Life Stories in a Cultural Village Educational Exhibit

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Abstract

The Centre for Education and Research in Environmental Strategies (CERES) is located in Brunswick, Victoria, Australia. The staff at CERES wanted to further develop their Indonesian cultural village by connecting the cultural education program with their overarching theme of environmental sustainability. The goal of our project was to produce videos of personal narratives from individuals of Indonesian origin to enhance the cultural village exhibit at CERES. In order to achieve this goal, we conducted 22 in-depth interviews with Indonesians, and from the interviews, we discovered that flooding, industrialization, and water access were common environmental concerns among our interviewees. Videos on these topics were then produced with clips from the interviews. We recommend that CERES seamlessly integrates the videos with activities in the Indonesian cultural village to provide an immersive educational experience.

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Chapter 1. Introduction

The Centre for Education and Research in Environmental Strategies (CERES) is an educational, non-profit, community environment park located in Melbourne, Australia. Their mission is to "create environmentally beneficial, socially just, economically satisfying, culturally enriching and spiritually nurturing ways of living together" (CERES Community Environment Park, 2017). CERES strives to fulfil their mission by educating their visitors and app users about sustainable ways to improve their own communities.

The entrance to the site, shown below in Figure 1, leads to the four precincts of the park: social enterprise, farm, education, and village. All of the precincts are focused around the idea of environmental sustainability.

Figure 1. Entrance to CERES. Entering through the gate of CERES invites visitors to an environment unlike any other (CERES Community Environment Park, 2017).

The village precinct contributes to CERES's cultural education program and features information about four cultural groups: The Aboriginal and Torres Strait Islander, Indian, African, and Indonesian. All the villages are set up as models to educate visitors about cultures around the world. Within the model village sites, there are activities that provide visitors with an interactive educational experience that introduces them to the unique cultures and home life of people living in that area of the world.

As part of their effort to continuously improve the villages, the education staff at CERES would like to add environmental education components to each of the villages. To address this desire, previous student teams have created environmental themed activities for both the African

and Indonesian villages. The Indonesian village activities that were created are focused on critical environmental themes such as logging, mining, water access, farming, pollution, and climate change (CERES Community Environment Park, 2017).

A new initiative has focused on enhancing the visitor experience in the Indonesian village by adding the voices of Indonesian natives. In particular, the CERES education staff was interested in integrating personal narratives from Indonesians currently living in Australia and their relatives back home for additional information about daily life and the environment in Indonesia. The CERES education staff believed that the addition of personal stories in the Indonesian village would provide visitors with a better understanding of the Indonesian culture and aid in incorporating education on environmental issues into the Indonesian village.

The goal of our project was to produce videos of personal narratives from individuals of Indonesian origin to enhance the cultural village exhibit at CERES. The narratives are meant to echo and support the relevant themes presented in the activities within the exhibit. Our goal was achieved by completing the following objectives:

1. Conducting a baseline site assessment to understand the current education programs at CERES;
2. Identifying and evaluating best practices for designing an effective exhibit; and
3. Eliciting and recording authentic narratives from Indonesian community members which reflect the environmental issues they have experienced in Indonesia.

The research needed to address these objectives and to develop the videos was therefore "focused on gathering stories from people who have lived in these different parts of the world, including how their lives growing up were different from the lives they lead now in Australia" (personal communication, August 5, 2017). We expected that the development of these videos would enrich the cultural representation of Indonesia at CERES and improve the educational experience for visitors.

Chapter 2. Literature Review

In this chapter we begin by describing the evolution of CERES, from a landfill to the attractive park it is today. We identify key stakeholders and participants in the implementation of the project, from the visitors of the exhibit to those being interviewed. Next, to better understand our participants, we examine some social and environmental dimensions of Indonesia. Finally, we describe effective ways to interview, collect, and present narratives from others and provide case studies that highlight the findings.

2.1 Site Description of CERES

The Centre for Education and Research in Environmental Strategies (CERES) is a community environment park located on 4.5 hectares (11 acres) of land in East Brunswick, Melbourne (CERES Community Environment Park, 2017). Long before the establishment of CERES, the indigenous Australian Wurundjeri called this land their home. Nearby is the Merri Creek, which the Wurundjeri relied on for food, water, and their livelihood. Unfortunately, these first residents were forced off the land by Europeans during the Victorian gold rush in the 1850s (CERES Community Environment Park, 2017; Wells, 2015). The land was subsequently mined for bluestone and then ultimately turned into a landfill. What once was rich land quickly became polluted and barren as shown in Figure 2 below.

Figure 2. Before CERES. The image on the left shows how barren the land was in 1980. The image on the right shows the construction of CERES in 1982 before it opened (CERES Community Environment Park, 2017).

2.1.1 The Evolution of CERES

CERES was founded in late 1982 by local citizens who were dedicated to sharing environmentally sustainable ways of living, and this has allowed for the land to flourish once again. Today, CERES is a "community environment park," organized around precincts and focused on bringing communities closer together through education in economic, social, and environmental issues (CERES Community Environment Park, 2017). CERES' four precincts consist of farm, social enterprise, education, and village exhibits. A map of the park can be seen on the next page in Figure 3. Below, each precinct is briefly described.

The farm precinct focuses on growing organic and sustainable goods such as produce, flowers, and honey. These goods are brought to be sold at the organic grocery, Merri Table Cafe, or the community kitchen, which are all located in the social enterprise precinct. The operations and facilities in the social enterprise precinct provide financial support for CERES while helping the surrounding community. The education precinct includes a dam, an energy park, and an eco-house with energy saving features that provide the visitors with ideas about how they can change their lifestyle to be more eco-friendly and sustainable (CERES Community Environment Park, 2017). Through the many activities within the village precinct, children ages 5-16 learn to appreciate other cultures and become aware of global environmental sustainability (The Sustainability Hub, 2017).

Currently, the Indonesian village has activities on deforestation, climate change, rice fields, batik, and water pollution. There are also several composite stories, based on evidence and research, placed throughout the Indonesian village to bring life to the activities. The Indonesian cultural village is expanding with opportunities to share authentic stories of life back in Indonesia.

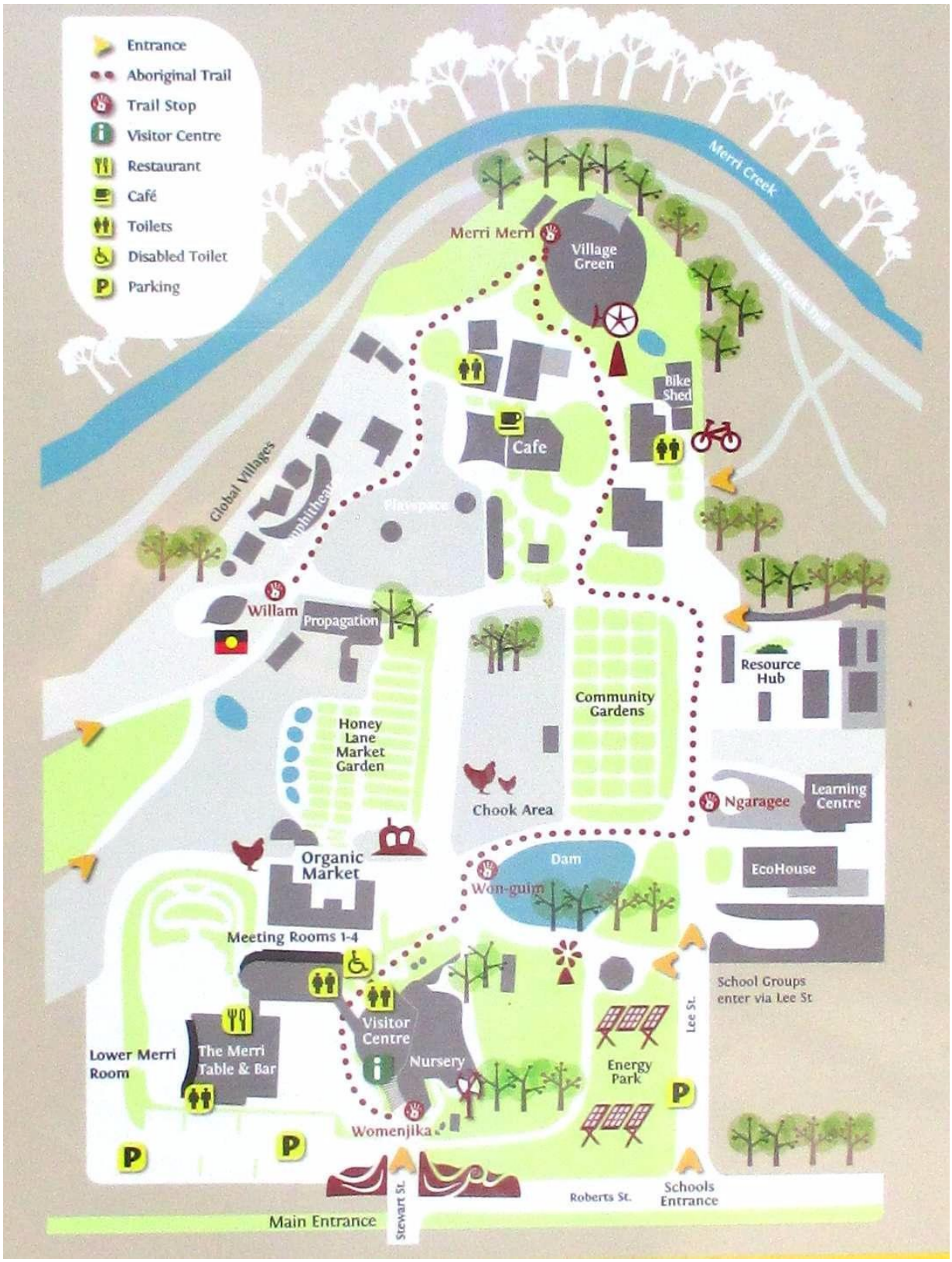

Figure 3. Map of CERES. CERES uses the land wisely to support its ideologies (CERES park entrance sign, 2017).

