Enhancing the Experience of Visitors to the Cerrito Agricultural School and Hotel

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Abstract

Four students of Worcester Polytechnic Institute, in collaboration with the Fundación Paraguaya and the Cerrito Agricultural School and Hotel worked together in this Interactive Qualifying Project (IQP) to enhance the guest and visitor experience at the Hotel Cerrito in order to increase revenue streams for the Cerrito Agricultural School. The project had six distinct deliverables. The creation of a self-guided tour and host application, two maps of the campus, seventeen souvenir designs, and a list of future recommendations to the hotel to further enhance the guest and visitor experience. To achieve these results, the team conducted interviews, surveys, an observational study, and a guest focus group.

Acknowledgments

The team would like to acknowledge the incredible help and support they received throughout the completion of their project.

First, they would like to acknowledge and thank their advisors, Professors Lina Muñoz and Dorothy Burt. These professors attended meetings with the team, worked with the team to develop their deliverables, including this report, and helped the team communicate with sponsors and external counterparts. The team would also like to thank Professor William San Martín for his help in preparing this project.

Second, the team would like to thank the sponsors of this project, Director Amalio Enciso, Professor Martina Caballero, and Professor Valentina Santander. The team met with these sponsors weekly, and they provided the team with invaluable feedback and support that made the project possible.

Thirdly, the team would like to thank the employees of Fundación Paraguaya's communications team. With their help, the team was able to print central maps of the school and publish a self-guided tour application under Fundación Paraguaya's name. The communications team also helped in the future realization of the team's souvenir designs.

Lastly, the team would like to thank Mr. Venancio Franco, school carpenter Carlos Cantero, and all of the other professors and students at the Cerrito Agricultural School that aided in the completion of this project. These people were instrumental in this project and their help is greatly appreciated.

Executive Summary

Purpose and Goals

A team of students from WPI worked alongside the professors of the Cerrito Agricultural School to enhance the experience of a visit at the school and Hotel Cerrito. The goal of this project was to develop visitor-oriented outcomes to enhance revenue streams of Hotel Cerrito in support of the self-sustaining economic model of the Cerrito Agricultural School and Hotel. The objectives were to design a self-guided tour, signage, new souvenirs, and a report of recommendations to enhance visitors' experience at the Hotel Cerrito and increase revenue streams. To achieve the team's main purpose, the following methods were developed:

1. Gain an understanding of the sponsor's expectations including opinions on important aspects of campus to include in a self-guided tour, the placement of signage around campus, and souvenir offerings.
2. Design a pilot self-guided tour that incorporates the history of the school and the description of the main areas of the school from the student perspective.
3. Design and implement signage around campus and a central map.
4. Design and assess souvenirs that integrate the school's and guests' preferences.
5. Determine and propose other ways to enhance the experience.

Methods

At the start of the project, the team wanted to first understand the expectations of the sponsors. To achieve this a series of early-state interviews were conducted with professors involved in the project. From these interviews, the team was able to create a calendar of deliverables and expected outcomes, which was used to guide the project's direction. Then the team conducted another round of interviews with the managers of the different productive units on campus. From these interviews, the team was able to develop a script of information for each unit and the team then worked with the school's students to record the scripts. For the implementation of signage around campus, including a central map, the team worked closely

with Prof. Amalio Enciso to evaluate older maps of the school and confirm which locations the school wanted emphasized in a self-guided tour. The team then worked with the school's carpenter to construct the signs. With this methodology, the team was able to complete their first two objectives, the design of a self-guided tour and signage around the campus.

The team's third objective was the design of new souvenirs to increase the school's revenue. The team's methodology for this objective was to first conduct two surveys, one of the guests and visitors of the hotel and the other of the students. Based on the information analyzed from these surveys, the team decided to divide the souvenir design development into non-artisanal and artisanal souvenirs. The information from these surveys was also used to create prototype souvenir designs, tested through a round of guest focus groups.

The final objective was to determine and propose methods to enhance the visitor and guest experience at the Hotel Cerrito. This was achieved through the completion of an observational study of the hotel's amenities. The team witnessed first-hand the visitor and guest experience and, using the information gathered, was able to compile a list of suggestions to give to the Hotel Cerrito that they may implement in the future. In addition to the results from the observational study, the team conducted interviews with people closely related to the Cerrito Agricultural School to compile additional recommendations for ways to enhance the overall experience at the school and hotel. Additionally, the team created an artistic rendering of the campus to be displayed in the hotel lobby or guest rooms.

