuni, Malone, and Ishibashi (2005) state that by using these culture-based curricula they are able to emphasize a connection to their surroundings, increasing student understanding of their culture, where they are from, and the importance of taking care of the land. It was apparent that the curriculum became a part of the overall community, and the community became a part of the curriculum. This realization helped them to create new knowledge of self and encouraged a sense of social connectedness and ownership of actions within their local community.

Different and varied culture-based curricula increased student engagement, student motivation to learn, and teacher efficacy. Hands-on projects, fundamental to the place-based curricula better serve the student of different economic strata and could improve academic standings. This study served to validate that students of different abilities and skill levels can achieve success by using culture-based curricula.

Importance of Engagement for Students

Student engagement is said to be a good predictor of student achievement in the classroom (Klem & Connell, 2004). In stating this, student engagement in the classroom is an important aspect of student learning and will affect student achievement if students are not able to stay focused. A major component of student engagement stems from the interest level of students. Students who have a low sense of motivation for learning need to find not only the relevance of the learning but also needs to find enjoyment in the learning process (Tollefson, 2000). Students who are not able to find these successes in the classroom will find it very hard to remain engaged and will start to struggle with the classroom material (Klem & Connell, 2004).

One aspect of the culture-based curriculum is that it promotes hands-on activities with the material and moves students into an environment that most are comfortable with, their environment. As students begin to find success in their learning through increased participation and engagement, they learn the importance of engagement and how it can affect their performance in the classroom (Finn and Voelkl, 1993).

The Aloha ʻĀina curriculum allowed for further student discovery that could be explored independently. As students began to find more confidence in their abilities, they could find ways to make the learning their own and teachers found that the lessons can be student-oriented where they can be in control of what they learn next (Tollefson, 2000). As the learning escalated, new forms of student engagement increased whereby students are more engaged in other subject areas,
have more ownership of their learning, engage in more meaningful conversations with their peers, or are more motivated to learn. Through this engagement, a bond is formed between the student and their school (Finn and Voelkl, 1993). As students felt more accepted, they learned to find meaning between the school and home and they attained meaningful learning experiences. Through these experiences, students were then able to take more risks and thus will be able to build positive relationships with their teachers and peers. As these relationships grew, teachers were better able to academically challenge their students and immerse them in the rigor of their work. Once those foundational skills were set, teachers can then provide relevance to their student’s learning once there is evidence of greater effort on behalf of their students. Being able to connect their studies with their background, students could then transfer their knowledge to the broader world which will help to foster their overall growth as productive members of society.

Professional Development and Teacher Implementation

It is clear that the importance of teacher implementation is at the forefront of any curriculum implementation plan. Training programs on how to best implement any curricula is imperative (ACOL, 2003). Like any other curricula, teachers are the front line, and if it is not presented correctly, the true benefits of the curriculum to students will never be seen. With this need, it is important that all teachers know the curriculum well, and are well versed in the components that are critical to implementing it correctly. For this study, these components would include the Hawaiian culture, Hawaiian terminology, and the culture-based curriculum as a whole.

It is clear that a one, or two-day training session that includes experiential learning with lessons and community sites, is not sufficient training, especially for an instructional approach that is as complex as culture-based instruction. With a need for more training, it is imperative that organizations find ways to monitor the success of their program to ensure that the quality of implementation is held to the highest standards, especially if there are no trainers on site. Strategic plans need to reflect the new curriculum along with implementation and evaluation plans. More training and mentoring programs could help teachers become more familiar with the lesson plans, to better understand how the lessons are implemented, to be flexible in implementing culture-based lessons, and to adapt the curriculum to fit the needs of their individual students. This study serves as feedback from teachers to help improve the program, and also provides teacher practitioners with the opportunity to reflect on their teaching practices with the Aloha ‘Āina curriculum in their classroom.

This instructional planning becomes the primary tool for assessing student achievement, rather than deciding to merely use learning activities found within textbooks (Curriculum Implementation Book, 2005). It is important that teacher training is emphasized to make sure that teachers feel comfortable teaching the material and feel supported so they do not entirely dismiss the curriculum, especially if they are not comfortable with different components of presenting a culture-based program in their classrooms.
Through the interviews, the teachers also stressed a need for other teachers to understand that the Aloha ‘Āina curriculum is not a stand-alone program that will provide teachers with an all-inclusive unit. There is a need for teachers to understand that they are able to make it their own and to supplement it with ideas and lessons that are a part of the regular curriculum. In understanding this, new teachers to the curriculum need to understand that flexibility is necessary for implementing the Aloha ‘Āina curriculum and schools should continuously collaborate with one another to build on the foundation that the Aloha ‘Āina curriculum can offer.

**Sustainability of Research-Based Efforts**

The vision of Project Aloha ‘Āina is that everyone lives by the values of aloha ‘āina; whereby communities work together to achieve their vision of a healthy environment with the land and the sea. The word aloha means love, respect and honor and ‘āina means lands that nourish. Together they are the heart and soul of the Hawaiian culture. Through their units in grades three to five, students are given lessons that focus on Hawaiian values and the many aspects of their local environment (Project Aloha ‘Āina, 2007).

The teachers felt that the curriculum was effective in making students more aware of their surrounding environment and opened their eyes to the curriculum planning that lies ahead of them. The teachers shared that although the students were able to understand the concepts that are being taught, they themselves were still not proficient in understanding some of the place names, identifying plants and animals, and conducting stream investigations on their own. With this need, teachers felt that additional training sessions would be helpful in building on the areas that they feel inadequate in.

Despite this, the students were beginning to understand different ways to take care of their local communities and to make it a better place for everyone to live. Through the different lessons covered by the teachers, students were able to learn ways to take care of their wetlands, ahupua’a, and streams. In addition to this, the students began to understand that learning can take place beyond the classroom walls and that it should not always be restricted to the school. Although this is not reflective of all students, the lessons helped students to become more aware of their surroundings in a new capacity, and apply lessons learned to other subject areas.

In reflection, the teacher perceptions of the Aloha ‘Āina curriculum was positive and teachers felt that the curriculum met its goals and that the PAF built effective curriculum units that helped students to learn ways that they could work together. Snow, Burns, and Griffin (1998) contended that systematic follow-up is required for the sustainability of research-based content while many organizations are not able to provide these services due to a lack of funding. Improvements in curriculum might include partnering with local organizations so teachers can access natural geographic features, finding kupuna or community volunteers who are knowledgeable about the specific locale and language, and to continue to use researchers in the field who are willing to research as a part of their study program.
REFERENCE