2.1.2 Stakeholder Profiles of the Indonesian Village

About 400,000 people, including students, parents, and teachers, visit the community environment park each year and are expected to have access to the Indonesian cultural village personal narratives (CERES Community Environment Park, 2017). Because the stories may be available on the CERES Chook app, over 500 app users will have the ability to view the stories (CERES, 2015). A goal of the CERES education staff is for the visitors of the park and the users of the CERES app to be impacted by these stories and learn how to improve their lives, better understand the impact they leave on the Earth, and become aware of how others live across the globe (CERES Community Environment Park, 2017).

Collecting the stories that accurately and appropriately represent the collective experience of groups of people involves sensitive engagement with stakeholders, as well as careful assessment of how their stories are presented and then understood by CERES' visitors. This project will engage with university students who come from Indonesia, as well as with their relatives who live in Indonesia, to generate stories that can be showcased in the cultural education village. Although these are simply the stories of individuals, together they portray the Indonesian community as a whole.

2.1.3 Staff Connection

The goal of the education staff at CERES is to interconnect Indonesia and Australia through the experiences offered at the cultural village. Our contacts at CERES were Shane French, the excursions area manager, and Subik Baso, the excursions cultural programs coordinator. Shane is from Australia and Subik is from Indonesia. Despite their different backgrounds, both share high expectations for the educational value of the exhibits and desire further growth for CERES. They believe that the creation of personal connections within the villages will help to immerse visitors into the culture and provide additional information for the visitors to learn from.

2.2 Opportunity for Education in Australia about Indonesia's Culture and Environment

In this section, we discuss the Indonesian population in Australia and expand on the environmental struggles that Indonesia is currently experiencing. The Indonesian community in Australia is the reason for CERES' desire to better educate others of the culture and help increase awareness of the environmental issues that Indonesia faces.

2.2.1 Indonesian Community in Australia

Australia is a popular choice for relocation as evidenced by its population growth from 14.6 million to 21.5 million between 1981 and 2011 (Hugo, 2013). In 2016, a census conducted by the Australian Bureau of Statistics found that 28.5% of Australians claim to be immigrants, while an additional 20% identify as the children of immigrants (Australian Bureau of Statistics, 2017). Based on these statistics, it can be noted that just under half of the population of Australia has a direct understanding of life as an immigrant, with more than 80,000 of the immigrant population in Australia coming from Indonesia (McAllister, 2016; Country profile - Indonesia, n.d.).

Australia also attracts overseas students and is a leading destination for education abroad (Weiss & Ford, 2011). Among the nearly 42,000 Indonesian students who have chosen to study abroad each year, more than 10,000 have chosen to study in Australia (Global flow of tertiary-level students, n.d.). At the university-level, 80% of international students identify as Asian, with 22% of these students coming from Southeast Asia specifically. As of 2009, Indonesia was the fifth largest provider of international students to Australia (Weiss & Ford, 2011).

2.2.2 Environmental Issues in Indonesia

This section will explore the different environmental struggles that people in Indonesia face, including water access, flooding, industrialization, peatland degradation, palm oil production, and mining.

Water Access

For many Indonesian community members, life in urban Australia is quite different from life in their respective Indonesian communities. Jakarta, the capital of Indonesia, is known to have some of the most limited access to water supply in all of Asia. Based on official estimates, approximately 46-56% of households have functional water supply access, but this number is believed to be an overestimation. It is expected that of the complete population of the city, only 25% have direct access to potable water (Bakker, Kooy, Shofiani, & Martijn, 2008). This issue extends beyond Jakarta, affecting the entire country. In 2008, it was determined that only about 20% of the Indonesian population had clean water access supplied by the 306 regional drinking water companies (Peniwati & Brenner, 2008).

Droughts have a significant impact on the Indonesian efforts to provide access to potable water. A survey of the 2015 drought, conducted in eight major districts, determined that 39% of households had to switch water sources during the drought. Specifically, in the districts of Timor Tengah Selatan, Sumba Tengah, and Lombok Utara, over 50% of households surveyed responded that they had to change water sources. Unfortunately, in the district of Timor Tengah Selatan it was found that 13% of the households moved to a source of water with lower quality (The Impact of Drought, 2016).

The dangers that these lower quality water sources present are evident in a case study on the 1997 drought. This study examines the effects that the drought had on the villagers of Holuwon, West Papua. During the year of 1997, the only way in which the villagers could obtain potable water was through the endurance of traveling an hour round-trip to a distant water source. All four streams that the village had previously relied on for water had dried up in November, the seventh month of the drought. Although the nearby Pusaheik River contained water, it also failed to provide the villagers with potable water as it had become still. Without easy access to clean drinking water, 672 villagers died during the 1997 drought as they had become desperate for water and susceptible to the diseases that were living in the only water sources available (Boissière, 2002; Statistic Brain, 2017).

Flooding

Indonesia experiences two seasons: wet and dry. The wet season typically occurs from September to March, with the rest of the year being the dry season. The temperature remains

relatively constant throughout the seasons, but the amount of rain drastically increases during the wet season (Hays, 2015). While the annual rainfall in Indonesia is about 200 centimeters (79 inches), nearly all of this rainfall occurs during the seven months due to monsoons (Indonesia, n.d.). The challenge with the wet season is that the rain tends to fall over a short period of time resulting in flooding. For example, in January of 2013, a flood destroyed 98,000 homes reaching 124 villages in Jakarta (Wijayanti, Zhu, Hellegers, Budiyono, & Ierland, 2017). Destructive storms like this one can drop upwards of 71 centimeters (28 inches) of rain and remains a long term environmental concern for Indonesia (Flood, 2017).

Industrialization

In Indonesia, areas that were once filled with the greenery of fields and farming have been impacted by industrialization and the establishment of larger businesses. Indonesia's focus in supporting itself agriculturally has shifted towards an interest of importing crops as it moves towards more industrialization (Elmhirst, 2001). "Thousands of small farmers have been evicted from the fields they have cultivated for generations, because local or national authorities are giving concessions to large companies to exploit the land" (Indonesian farmers, 2012). The land titles that many of these local farmers hold are generally unclear with an estimated 60% at risk of losing their land to larger companies (Indonesian farmers, 2012).

Peatlands

The flooding from Indonesia's wet season contributes to the formation of peatlands. As the vegetation within the country continues to grow in this tropical climate, the waterlogged soil forms into biogenic deposits that are known as peatlands. These deposits consist of the partially decayed vegetation of the land and are oftentimes between 2 to 12 meters deep (Formation and Types, 2011). The deepest peatlands of Indonesia have formed in areas where the temperatures have struck a perfect balance that encourages the continuous growth of plant life and hinders the microbial breakdown of the vegetation (What is peat?, n.d.).

As Indonesia continues to grow, many of the peatlands are being cleared in exchange for the development of larger businesses. Unfortunately, an estimated two trillion tons of carbon dioxide are stored in the peat, and when the land is burned for clearing, the stored carbon dioxide is released into the atmosphere. It has been calculated that Indonesian peatlands produce nearly two billion tons of carbon emissions annually. The loss of peatlands alone has caused Indonesia

to shift from the 21st to the 3rd largest emitter of greenhouse gases in the world, following the United States of America and China (S, L., n.d.). If this deforestation continues, Indonesia is expected to contribute to 26% of the total carbon emissions by the year 2020 (Carlson et al., 2012).