Results

The culmination of these four objectives was the creation of six distinct deliverables: the self-guided tour, application, tour signposts, central map and structure, souvenirs, and a report of additional recommendations to enhance the experience including an artistic rendering of the campus. All content for the self-guided tour was created by the team, who then worked with the students of the Cerrito Agricultural School to record the audio. The team created an application to house the tour audio and stops, and this app was sent to the Fundación Paraguaya to be published on Google play and App store. The team also created a central map of the school, displaying all of the campus's buildings and the thirteen different tour stops. The team designed the tour stop posts and central map structure and constructed these designs with the assistance of the school's carpenter. The team also created designs for seventeen different

souvenirs and gave these designs, suggested prices, and suggested manufacturers to the Cerrito Agricultural School and Hotel to produce using their own manufacturing methods. These manufactures were provided to the team by the Fundación Paraguaya. The final deliverable was the list of recommendations to enhance the visitor and guest experience given to the Hotel Cerrito, including the rendering of an artistic depiction of the school campus that the team suggests to display on the wall in the hotel lobby or in guest rooms.

Recommendations and Conclusions

The team's deliverables show a completion of the four objectives, following the defined methodology. Through the completion of this project, the team determined that the Hotel Cerrito provides a large portion of the Cerrito Agricultural School's revenue and the deliverables from this project will further increase this. The experience that guests and visitors have when they visit the school is crucial. It determines if they will return or if they will share their experience with others. This customer retention and word-of-mouth promotion is what the project's deliverables aimed to increase. With the increased experience of guests and visitors, the Hotel Cerrito can help increase the revenue of the Cerrito Agricultural School and support its self-sustaining economic model.

Resumen ejecutivo

Propósito y metas

Un grupo de estudiantes del Instituto Politécnico de Worcester trabajó con los profesores de la Escuela Agrícola Cerrito para enriquecer la experiencia de una estadía en la Escuela y el Hotel Cerrito. La meta de este proyecto era apoyar el modelo autosuficiente de la Escuela Agrícola y Hotel Cerrito con el desarrollo de diversos productos finales y experiencias para los visitantes para aumentar los ingresos. Los objetivos incluyeron el diseño de un tour autoguiado, señalización alrededor del campus, nuevos diseños de recuerdos y un resumen de recomendaciones para enriquecer la experiencia de los visitantes al Hotel Cerrito a la par de aumentar los flujos de ingresos. Para lograr nuestra meta principal, tuvimos los siguientes objetivos:

1. Comprender las expectativas de los colaboradores locales, incluyendo las opiniones sobre aspectos importantes del campus para incluir en un tour autoguiado, la ubicación de señalización alrededor del campus y diseños de recuerdos.
2. Diseñar un tour autoguiado que incorpora la historia de la escuela y una descripción de las áreas más importantes de la escuela desde el perspectivo estudiantil.
3. Diseñar e implementar señalización sobre el campus y un mapa central.
4. Diseñar y evaluar recuerdos que incorporan las preferencias de la escuela y los huéspedes.
5. Determinar y proponer otras maneras para enriquecer la experiencia.

Métodos

Al principio del proyecto, el equipo quería comprender primero las expectativas de los colaboradores locales. Para lograr esto, el equipo entrevistó a los profesores relacionados con el proyecto. De estas entrevistas el equipo creó un calendario con productos finales y resultados esperados, y este calendario fue usado para guiar el proyecto. Luego, el equipo realizó otro grupo de entrevistas, esta vez con los encargados de las unidades productivas de la escuela para obtener contenido del tour autoguiado. Para ello, el equipo escribió guiones de información para cada unidad y trabajó con los estudiantes de la escuela para grabar el audio

de los guiones para el tour autoguiado. El tour también fue probado por algunos visitantes de la escuela para evaluar y mejorarlo. Para la implementación de la señalización sobre el campus y el mapa central, el equipo trabajó con el Prof. Amalio Enciso para evaluar los mapas que ya tenía la escuela y confirmar cuales ubicaciones de la escuela quería enfatizar en un tour autoguiado. El equipo trabajó con el carpintero de la escuela para construir los postes que marcarían cada parada del tour. Con esta metodología, el equipo pudo completar nuestros primeros dos objetivos, el diseño de un tour autoguiado y la señalización sobre el campus.