Palm Oil

Palm oil is a type of vegetable oil that is produced from the fruit of the *Elaeis guineensis*, an oil palm tree. About 30% of the vegetable oil produced in the world is from palm oil. Although palm oil is found in many products ranging from cosmetics to food, its production has negative effects on animals and the environment. Consumers are unaware of the use of palm oil in many of the goods that they purchase because it can be categorized in over 170 different ways (Palm Oil, 2017). In 2016, 35 million tons of palm oil were produced in Indonesia, making Indonesia the largest producer of palm oil. To continue being the top producer, Indonesia has the goal of producing 42 million tons of palm oil in 2020 (Jakarta Post, 2017).

The cultivation of palm oil has been a major factor in deforestation, causing 40% of the peatland loss (Carlson et al., 2012). Southeast Asia's forests have endured a 1% yearly decline, and forests with peat swamps in particular have experienced the highest rate in decline at 2.2% per year (Miettinen, Shi, & Liew, 2011). Between 2000 and 2012, Indonesia surpassed Brazil's previous record for rainforest degradation as it had been found that over six million hectares of land had been cleared over this 12-year period (Margono, Potapov, Turubanova, Stolle, & Hansen, 2014).

Clearing land for palm oil has also put about a third of Indonesian mammal species in critical risk of becoming extinct. In particular, the orangutan of Borneo and Sumatra has lost 90% of its habitat and 50,000 have died from 1997 to 2017. Not only is the habitat destroyed, but up to an estimated 5,000 orangutans are killed each year due to the clearing of the land. At this rate, it is estimated that the orangutans will become extinct within a decade. Many other animals are affected by the production of palm oil and the clearing of the land now makes these animals more susceptible to poachers (Palm Oil, 2017).

This land degradation also contributes to climate change. Timber forest undergrowth is burned to make room for palm oil, resulting in emission of smoke and carbon dioxide into the atmosphere (Palm Oil, 2017). Between 2000 and 2010, development of government granted

land for palm oil production caused an estimated 9.4% of Indonesia's greenhouse gas emissions. In 2014, land changes due to palm oil production and forestry accounted for 67.9% of Indonesia's greenhouse gas emissions (Busch, J. et al., 2015; CAIT., 2014). The clearing of forests has also lead to land erosion and river pollution (Palm Oil, 2017).

Approximately 10 million Indonesians rely on the forests for their survival. Palm oil production provides jobs, with the consequence of forcing families from their usual ways of living. The people have little choice but to give up their land and work for the palm oil plantations that benefit the government. The tasks of palm oil production has resulted in the violation of workers' rights and harsh child labor conditions (Palm Oil, 2017). Palm oil production negatively affects the animals, workers, and the environment.

Mining

In Indonesia, there is controversy surrounding the nation's mining industry. "Since the early 2000s, company – community conflicts have increased in frequency and magnitude, affecting the development of Indonesia's mining sector and ultimately its overall economic performance" (Devi & Prayogo, 2013). About 5% of Indonesia's Gross Domestic Product comes from mining, which also provides "a much greater share within the regional economies of some resource-rich provinces such as West Papua, East Kalimantan and West Nusa Tenggara" (Devi & Prayogo, 2013). The minerals that are found in Indonesia include coal, tin, copper, nickel and gold. For many people, mining is a way for them to make a living and support their families. "Many mining locations in Indonesia are remote with few prospects for economic development and mining-related businesses provide some of the only paid employment opportunities for local communities. These locations are also often of significant biological and environmental value, such as small islands and tropical rainforests" (Devi & Prayogo, 2013). This illustrates the ongoing conflict between the mining industry and environmental protection. Two visible environmental effects of mining are deforestation to make space for mining and pollution of rivers and rice fields from the wastes produced during the mining process. Wastewater from the mines is often acidic and causes harm to nearby farming lands and waterways (Ives, 2017).

Mining has also affected the health of employees working in the industry, specifically for those who have been involved in coal or gold mining. Coal plants have been estimated by Greenpeace and Harvard University to cause at least 6,500 premature deaths each year. This

estimate could increase as much as four times if the government decides to complete their plans to open 117 more coal power plants by 2042 (Ives, 2017: Schneider, 2017).

In gold mining, the danger for workers and other people in the surrounding areas is from mercury, used in the gold extraction process (Basri, Sakakibara, & Sera, 2017). The number of people involved in small-scale gold mining in Indonesia has been estimated to be as high as 250,000; however, "all estimates are low as a result of the quasi-legal status of small-scale gold mining and the associated deficiency of data on the sector" (Peluso, 2018). Due to these environmental and health concerns, mining has become an increasing concern and the government has recently passed legislation that contains stricter mining regulations and policies (Devi & Prayogo, 2013).

2.3 Recording and Sharing Personal Narratives

Recording personal narratives and sharing them with the visitors of the CERES cultural villages can help to spread awareness of the variety of cultures and personalities that exist within the human race. This section will discuss the critical interaction between an interviewer and the participants throughout the interview process. When recording personal narratives there are many skills and techniques to increase the quality and comfortability of an interview.

2.3.1 Awareness of the Participants

Participants all have their own individual reasons for contributing to the narrative collection and should be respected as they have agreed to share a part of their lives with the interviewer. To conduct an interview respectfully, it is important to evaluate each question in advance, especially ones that may ask for sensitive information (Perecman & Curran, 2006). Negative reactions to sensitive questions or the refusal to answer them are common occurrences as a different culture may view topics from other angles. In these cases, the wording of a question can be critical to avoid conflicts and misunderstandings.

Before the questioning and storytelling begins, it is necessary to gain consent from the interviewee. Gaining informed consent involves discussion of the intentions of the interview, but not necessarily further expansion on why the questions are important. By doing so, the interviewee will feel more comfortable. A second aspect of informed consent concerns confidentiality expectations. For example, every participant should be asked if they want their

name and town to be connected to the research (Berg & Lune, 2012). Expressing confidentiality before an interview is necessary for respectful treatment of the participants. It is important for the interviewee to understand that it is ultimately their decision on whether or not we can share the information they have provided.

When gaining informed consent, it is important to establish rapport and clarity before jumping into the topics of discussion—as Berg and Lune say, "Never begin an interview cold" (Berg & Lune, 2012 p. 150). Rapport is generally defined as friendliness, respect, trust, and an understanding of the research goals. It is essential to build rapport before going in-depth as this allows the interviewee to become comfortable with talking, so that they will elaborate when asked sensitive questions later in the interview (DiCicco-Bloom & Crabtree, 2006). To encourage an open relationship, it is acceptable during the first few minutes to include remarks that are unrelated to the research topic to establish a common ground within the research (Berg & Lune, 2012; Goode & Hatt, 1952). Obtaining the most impactful stories from the interview truly relies on the rapport that is established. An interview can be thought of as a form of conversation that is friendly while maintaining a professional countenance.

In addition, one must determine any barriers that may negatively affect the interview relationship or cause the interviewee to provide less elaborate answers. It is important to consider the limits that accompany the use of different interview methods, such as evaluating the tension created when an individual has a camera in front of them. The most critical barrier to avoid is the one created when the interviewer makes a comment that judges the interviewee. The interviewer is not there to educate or judge, but rather to listen, record, and understand the respondent (Berg & Lune, 2012; Goode & Hatt, 1952). Although many barriers are unpredictable, it is important to prepare and explore what obstacles might occur during an interview and how to handle each individual situation.

2.3.2 Gathering In-Depth Information

Although the specific format that an interview follows can vary, the phrasing of topics and questions is important in every interview. All questions should be asked in an open-ended format to allow the interviewee to explain their reasoning rather than simply answering with "yes" or "no." Failing to follow this format could potentially cause the interviewee to feel like there was a right or wrong answer to the question asked (Goode & Hatt, 1952). Also, a question

should not appear to be negative or leading. For instance, prompting with “Can you tell me more about this?” instead of asking “Why?” may be received more positively and elicit a better response. Asking about two subjects in one question should also be avoided during an interview because the interviewee may be confused on what the interviewer is looking for in a response. Similarly, asking complex questions makes it difficult for the interviewee to respond (Berg & Lune, 2012). Simple phrasing can gather the intended information with minimal confusion. Each known question must be tested with another researcher before being taken to the field, as the phrasing and order of the questions can change the information gathered in an interview.

Another technique which can be implemented is the use of silence when the interviewee has not given a clear or detailed response. This silence gives the respondent time to think and places light pressure on them to respond with more information. Although this technique is useful, it is also important not to leave the conversation silent for too long; Lune and Berg recommend remaining silent for around 45 seconds maximum. With this in mind, adequate time to answer should be allotted before moving onto another question or beginning to ask probing questions, as people have different response times and speech patterns. In addition to this skill, echoing also allows the interviewer to show the respondent that they are listening without stating an opinion or focusing the conversation on the interviewer (Berg & Lune, 2012). If the interviewee asks the interviewer for an opinion, the interviewer should attempt to direct the attention back to the respondent, playing down the question with a casual comment such as “Your opinions are more important than mine” (Goode & Hatt, 1952 p. 198). Following these techniques will help avoid bias and increase the depth of responses.

2.3.3 Interview Styles and Their Uses

Interviews are generally split into three categories: unstandardized, standardized, and semi-standardized (Berg & Lune, 2012). Unstandardized interviews can be thought of as a guided conversation and are often found in ethnographic, observation focused studies where the interviewer comes with a set of topics rather than questions. In comparison, standardized interviews are formed with a specific set of questions that have been designed to minimize misinterpretation, further allowing the interviewer to gather quantitative data. Semi-standardized interviews generally gather qualitative information like unstandardized interviews; however, the interview begins with only five or six broad questions which evolve throughout the interview

into more in-depth inquiries as they seek supplementary information (Berg & Lune, 2012; DiCicco-Bloom & Crabtree, 2006). These categories each have their place in research depending on the information the interviewer is gathering and the quantity required.

The interview is not only characterized by the question types, but also by the number of individuals being interviewed. Focus groups and individual interviews each have a specific purpose for research. Focus groups allow the interviewer to take a less dominating role, giving the respondents opportunities to answer within areas they deem most important. The participants are then able to react and relate to each other, creating a more comprehensive perspective. In contrast, individual interviews allow a single participant to respond on a more personal level, without the influences of other people. Unlike focus groups, where the individual must trust in the group, the interviewee only has to trust in the confidentiality of the interviewer and other researchers involved (Krueger, 1994). Different interview styles have a large impact on the information gathered and can complement or interfere with the research. It is important to understand these different styles and apply the one that will be the most effective.

2.3.4 Unbiased Narratives

The interviewer and the interviewee may have different perspectives, but the interviewer must accept this in order to accurately capture the story that the interviewee is sharing. Unbiased narratives can "engage people at every level – not just in their minds but in their emotions, values and imaginations" (Hodges, 2014). Individuals that can closely communicate topics about how they perceive the world, while avoiding attempts to gain the favor of the audience, are often able to encourage the most overwhelming response from the listener. Although some listeners may disagree with different aspects of the topics covered within the narrative, the authenticity of it will allow them to face many realities as they place themselves within the storyline (Hodges, 2014). This allows empathy to develop between storyteller and listener (Clark, 2014).

The interviewer should pay attention to the risk of misinterpretation and must be careful to depict the participants' responses in a way that respects them (Knowles & Cole, 2008). Collected narratives should be presented in an unbiased format to show the whole picture and garner the most attention. One way this has been done is by allowing respondents to record their own thoughts and then present the thoughts as they have been delivered to the researcher. This also avoids the issue with mainstream media only telling the part of the story that matches what

they want the public to view (Holmes, 2017). An unbiased representation of individual's stories, depicted in a way that respects the respondent, can have the greatest social impact.

2.4 Case Studies in Oral History

The cases discussed below provide further insight on conducting an oral history project. Oral history utilizes personal narratives to present information (Oral History: Defined, 2017). These projects focus on the importance of stories in learning about history. Valuable lessons were taken from the following examples and were applied to the project.

2.4.1 Sharing the History of Lesbian and Gay Community Members in Australia

A project entitled "Australian Lesbian and Gay Life Stories: A National Oral History Project" (Reynolds & Robinson, 2016) told the history of social challenges that Australian lesbian and gay community members have endured. Sixty participants were interviewed and their stories were compiled and analyzed to explore the history of homosexuality in Australia. The narratives collected illustrate the dramatic increase in social acceptance and support for LGBT rights in Australia since 1968 (Reynolds & Robinson, 2016). One challenge that the researchers evaluated for this project was the public access of these interviews. To solve this problem, they compiled all of the interviews online. The accessibility was valuable in this study because it allowed the impactful messages and stories to be shared amongst a large population in Australia. While easy accessibility is important, the project also highlights how accessibility introduces the concern of ethical approval. The participants in this study, and any other project with human involvement, need to be treated with respect. In this study, it is noted that "recruitment and interviewing were conducted with particular sensitivity" (Reynolds & Robinson, 2016). This involved permission and consent forms that were signed by every participant, and gave each individual the ability to decide their interview's level of confidentiality. The respect shown in this study was also vital to its success.

Interviewers in this study asked open-ended questions during the interview process to enable the participants to formulate their own thoughts and expand upon them. With minimal direction and control, this technique allowed the researchers to uncover authentic personal narratives. In an oral history project, it is important to let the participants do most of the talking,

and introduce as little bias as possible. It would be harmful to the study to lead participants into sharing thoughts that they may not have come up with on their own.

A secondary goal from this project was to "offer participants an affirming opportunity to outline their own histories in a way that was meaningful to them" (Reynolds & Robinson, 2016). Many of the participants in this study provided a personal reflection after their interview and gave positive feedback on their experience. The positive response seen in this study demonstrates the power that personal narratives can have, not only on the people who hear the stories, but also on the ones who share them (Reynolds & Robinson, 2016).

2.4.2 StoryCorps

StoryCorps is an organization that was founded "to preserve and share humanity's stories in order to build connections between people and create a more just and compassionate world" (About StoryCorps, 2017). It originally started in 2003 as a single storybooth located at Grand Central Terminal in New York City as shown in Figure 4 below.

Figure 4. StoryCorps Storybooth. Located in Grand Central Terminal, New York City, New York (About StoryCorps, 2017).

Now, StoryCorps has evolved to include four stationary storybooths, one mobile storybooth, a mobile application, a website, and an archive at the Library of Congress. The mobile storybooth was created from an airstream trailer and is taken to different locations in the United States to give everyone the opportunity to share their story. The archive at the Library of

Congress is a collection of more than 65,000 interview recordings. The mobile application of StoryCorps makes it easy for anyone to record an interview and share their story. The organization has also utilized multiple forms of media to present the stories including podcasts, books, videos, and animated shorts (About StoryCorps, 2017). StoryCorps is a quintessential example of an oral history archive. One main lesson from StoryCorps is to explore different ways to present personal narratives to find the most effective solution. Finding the best method is essential in conveying a meaningful message.

2.4.3 Humans of New York

Humans of New York (HONY) is an oral history project that was started by Brandon Stanton in 2010. His original goal was to "photograph 10,000 New Yorkers on the street, and create an exhaustive catalog of the city's inhabitants" (About Humans of New York, 2017). In addition to all of the photographs, Stanton decided to interview the people as well. This interview process allowed Stanton to capture the stories and inspirational messages of the people in New York. He was then able to caption each photograph with a quote from the interview, which provided a story behind each picture and each individual. Stanton's photography project transformed into a blog, and then quickly received popularity on social media. People showed interest in learning about others' stories and loved the messages that Stanton was able to uncover.

Now, HONY has captured the stories of people from over twenty countries worldwide, and just recently started a video series to further expand the project. The video series can be found on their Facebook page, which releases episodes that focus on different themes such as time, home, and relationships. Each episode is a compilation of interviews that all relate to the same theme and combine to deliver a powerful message. HONY has conducted about 1,200 interviews over four years of filming, and the video series was the perfect way to showcase the stories that they found. In addition, Stanton has published two books showcasing his work: "Humans of New York" and "Humans of New York: Stories". Both of these books are New York Times' best sellers and do an exceptional job of capturing the stories of humanity (About Humans of New York, 2017). The story-telling capabilities illustrated in this project are remarkable. HONY is an intriguing, inspiring, and powerful, oral history project that has been able to successfully capture and share the stories from people all over the world.

2.5 Summary

Through a review of the literature, it is evident that the creation of open ended questions and effective means of storytelling are essential to the successful integration of narratives in the Indonesian village at CERES. When determining how to best represent these stories, we explored a variety of media sources to determine which would have the most powerful impact. Subsequently, we incorporated many of the methods and best practices described above into our methods (§3, below).

Chapter 3. Methodology

The overall goal of our project was to produce videos of personal narratives from individuals of Indonesian origin that enhance the cultural village exhibit at CERES. The CERES education staff wanted the personal narratives to enhance the visitor experience and provide a better understanding of the cultures. To accomplish our goal, we identified three objectives:

1. Conduct a baseline site assessment to understand the current education programs at CERES.
2. Identify and evaluate best practices for designing effective exhibits.
3. Elicit and record authentic narratives from Indonesian community members which reflect the environmental issues they have experienced in Indonesia.

An array of strategies, including participant observation, surveys, interviews, roundtable discussions, and documentation, were used to complete each objective.