El tercer objetivo del equipo fue el diseño de nuevos recuerdos cuyo venta podría dar a los huéspedes la oportunidad de llevar un recuerdo de su experiencia en el Hotel Cerrito, además de aumentar los ingresos de la escuela. La metodología para este objetivo fue realizar primero dos encuestas, una de los huéspedes y visitantes del hotel, y la otra de los alumnos. Basado en la información analizada de estas encuestas, el equipo decidió dividir el diseño de los recuerdos en dos partes: recuerdos convencionales y recuerdos artesanales. La información que resultó de estas encuestas también se utilizó para elaborar diseños prototipos de los recuerdos, que fueron compartidos con un grupo focal con el propósito de recibir su retroalimentación.

El objetivo final fue determinar y proponer otras maneras adicionales de enriquecer la experiencia de un huésped o visitante en el Hotel Cerrito. Esto se logró con la implementación de un estudio observacional de los servicios y las comodidades del hotel. El equipo experimentó de primera mano la experiencia de un visitante y, con la información del estudio, pudo hacer una lista de sugerencias para dar al Hotel Cerrito para implementar en el futuro. Además, el equipo creó un mapa artístico en 3D del campus para colgar en la recepción o en las habitaciones del hotel.

Resultados

Para lograr estos cuatros objetivos, el equipo elaboró seis productos finales distintos. Los dos primeros son el tour autoguiado y la aplicación que se utiliza para hacer el mismo. Todo el contenido del tour fue desarrollado por nuestro equipo y grabado usando las voces de estudiantes de la Escuela Agrícola Cerrito. El audio y descripción de las paradas del tour se encuentran en la aplicación que fue desarrollada por nuestro equipo y publicada por la Fundación Paraguaya. El equipo elaboró también un mapa central de la escuela con todos los

edificios y las trece paradas del tour. El equipo diseñó diecisiete ideas de recuerdos y se las entregó a la Fundación Paraguaya y la Escuela Agrícola Cerrito para fabricarlas con sus proveedores preferidos. Finalmente creamos una lista de recomendaciones para enriquecer la experiencia de un visitante o huésped del Hotel Cerrito. Este producto final está acompañado de un mapa artístico en 3D del campus de la escuela, que el equipo sugiere que el hotel cuelgue en la recepción o en las habitaciones.

Conclusión

Los productos finales cumplen con el logro de los cuatros objetivos, siguiendo la metodología definida. Con la finalización de este proyecto y el uso de estos productos, pensamos que el Hotel Cerrito podrá aumentar en una gran parte los ingresos de la Escuela Agrícola Cerrito. La experiencia que un huésped o visitante tiene cuando llega a la escuela es crucial para determinar si va a volver a la escuela, y si va a comentar sobre la experiencia con otros. La retención de clientes y publicidad "boca a boca" es lo que los productos finales del proyecto pretenden aumentar. Con una experiencia enriquecida para un huésped o visitante, el Hotel Cerrito puede aumentar los ingresos de la Escuela Agrícola Cerrito para apoyar su modelo autosostenible.

Authorship

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Fundación Paraguaya's Self-sustaining Schools	Graham Driscoll-Carignan
Spreading the Mission of Fundación Paraguaya	Anna Zauha
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Objective 2: Write transcript and record audio for the self-guided tour	Anna Zauha
Objective 2: Develop an interactive self-guided tour application	Joey Rozman
Objective 3	Graham Driscoll-Carignan

Objective 4: Collect information from the guests about souvenir preferences	Joey Rozman
Objective 4: Determine student ability to make souvenirs	Elidja Diakite
Objective 4: Design souvenirs that incorporate guest preferences	Elidja Diakite
Objective 4: Conduct guest focus groups to evaluate souvenir designs	Joey Rozman
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1.0 Introduction

The Cerrito Agricultural School is home to 150 students, ages 15 to 17, working on their education through learning by doing, selling, and earning. This school is one of four financially self-sufficient institutions across Paraguay run by the Fundación Paraguaya. The Cerrito Agricultural School alternates its traditional and "learning by doing" educational methodologies: students spend one week learning in classrooms and the next working on the farm and hotel located on the school's campus. This work pays for the students' education and allows the school to operate without the need for governmental support (Tuchin, 2019).