3.1 Conduct a Baseline Site Assessment to Understand the Current Education Program at CERES

It was important that we understood the layout of the activities in the CERES cultural village exhibits before we could add the personal narratives to them. In order to develop this understanding, we performed a site assessment of the Indonesian village as if we were visitors. Doing a complete participant observation, where the researcher acts as the subject, allowed us to establish a baseline for our research (M. DeWalt & R. DeWalt, 2011). We also watched school group programs in the Indonesian village to see the current activities that are used. In determining the site's baseline effect, we also interviewed our CERES sponsors, Shane French and Subik Baso, to further understand their expectations and opinions of the Indonesian village. Their expectations and opinions lead the discussion for our interviews. We related the personal narratives to the topics of the activities, such as water access, mining, palm oil, and rice fields.

3.2 Identify and Evaluate Best Practices for Designing an Effective Exhibit

To understand the best practices for integrating personal narratives, we continued to look at examples from HONY and StoryCorps as well as visit other exhibits at the Melbourne Zoo and Museums Victoria. We explored the exhibits through participant observation to gain first-hand experience interacting with the activities and information.

We used a semi-structured approach to interview the Museum Victoria and Victoria Zoo curators, whom Shane French and Subik Baso recommended, to obtain advice on how to best design an effective exhibit (Appendix A). During the interviews, we used snowball sampling to identify additional experts in exhibit design (Berg & Lune, 2012; DiCicco-Bloom & Crabtree, 2006).

In addition to gaining knowledge from curators, we spoke with Tian and Subik who are Indonesian cultural teachers at CERES. Conducting semi-structured interviews with these individuals gave us a better sense of the culture and how to best represent our Indonesian interviewees (Appendix B).

3.3 Elicit and Record Authentic Narratives from Indonesian Community Members Which Reflect the Environmental Issues They Have Experienced in Indonesia

The methods we used to elicit narratives were individual interviews and roundtable discussions (Appendices C and D). Notes were taken for both the roundtable discussions and interviews, but in order to keep the discussions comfortable, only the interviews were videotaped, audio recorded, and photographed. Roundtable discussions were beneficial for this objective because the individual respondents were able to react to the other participants, creating new perspectives from the influences of others' stories and thoughts (Krueger, 1994). Our participants included Indonesian students from universities in Melbourne whom we gathered by snowball sampling.

Following the roundtable discussions, individual interviews were also conducted to obtain more in-depth narratives from each of the participants. This eliminated the influence of others by providing a private environment (Krueger, 1994). The individual interviews were semi-structured with some open-ended questions to initiate the discussion with the participant. We used the same prompts with each interviewee to generate a series of responses that allowed us to compare experiences. The roles of the interviewer were to gain trust, keep the conversation going, and allow the participant to express their own recollection of their previous lifestyle.

Before each interview, a confidentiality form was given to the participant to read, note what they are comfortable with, and sign for our records (Appendix E). Finally, we consulted our

interviewees and showed them our work in order to ensure that the cultures focused on were represented correctly and that the appropriate tone was reflected.

To gain further information on environmental changes in Indonesia we reached out to relatives and friends of our interviewees who live in Indonesia. These participants helped to broaden the demographic and provided us with more information on changes in water access, mining, and climate change. We were also able to gather pictures of the current state of some of these issues.

Chapter 4. Results

This section will discuss the accomplishments that were achieved by following our three objectives as well as discuss the impact of those accomplishments on the final product produced.

4.1 Educational Observations and Indonesian Village Baseline Assessment

As an introduction to the teaching methods practiced at CERES, we observed instructors from the CERES education department teach a class on energy sustainability within the eco-house. We watched as instructors engaged with the students and spoke of energy conservation methods. The class began by prompting the students to fill in a pie chart related to energy usage in Australian homes. The students gave suggestions for the different section labels in the pie chart, such as home appliances, heating and cooling, and standby. This lesson motivated students to think critically about what household commodities in their lives consume the most energy. The students then travelled throughout the room, filling out worksheets and playing with model home demonstrations. Concepts the students were taught included how to save energy on heating and cooling with better insulation and how different types of lightbulbs can consume varying amounts of energy. After filling out the worksheets in small groups, the students were brought back together to discuss what they had learned and how they could incorporate more conscientious energy usage into their own home. During this class, we observed and recorded that the instructors prefer using interactive teaching methods to engage the young students in the material.

After gaining an understanding of the CERES staff's engagement oriented teaching methods, we needed to observe how the cultural school programs at CERES were conducted. We began with the African program by examining how the instructor, Watiri, engages the students. She started the lesson with a short lecture about introductory knowledge on where she grew up in Kenya, Africa and continued to help instill the lessons of house building with the use of activities. In the first activity, the children enthusiastically stomped in mud to make bricks similar to how Watiri's community does in Kenya. Afterwards, she gathered students together to work as a team to build a circular house with bamboo. This helped the students to better understand the creation of her community's uniquely shaped circular houses and fostered cultural appreciation for life in a Kenyan village.

Next, we examined the structure of the Indonesian village educational program. The class we observed followed a format similar to the African village class where students were lectured and then encouraged to participate in interactive activities. The topics of discussion in the Indonesian village were planting and cultivation of rice, the design of pictures using the batik wax removal process, and the role of prayer in the religious life of Muslims. Following the discussion, we watched the students till soil, pound rice to husk it, carry pots of water on their head, create their own batik, as shown below in Figure 5, and practice traditional Indonesian prayer.

Figure 5. Batik. The students created their own batik out of wax and colored dyes.

When we first started working on our project goals and objectives, we thought that the educational activities would be permanently set up for visitors to participate in as they passed through the park. Upon observing these classes and the layout of the community park, it was discovered that the activities were primarily set up for the school groups that travelled to CERES, and the way the activities were chosen was dependent upon the lesson topics that the students were currently focused on in school. At the end of each lesson the activities were then cleaned up and stored to prevent damage.

4.2 Best Practices for Effective Exhibit Design

In order to complete this project, it was essential to examine best practices for effective exhibit design and evaluate the use of smartphone applications at exhibits. We visited the Melbourne Zoo and discussed techniques of exhibit design with Cyrelle Field, the Learning Programs Coordinator for Zoos Victoria. The motto of exhibit design that they follow is to "connect, understand, and act" (personal communication, 2017). The visitors must connect with the animal, understand the struggle that the animal is facing, and then act in a way that will be beneficial to the animal. This mission was well demonstrated in the orangutan exhibit, which had an interactive activity that focused on the issue of palm oil production. An artificial grocery store was implemented within the exhibit that examined which common products contained palm oil, shown below in Figure 6. After visitors learned about the harmful effects of palm oil production on the orangutan's habitat, they were asked to pledge to never purchase products with palm oil in them.

Figure 6. Palm Oil Campaign. A look at the palm oil grocery store display at the Melbourne Zoo, strategically positioned next to the orangutan exhibit (Korn, 2017).

At the Melbourne Museum, we met with Carolyn Meehan who is the audience insights manager. With her, we discussed how to engage visitors of all ages in the use of mobile applications at exhibits. Carolyn mentioned that she found that Melbourne Museum visitors prefer to use their own devices and are reluctant to download apps. In the past, the staff at the Melbourne Museum has tried to encourage visitors to download and use their apps in several ways. One successful strategy rewarded the visitor when using the app and another involved having staff members personally ask visitors to download the app before entering the exhibit. Carolyn also noted that providing links to the app and museum YouTube channel on every Public Relations document and website offers the best chance for visitors to access the videos. Because the target audience of the Indonesian village is primary school children, Carolyn suggested that CERES also advertise the app to the children, so that parents feel obligated to download the app that their child desires.

4.3 Record and Document Indonesian Narratives

In total, we interviewed 19 Indonesians in Melbourne and had two interviewees reach out to friends and family members, creating a total of 22 participants. The conversations with the interviewees were primarily focused on environmental issues relating to water access, industrialization, flooding, and mining. We were able to find at least one participant from each of the five main Indonesian Islands: Sumatra, Java, Kalimantan, Sulawesi, and Papua. Figure 7, below, depicts where each interviewee is from on a map. Table 1, on the next page, shows the frequency of environmental concerns among the interviewees.

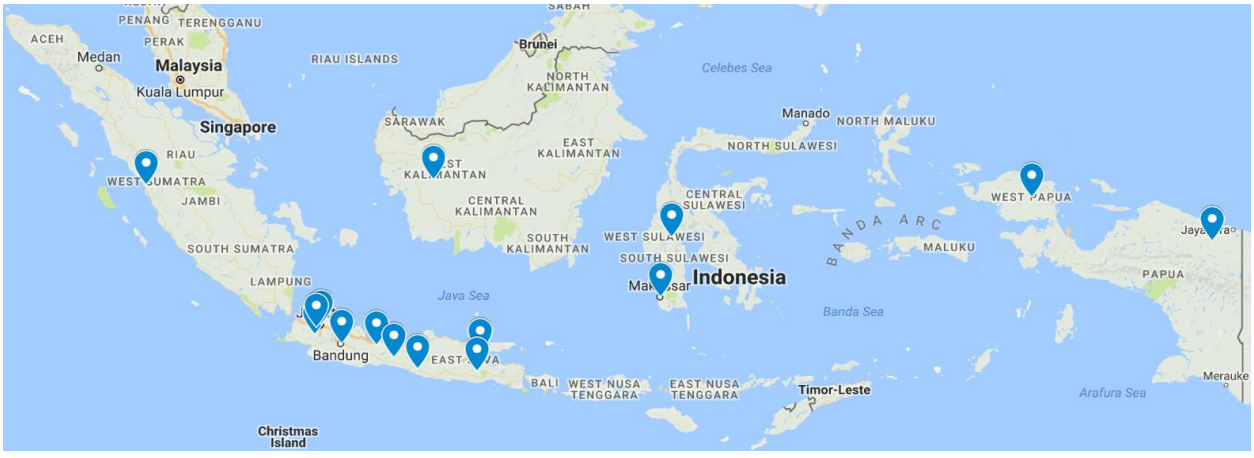

Figure 7. Map of Indonesia. The locations from where each of the interviewees is from is pin pointed on the map. Some locations have multiple participants from the area (Google Maps, 2017).

Table 1. Interview Coding. The 22 interviews were coded and tagged for having information about water access, flooding, industrialization, mining, weather change, deforestation, pollution, or farming.

#	FROM:	Water Access	Flooding	Industrialization	Mining	Weather Change	Deforestation	Pollution	Farm/Rice
1	Bogor, West Java								
2	Jakarta Capital City	X							
3	Yogyakarta, Central Java	X		X				X	
4	Brebes, Central Java	X						X	
5	Padang, Sumatra					X		X	
6	Banjarnegara, Central Java	X							X
7	Makassar and Toraja, South Sulawesi	X				X			
8	Makassar, South Sulawesi	X	X	X				X	
9	Makassar, South Sulawesi	X	X	X		X			
10	Jakarta, Capital City							X	
11	Surabaya, East Java	X	X	X		X			X
12	Mountains of West Papua			X			X		
13	Jayapura, Papua			X	X		X		X
14	Jakarta, Central Java	X	X	X	X			X	
15	Malang City East Java			X	X				X
16	Eastern Java	X	X	X	X		X	X	
17	Bandung, West Java	X	X	X		X	X		
18	South Tangarang, West Java	X	X	X				X	
19	Makassar, South Sulawesi	X	X	X	X	X	X	X	X
20	Kenyabur, West Kalimantan	X		X					
21	Jayapura, Papua			X		X			X
22	Jayapura, Papua	X		X	X	X			
	TOTALS:	**15/22**	**8/22**	**15/22**	**6/22**	**8/22**	**5/22**	**9/22**	**6/22**

4.3.1 Water Access Issues

Out of the 22 interview participants, 15 have had trouble obtaining potable water in their villages or cities in Indonesia. Pollution and poor recycling programs contribute to the lack of sanitation in accessible water sources. In order to eliminate some pollutants, the participants spoke of the use of homemade filters made from layers of sand, charcoal, coconut husks, and gravel. However, after filtration, the water still needed to be boiled before it could be consumed. Even tap water had to be boiled before use, which lead the interviewees to simply purchase jugs of clean water from a local store for drinking.

The problem of clean water access is not only a limitation in the smaller villages, but is also a difficulty that exists within the cities. One interviewee who lived in a suburb outside of the city of Jakarta, claimed there were many issues related to pollution within the city. She spoke of how the water in Jakarta was yellow in color, and expanded on how she would avoid doing laundry in the city at all costs, in fear of the dirty water discoloring her clothing.

One participant talked about growing up in an area that did not have direct water access lines. This prompted her father to build the family a well with a pump system connected to their house. She talked about how this made her house a meeting point for the community, where others would come to clean their clothes, shower, and obtain fresh water. The interviewee added that as time progressed, the area became more developed and a central water system has been established for those who can afford it. The remaining seven participants claimed that clean water is easily accessible where they lived in the mountainous regions of Indonesia because of the fresh runoff water from the springs.

4.3.2 Flooding Issues

Eight of the 22 participants discussed their worries of flooding. One of the interviewees stated that as a child, she found the floods to be like a vacation. Her house would become so filled with water that she had to stay at a friend’s house for a couple of weeks. She recalled swimming with her friends and finding leeches on her skin. Another interviewee found joy in her high school’s cancellation of classes during the flooding. She distinctly remembers in grade 10 that she could not enter her school due to the floods, but at the time simply viewed the issue as a break from her schooling. The eight interviewees stated that as children, they did not realize the

flooding was dangerous and harmful to their health. Figure 8, below, is an example of how the natural occurrence of flooding can be viewed as a time to play for Indonesian children.

Figure 8. Flooding of an Indonesian Village. A playful spirit fills the village after a flood (Medan, 2015).

One interviewee's home was located near a small river that flooded every year for the twenty years that he and his family lived there. His family eventually moved to another area away from the flooding. Ironically, his mother has informed him that the family's new living area had recently began to experience flooding as well. This same interviewee reflected on a clear memory of accidentally hurting his younger sister from a slip he had in the floodwater while he was holding her. Although he laughed at the memory, he noted that it was a clear example of the unforeseen dangers that the floods had presented.

Another participant spoke about the effects that industrialization has had on the flooding in her city. There used to be very few houses where she lived, and the flooding did not reach the main street of the community. However, now that more houses have been built and farms have been lost, the area affected by the flooding has expanded to the main street.

4.3.3 Industrialization Issues

Fifteen of the 22 interview participants were concerned about the industrialization movement in Indonesia. These interviewees spoke of how farming rice and other crops was the way that most Indonesians obtained their food. They stated that now government authorities are taking many of the rice fields and farmlands from the community and instead using them for the development of private industries, new homes, and other buildings. With industrialization on the rise, one interviewee noted that even the beaches that were once open to the public have become private property, requiring local residents to pay for access.

These 15 interviewees have also witnessed an increase of cars within their communities. One interviewee spoke of how the street she lived on had only one household that owned a vehicle. Now, each home has a car, with some of them even having two. The interviewee noted that this development has caused an increase in air pollution and a loss of fresh air for the community. The other fourteen interviewees have made similar claims that the air quality is decreasing due to an increase in cars. Another interviewee who lived in a suburb one hour away from the city noted that this problem is even worse in the cities. She claimed that the smoggy air quality of the city was so bad that you could “feel the dust from the pollution.”

After speaking to the interviewees, it was found that the industrialization of the land has impacted the youth of the community. The fifteen interviewees spoke of memories they have of playing in rice fields, which no longer exist due to the development of larger businesses. Without the open space of the rice fields, children are now more inclined to remain indoors. These participants referenced the fact that the children cannot play outside anymore and are forced to play with their “gadgets” and “technology” instead. As the interviewees that made these claims spoke of their childhood experiences spent outdoors, they expressed sadness towards the shifting change in focus that the newer generations are experiencing.

4.3.4 Mining Issues

From one of our interviewees, we learned that mining for nickel and other elements is common on the island of Papua. The interviewee’s father, who we sent interview questions to, works for a nickel mining company where he operates machines that take the rubble and bring it to the smelting and separation machines. An example of a mining site where he worked can be seen on the next page in Figure 9.

Figure 9. Mining Operation. A mining operation in Indonesia clears the land to mine for natural resources (personal communication, 2017).

To clear the land, this interviewee said that the trees are cut down and all the bushes are burned. These actions contribute to deforestation in Indonesia. Although land degradation is evident, according to the interviewee, some companies try to counteract the clearing of the land by replanting trees in a different location. However, the plants used in the land reconstruction are often different species than the original plants, which could ultimately be harmful to the environment. In addition, it was noted that after a mining company is finished in an area, the environmental department sometimes adopts the land for reforestation.

Another interviewee, although not directly involved with the mining industry, discussed how mining creates a dilemma: it is beneficial for money, but destroys the environment. Also, he mentioned that the mining companies marginalize the locals, especially the native people occupying the land. He said that this happens because the companies often decide to hire better trained and skilled workers from other, more developed locations. As a result, the local people are unable to make as much money and are forced into the lower classes of society.

4.4 Discussion

We had the opportunity to interview a geographically diverse group of 22 Indonesians. However, 22 people is a small portion of Indonesia's population of about 260 million, and we do not want to generalize the country from these 22 interviews (Indonesia, 2017). There are many islands, villages, cultures, and minorities that are inevitably unrepresented in this study. With this in mind, our focus was to capture in-depth personal narratives reflecting the environmental struggles that individuals from Indonesia have faced.