Most of the Cerrito Agricultural School's income comes from the Hotel Cerrito, which is run by professors and students (Tuchin, 2019). Increasing the revenue at the Hotel Cerrito would further support the self-sufficiency model of the Cerrito Agricultural School. The Fundación Paraguaya identified that the guest experience at the hotel is essential to increasing income, and they aimed to enrich this experience. Our team worked with the school to find and test methods that enhance the visitor experience at the hotel.

Agricultural tourism, often called agritourism, is becoming a common theme across the farms of Latin America. These farms use hotels, tours, and souvenirs to involve their guests in the daily operations and allow them to learn about the lifestyles of the people who work there (*Agritourism – An Overview,* n.d; *Agritourism,* 2022). A 2008 study in Peru found that tourists visiting rural areas of Peru wanted to experience new cultures and visit native communities (Asencios & Pérez, 2008). This study shows that people visiting South American countries are interested in the stories of agricultural workers, something promoted through agritourism.

Guests who stay at the Hotel Cerrito have the opportunity for a guided tour by one of the school's students, but other than this, there is very little interaction between the guests and the students. The hotel also offers products produced on the farm for purchase in the front lobby, but they are not very portable and do not last as long as souvenirs. Most students attending the Cerrito Agricultural School are from impoverished areas of Paraguay, and many do not see how interesting their story may be to hotel guests. Increasing agritourism at the Cerrito Agricultural School's farm and hotel would promote a rich guest experience, increasing

the interaction between guests and students. This would allow guests to learn the story of the Cerrito Agricultural School and the Fundación Paraguaya, as well as perspectives from the students and professors.

Our main objective was to enrich a visit to the Hotel Cerrito to enhance revenue streams, supporting the self-sustaining financial model of the Cerrito Agricultural School by creating a self-guided tour, implementing signage around campus, designing and testing new souvenirs, and generating a report of further recommendations. We accomplished this goal by determining the opinions of the school's director, professors, students, and Fundación Paraguaya employees, as well as the demographics, preferences, and needs of hotel guests through interviews, surveys, and observational studies. With this information, we designed a pilot self-guided tour, signage, and new souvenirs that integrated the professors' opinions, the guests' preferences and the school's capabilities. We tested and assessed the prototype souvenir designs through focus groups with hotel guests. These groups helped us evaluate the efficacy of our designs and create final proposals. We also created a list of additional methods and recommendations that the Hotel Cerrito could implement in the future to further increase revenue, attract guests, and enhance the overall experience.

2.0 Background

2.1 Cerrito Agricultural School and Hotel

Located in Cerrito, Paraguay, in the Department of President Hayes, Hotel Cerrito works in conjunction with the Cerrito Agricultural School. The two establishments are adjacent and operate according to a self-sufficient model under Fundación Paraguaya (see Appendix A).

Under the school's self-sufficient model, professors and employees in collaboration with students work to generate the resources needed to sustain the school while attending classes and implementing a "learn-by-doing" approach with the constant support of the instructors. Martín Burt, the founder of Fundación Paraguaya, created the school with the understanding that most of the students come from rural areas, and thus, already know how to grow vegetables. What the students need most is an education that will teach them the entrepreneurial skills that are necessary to make a living from growing crops (Maak and Stoetter, 2012). In addition to entrepreneurial skills regarding farming, the school offers experience and exposure to the hospitality industry with the on-campus hotel and dining room. Hotel Cerrito functions as a revenue stream for the school and is one of two production units that make up 60% of the school's income (Tuchin, 2019). At the hotel, students learn the necessary hospitality skills to operate a hotel (Fundación Paraguaya, n.d.; Hotel Cerrito, n.d.).

Almost all of the school activities are used to produce income (Tuchin, 2019). Thus, the school would benefit from additional revenue streams to continue to promote the self-sufficiency model. The school would also benefit from new ways to better engage guests at the hotel with the campus operations through self-guided tours. By generating additional revenue streams and ways to better engage hotel guests, the school will continue to provide a valuable educational experience to its low-income students, who will learn the necessary skills to become young entrepreneurs. This education, in turn, promotes the overall economy of Paraguay and helps to lessen the economic gap of rural poverty in Paraguay.