We found geographical clusters within our data for several of the environmental themes that were discussed in the interviews. It was discovered that each of the four participants from Sulawesi and nine out of the 12 participants from Java claimed to have had difficulty in accessing potable water. Flooding was also a common experience for five out of the 12 participants from Java and three out of the four from Sulawesi. Although, our sample set of interviewees is too small to make significant conclusions, it can be determined that potable water access and flooding are environmental concerns on the islands of Java and Sulawesi. In addition to these findings, it was also observed that industrialization is present on four of the five main islands of Indonesia.

Environmental Education Videos

The final products created from this project were three videos, each focused on a separate environmental issue, for CERES' Chook smartphone application. The environmental issues covered were water access, industrialization, and flooding. The videos produced consisted of a compilation of video clips from various interviewees discussing their experiences related to these three issues. All of the videos are approximately two minutes long and were designed to enhance the educational activities in the Indonesian village by providing genuine experiences related to water access, industrialization, and flooding.

Summary

After a discussion with our sponsors, we learned that our project contributes to a longstanding goal of the staff of CERES to link the organization's focus on environmental sustainability with their desire to encourage cultural awareness. The CERES education staff understands that achieving this goal will continue to take years of planning and hard work. Once

the plans are finalized and a contractor is hired, the environmentally focused Indonesian activities that were prototyped by previous WPI students will be fully established and open to the public. Upon this completion, our videos will become fully integrated within the Indonesian village at CERES.

Chapter 5. Recommendations

This section will offer recommendations to the education staff at CERES on the expansion of the cultural villages. We hope that these suggestions will help the organization to build upon our accomplishments and avoid some obstacles that we have faced throughout the project.

5.1 CERES Should Create More Videos for the Chook App

We recommend that videos be produced for the remaining environmental topics, which include mining, weather changes, pollution, and agricultural. To increase the effectiveness of the environmental videos, CERES staff should obtain footage of the environmental issues in Indonesia. It would be powerful if a visitor of CERES, could view the burning of the peatland, flooding of streets, the destruction of orangutan's habitat, or any of the other environmental concerns. We believe that this intense footage could have an impact on the visitors that would cause them to be more inclined to help in the efforts to improve these conditions in Indonesia.

We recommend that the CERES staff create additional videos to promote Indonesian culture such as traditional dance, religion, education, and community. Although Indonesia's environmental concerns were the focus of this project, we had the opportunity to attend and record a traditional Indonesian Saman dance performance and an Indonesian environmental band's concert. Each participant that we interviewed also spoke about their cultural experiences in Indonesia, and we have collected footage from those conversations as well. There is a wide variety of cultures and traditions across the country of Indonesia and we believe that it would be beneficial for visitors of the Indonesian cultural village to learn about them.

We recommend using Shotcut, which is the video editing software that we used to create the environmentally focused videos. The videos should be about 3 minutes and include five to seven participants. This allows several individuals to share their story while keeping the viewer engaged in the video.

5.2 CERES Should Create Videos Focused on Individual Narratives

We recommend that CERES produces additional videos that can be uploaded onto their YouTube channel using the material gathered during the interviews that is not currently included in the videos developed. For the YouTube videos we recommend that the CERES staff create longer videos that each focus on an individual interviewee's life. The videos should be about 5 minutes long so the interest of the viewer is not lost. We recommend using Shotcut for these videos as well. Currently, the videos cover an individual environmental topic using the experiences of several participants. This only gives the viewer a quick insight into a small piece of each interviewee's life. Longer videos focused on an individual will give the viewer time to connect with the participant. A way to implement these videos would be to add links following the short environmentally focused video on the Chook app, so that the viewers could click on them and discover more about any of the interviewees that have sparked their interest.

5.3 CERES Should Better Advertise the Chook Mobile Application

Carolyn, the Museum Audience Insights Manager, helped bring to our attention the need for CERES to better advertise their app. If visitors fail to download the app, they will be denied of the opportunity to view the videos that we have produced. To increase app downloads, we recommend that the CERES staff place more signage throughout the park and have individual staff members communicate with the visitors about their app. The app should also be marketed towards children using puzzles, games, and cartoon mascots, such as CERES' chook. We believe this will cause children to provoke their parents into downloading the app. We also recommend that the Chook app be advertised on the social media accounts of CERES to increase the number of app users. With these measures in place, visitors will be more likely to download the app and use it during their experience in the cultural villages.

5.4 CERES Should Expand Each of the Cultural Villages

The next group of WPI students that works in collaboration with CERES should focus on the collection of African narratives in order to continue the expansion of the cultural villages. These narratives should help to expand upon the environmentally focused African village activities that the 2016 WPI team prototyped.

We recommend that the CERES staff and the future WPI group find contacts within the African community prior to the group's arrival in Australia. Prior to our arrival in Australia, our sponsor, Subik, gave us contact information for six of our Indonesian interviewees. This was helpful because it allowed us to establish interviews before our project work had officially begun, and helped us to utilize the snowball sampling method to reach out to friends of interviewees, which ultimately lead us to conduct a total of 22 interviews. We believe that the next group will have the most success in finding these African community member interviewees if they are in contact with Jonathan Chee of Banksia Gardens. He has contacts within the African community, but it would be in the group's best interest to contact him early so that he can gather participants from the right demographic.

Before travelling to Australia, we recommend that future WPI students investigate the major environmental issues in Africa as background to their project. This will not only help them to write a more complete background section prior to their arrival in the country, but it will also help them to obtain better information from the interviews as they will be able to ask more in-depth questions. It will be important to research where the participants are from and what environmental issues may affect them in those specific regions.

5.5 CERES Should Create a way to Continue to Collect Narratives

We recommend that CERES or a future WPI group create a storybooth, similar to what StoryCorps has done, as seen in Figure 4 to reduce the time requirement to collecting videos. We conducted 22 interviews over the course of four weeks. A storybooth would give more individuals an opportunity to share their story, either as an audio or video recording or as handwritten narratives. This would create a continuously growing archive of life experiences, while minimizing the efforts of the staff at CERES. Narratives could then be collected throughout the entire year, from individuals with varying backgrounds, on a wider array of topics. One way to implement this storybooth is to have a room set up for a day each month for people to come in and tell their stories. This event could be advertised around the park as well as on CERES social media accounts to increase attendance.

5.6 CERES Should Directly Link the Environmental Education Videos to the Learning Activities in the Indonesian Village

CERES should directly link the environmental education videos to each activity to provide an immersive educational experience. In order to do this, CERES should compare and contrast the information collected in the interviews to the information presented in the prototype activities. With information that is prevalent in both data sets, a sign should be posted at the corresponding activity that directs the visitor to a short video for more information on the environmental challenge. With information from the interviews that is either slightly different from the activities or completely new and not presented in the activities, CERES should evaluate, adapt, and create activities accordingly to facilitate the integration of videos.

We recommend that for future expansion of the other villages, the CERES staff should reverse the current project order. First, interviews should be conducted and then the information about environmental challenges found in the interviews should be used to create new activities. In this project, we were asked to interview people from Indonesia to elicit information and personal experiences that relate to the current activities. This course of action proved to be challenging as it was difficult to ask the right questions, with limited Indonesian background knowledge, so that the participants could understand and speak about the specific environmental concerns. The reversal of the project order would allow the CERES staff to seamlessly integrate the videos with the activities in all of the cultural villages, providing visitors with a well-connected and immersive educational experience.

Chapter 6. Conclusion

Throughout our time in Australia, we collected narratives from 22 Indonesians and created 3 short videos from the narratives. The videos focus on the major environmental issues that affected the interviewees. These issues are water access, industrialization, and flooding. We began with only 6 interviewees and were worried about the depth in which we could explore these topics. Fortunately, many of our Indonesian participants were thrilled to extensively talk about their lives and culture. Several of the participants gathered their friends for us to interview resulting in an unexpected surplus of interviewees.

Although we were completing this project in Australia, we were also exposed to Indonesian culture. We attended a traditional Indonesian dance performance, learned the art of batik design, and indulged in Indonesian cuisine. In our background research, we learned about the environmental issues that Indonesia experiences. Through the interviews, we had the chance to explore the depths of these issues and better understand how they directly affect the community members. We could relate to some of the environmental struggles they faced, such as industrialization, pollution, and changes in weather patterns, but there were several topics that we were unfamiliar with, including limited access to potable water, yearly flooding, and mining. Through our work on this project, we became aware of some aspects of life that we have taken for granted. We have come to appreciate and are thankful to have daily access to abundant potable water, which many Indonesians lack. Working on this project was an eye-opening opportunity and has taught us to be grateful for all we have. We were blessed to be able to experience both Australian and Indonesian culture during our time in Melbourne.

We believe that the visitors of CERES will also be able to have a similar experience to ours once the integration of the videos to the Indonesian cultural village is complete. The development of videos for the African, Indian, and Aboriginal villages would also be an impactful enhancement to the existing exhibits. We wish the staff at CERES the best of luck in completing their goal in linking the cultural villages to their overarching focus of environmental sustainability.