2.2 Rural Poverty in Paraguay

The widespread poverty in Paraguay's rural areas emphasizes the importance of a model in which the school can sustain itself without outside funding or resources. While poverty rates fell in rural areas in Paraguay between 2010 and 2019 from 50% to 34.6%, the poverty rate is still two times higher in rural areas than in urban areas (Mandelin & Miro Quesada Bambaren, n.d.). In addition to this inequality between urban and rural areas, women and indigenous people are affected more by poverty than other groups. Women experience a disadvantage because many men migrate to urban areas when the family farm deteriorates, leaving the women in poverty. Additionally, rural women have inadequate access to public goods and services (Mandelin & Miro Quesada Bambaren, n.d.). Indigenous people are also marginalized and experience higher poverty rates than other groups. A main reason for this poverty inequality is that indigenous communities tend to lack access to clean water, electricity, food, and other basic necessities (Mandelin & Miro Quesada Bambaren, n.d.). Thus, by providing men, women, and indigenous groups with an entrepreneurial education through their self-sustaining schools, Fundación Paraguaya provides the necessary resources to lessen the impact of this poverty by giving their students the skills needed to sustain a farm and generate income from their crops. The mission of Fundación Paraguaya to provide these communities with the necessary skills and knowledge to overcome this poverty is of utmost importance.

2.3 Self-Sustaining Financial Model

2.3.1 Financial Model of Fundación Paraguaya

Fundación Paraguaya's schools are based on theoretical education supported by practical work in agricultural production and hospitality. This model is a method for the impoverished youth of Paraguay to gain an affordable education, leaving them with real-world skills they can bring back to their families and use to become rural entrepreneurs. To support this method of education, it is important that the school's productive units, such as the dairy plant, animal production, and vegetable production units, provide enough revenue to pay for its operations (Fundación Paraguaya, n.d.). In 2020 and 2021, Fundación Paraguaya had a surplus income between $650,000 and $750,000 which can be seen in Figure 1 and Figure 2. A large

portion of this income came from the agricultural schools as opposed to their other programs (*Memoria Institucional 2021*, 2022; *Memoria Institucional 2020*, 2021).

GUARANIES	
INCOME	86.986.692.329
EXPENSES	(80.713.692.332)
SURPLUS BEFORE TAXES	6.272.999.997
TAXES	(941.117.088)
NET SURPLUS	**5.331.882.909**

Figure 1: Financial data of the Fundación Paraguaya for 2020 in Guaranies (Memoria Institucional 2020, 2021).

2021 (U$D)	
Income	16.235.982
Expenses	15.398.549
Income before taxes	837.433
Income Tax	170.968
Net income	**666.466**

The exchange rate used was of PYG 6870.81 (SET source).

Figure 2: Financial data of the Fundación Paraguaya for 2021 in USD (Memoria Institucional 2021, 2022).

Across Paraguay, there are 130 schools that try to achieve financial self-sustainability. Of these 130 schools, only the schools of Fundación Paraguaya have achieved full self-sustainability without government financial support. This means the foundation's schools make enough revenue from their production to pay for all their expenses. Each school has a variety of production units ranging from dairy farming, produce farming, and hotels. This project focuses on the Hotel Cerrito at the Cerrito Agricultural School. This hotel is one of two

productive units which make up nearly 60% of the school's revenue (Tuchin, 2019). For this reason, increasing the hotel's revenue would aid the school in remaining self-sustainable.

2.3.2 Fundación Paraguaya's Self-sustaining Schools

The Cerrito Agricultural School consists of 30 professors and 150 students between the ages of 15 and 17. It costs $18 a month to attend, and because of the school's income, Fundación Paraguaya can support 70% of these students with scholarships. Professors and students work together at the 13 different production units of the campus. Amalio Enciso, the school's director, describes the school and work balance as one of hard but productive labor. He states, "During one week the students dedicate themselves to the practical part and the next to incorporate theoretical concepts. The dynamics of the classes are very intensive." Director Amalio Enciso explains how students balance their work and family lives, "Generally, students return home three weekends a month. They rotate care for the animals and the hotel. Some do not want to go out because their family is far away, but we encourage them to be in contact with their closest relatives" (Tuchin, 2019).

During students' first and second years, they rotate around the different productive units of the campus, gaining a wide variety of skills. During their third and final year, students choose one unit to specialize in and teach their younger peers how to operate the unit. Additionally, students are given the opportunity to develop a business proposal as a final project before graduating. Graduates from the Cerrito Agricultural School leave with two technical high school degrees, one in agricultural studies and the other in hotels and tourism (Fundación Paraguaya, n.d.; Tuchin, 2019).