Figure 10. Team Photo. Pictured from left to right: Xandria Korn, Brianna Courteau, Thomas Scaplen, and Jess Walsh.

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Appendices

Appendix A. Curator/Expert Interview Guide

Involvement:

1 Interviewer

3 Note-takers

1 Participant

Goal of Interviews:

Gain expert insight into the following:

- Designing an effective exhibit
- Mobile application use at exhibits
- Integrating personal narratives

Interviewer Introduction Statement:

Thank you for meeting with us today. We are a group of university students that attend Worcester Polytechnic Institute, located in the United States of America. We are volunteering at CERES to help improve their Indonesian cultural village educational exhibit. The goal of our project is to integrate personal narratives from individuals of Indonesian origin into this exhibit at CERES. The CERES staff believes that it is valuable to hear and gather authentic stories from Indonesians about their experiences which reflect environmental concerns in Indonesia. We are hoping to hear your thoughts on how you design an effective exhibit.

Possible Questions:

- What different ways do you use to present information?
- Do you have a mobile application? How do you market the app? How do you motivate people to download it?
- What makes an exhibit powerful/meaningful/impactful/effective?

Appendix B. Cultural Expert Interview Guide

Involvement:

1 Interviewer

1 Note-takers

2 Voice Recorder

1 Participant

Interviewer Introduction Statement:

Thank you for meeting with us today. We are a group of university students that attend Worcester Polytechnic Institute, located in the United States of America. We are volunteering at CERES to help improve their Indonesian cultural village educational exhibit. The goal of our project is to integrate personal narratives from individuals of Indonesian origin into this exhibit at CERES. The CERES staff believes that it is valuable to hear and gather authentic stories from Indonesians about their experiences which reflect environmental concerns in Indonesia. We are hoping to hear what you have to say about the cultural exhibit at CERES and how you think we should go about best representing these communities of people. Are there customs we should be aware of?

Appendix C. Participant Interview Guide

Involvement:

1 Interviewer

1 Note-takers

2 Video Recorder

1 Participant

Interviewer Introduction Statement:

I would like to welcome you to CERES today. My name is _____, and I am a volunteer working at CERES to help improve their Indonesian cultural village exhibit. The CERES staff believes that it is valuable to hear and gather authentic stories about your experiences living in Indonesia. I would like to emphasize that your story is welcomed and will help CERES in the effort to teach visitors about Indonesian culture. Everything shared in this discussion will remain confidential until your permission is given to share your contributions. Some topics that may be of interest are mining, water access, and farming.

Possible Questions:

- Where do/did you live in Indonesia?
- Could you tell me a little bit about your childhood?
- What's was/is your typical day like in _____?
- Do you have any siblings?
- How did your family make a living?
- Why did you decide to come to Australia?
- How long have you been in Australia?
- How is Australia different than your previous home? What's the major lifestyle difference?
- Did you have access to clean water?
- Have you experienced any flooding in Indonesia?
- Do you have any knowledge of mining in Indonesia and its environmental effects?

Appendix D. Round-table Discussion Guide

Involvement:

1 Mediator

3 Note-takers

6-10 Participants

Mediator Introduction Statement:

Thank you to everyone for meeting with us today. We would like to start with a brief introduction about our project. We are a group of university students who are volunteering at CERES to help improve their Indonesian cultural village educational exhibit. The CERES staff believes that it is valuable to hear and gather authentic stories from all of you about your experiences living in Indonesia which reflect some environmental challenges you have seen or faced. We would like to emphasize that everyone's story is welcomed and will help CERES in their effort to teach visitors about Indonesian culture and the environment. Everything shared in this discussion will remain confidential until permission from the participant is given to share their contribution. After this discussion we would like to conduct personal interviews with those who are willing to share their experiences in more detail with us. Does anyone have any questions for us?

Appendix E. Confidentiality Form

Informed Consent Agreement for Participation in Life Stories in a Cultural Village Educational Exhibit

Investigators: Brianna Courteau, Xandria Korn, Thomas Scaplen, Jessica Walsh

Contact Information: b17ceres@wpi.edu

Sponsor: CERES

You are being asked to participate in a research study. Before you agree, however, you must be fully informed about the purpose of the study, the procedures to be followed, and any benefits, risks or discomfort that you may experience as a result of your participation. This form presents information about the study so that you may make a fully informed decision regarding your participation.

Purpose of the study: The purpose of the study is to elicit and record stories from those who have lived in Indonesia. The stories will be used to teach school children and other visitors of CERES about and Indonesian culture.

Procedures to be followed: The participant will be required to complete approximately a 30-minute interview with the investigators to share one of their stories about their life back in Indonesia. The interview will be recorded, and the footage may be used to create a video that captures their story. The participant will be contacted when any videos are complete to ask for their approval of accuracy and appropriate depiction of both the culture and participant. Once the participant has reviewed and approved the videos they will be integrated into the cultural village at CERES.

Risks to study participants: Some questions may evoke memories that may bring discomfort to the participant. In this case, the participant has the freedom to not answer the question and move on to a new topic of discussion.

Benefits to research participants and others: This project will benefit CERES in its expansion of its cultural village exhibits and in its ability to teach the community about Indonesian cultures. It will also benefit those of the communities being interviewed, as it will provide a platform for them to speak of their culture.

Record keeping and confidentiality:
The recordings from this study will be only available to the staff at CERES and to the group conducting this project unless given permission to do otherwise. Records of your participation in this study will be held confidential so far as permitted by law. However, the study investigators, the sponsor or it's designee and, under certain circumstances, the Worcester Polytechnic Institute Institutional Review Board (WPI IRB) will be able to inspect and have access to confidential data that identify you by name. Any publication or presentation of the data will not identify you.

Initial each statement that you agree with.

- I give permission for my name to be used in the videos. _____
- I give permission to release other personal information that may enhance the videos.

  Examples: birthplace, age, etc. _____
- I give permission for my face to be shown in the videos. _____

Compensation or treatment in the event of injury: We do not believe that participation in this project will involve risk of injury or harm, but if something of that nature does occur, we will not be held liable for such injury or harm. You do not give up any of your legal rights by signing this statement.

For more information about this research or about the rights of research participants, or in case of research-related injury, refer to the top of the page for the team's contact information, and contact:
Professor Kent Rissmiller Tel. 508-831-5019, Email: kjr@wpi.edu
University Compliance Officer, Jon Bartelson Tel. 508-831-5725, Email: jonb@wpi.edu

Your participation in this research is voluntary. Your refusal to participate will not result in any penalty to you or any loss of benefits to which you may otherwise be entitled. You may decide to stop participating in the research at any time without penalty or loss of other benefits. The project investigators retain the right to cancel or postpone the experimental procedures at any time they see fit.

By signing below, you acknowledge that you have been informed about and consent to be a participant in the study described above. Make sure that your questions are answered to your satisfaction before signing. You are entitled to retain a copy of this consent agreement.

_____ Date: _____
Study Participant Signature

_____
Study Participant Name (Please print)

_____ Date: _____
Signature of Person who explained this study

Appendix F. Interview with Museums Victoria Audience Insights Manager

Museums Victoria Audience Insights Manager: Carolyn Meehan

- Visitors prefer to use their own devices, but do not want to download apps
- Motivate people by selling the new exhibit
- Reward motivated
    - Needed to have a table with someone telling them to download app
- Personal communication is key
- Market app towards kids and then they will ask parents to download it
- Always provide website/link to app
- Be sure to promote app/YouTube channel
- Chat with social media/marketing team at CERES
    - Link everything (Facebook, Instagram, YouTube, App, etc.)
    - Tell the story of the development of the videos
    - Get the app to engage kids (puzzles/games)
- App should be for visitors to gain more info
- Be sure to add humor, excitement to videos
- Maybe Chook could run the interview
- What do primary school children love about Indonesian culture?
- What would inspire them? Ex: save the world
- Music in background
- Connect all videos. Ex: chook running across screen
- Make parents want the kids to watch the videos
- Look and feel of video is important

Appendix G. Interview with Zoos Victoria Learning Programs Coordinator

Zoos Victoria Learning Programs Coordinator: Cyrelle Field

- Exhibit design motto: Connect, Understand, Act
    - Connect: Make the visitor feel connected to the animal
    - Understand: Help the visitor understand the struggles the animal faces
    - Act: Influence the visitor to act in a way to help or benefit the animal
- Important to consider your audiences
    - Need to market towards different age groups
- Campaigns in the zoo
    - Connecting animal exhibits with world issues
        - Palm oil campaign next to orangutan exhibit
        - Grocery store display shows a bunch of products that contain palm oil
        - Displays facts about palm oil production
        - Connects it to the habitat loss for orangutans
- Make the exhibit/trail flow nicely
- Have a direction or clear path for the visitor to follow