The Cerrito Agricultural School is one of four schools run by Fundación Paraguaya. One closely related to the Cerrito Agricultural School is the Belén Agricultural School. Here, students are taught rural entrepreneurship skills such as beekeeping, fruit growing, milk production, agriculture, pig farming, and horticulture. The school requires that its attendees know how to read and write to be admitted, but no basic studies are required prior to acceptance. Similar to the Cerrito Agricultural School, the Belén Agricultural School runs the Belén Hotel to supplement its revenue (Fundación Paraguaya, n.d.).

Another of the Fundación Paraguaya's schools, the Agricultural School of San Pedro, is located in the urban area of San Pedro of the Ycuamandyyu district. This school was started following the Bishopric of San Pedro's interest in replicating the self-sufficient model in a San Pedro school. The school contains nine production units: broiler chickens, pigs, cattle fattening, sheep, goats, rabbits, catering, vegetable gardening, and farming (Funación Paraguaya, n.d).

The last school, the Mbaracayu Educational Center, is located in the center of the Mbaracayu National Forest Reserve and is slightly different from the other schools. It is an all-women's school that owns 65,000 hectares of land. Similar to the other schools, it provides the same model of self-sustainability, with a first-class hotel called the Mbaracayu Lounge. Women who graduate from this school receive a technical bachelor's degree in environmental sciences (Fundación Paraguaya, n.d.).

2.3.3 Spreading the Mission of Fundación Paraguaya

Many organizations worldwide study the unique self-sustaining model Fundación Paraguaya has created. The Cerrito Agricultural School encourages the exchange of teachers and hosts around 70 interns from universities in the United States who come for a month and a half to study the foundation's model and work to solve a challenge and develop a solution (Tuchin, 2019).

Fundación Paraguaya also seeks to spread its self-sustaining model and methods to institutions throughout the world in hopes they will replicate the model. In this effort, the foundation started a program in 2005, headquartered in London, called "Teach a Man to Fish" (Tuchin, 2019). This program works to provide students with business and entrepreneurial skills by setting up profit-generating school businesses where students learn entrepreneurial skills through hands-on learning and generate an income stream for the school (Lee, 2016). The Teach a Man to Fish program aims to combat poverty through the implementation of institutions that teach students the necessary skills to succeed in real-world settings through their mission "to empower young people with the skills they need to succeed in school, work, and life" (Teach a Man to Fish, n.d.). This program has expanded from the headquarters in London to support schools and young people in Africa, Asia, and Latin America (Teach a Man to Fish, n.d.). The locations for the program are shown in Figure 3.

Figure 3: Map depicting the expansion of Fundación Paraguaya's "Teach a Man to Fish" program (Teach a Man to Fish, n.d).

2.3.4 Other Schools with Self-Sustaining Models in Latin America

Additionally, other schools have adopted self-sustaining models that differ in execution from the Cerrito Agricultural School and the three other schools in Paraguay under Fundación Paraguaya. While the schools under Fundación Paraguaya's model provide complete financial self-sufficiency, other schools in Latin America have adopted a self-sufficiency model through the use of sustainable materials and processes on campus.

The first self-sustainable school in Latin America, located in the small town of Jaureguiberry, Uruguay, has a different approach to implementing self-sustainability. Instead of producing crops and products to maintain a self-sufficient model, this school is constructed from recycled materials, and all of the energy consumed by the school is produced by the sun through solar panels. Similar to the Cerrito Agricultural School, the elementary school in Uruguay also produces organic food. Additionally, the school repurposes rainwater for use in the irrigation of plants, hand washing, and water consumption. To implement sewage treatment, the school uses a sewage tank made of recycled materials and the use of a wetland (Demartini, 2017). In this way, the school in Uruguay implements a self-sustaining model that differs from the fully financially sufficient model of the Cerrito Agricultural School but is still effective in maintaining self-sufficiency through sustainability.

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Another school that adopts the self-sufficient model is Monte Oscuro Educational Center, a middle school located in Cermeño in the district of Capira, Panama. The students come from all over the country and include 23 children at "social risk" who live in the boarding school on campus. The school, operating for 37 years, is like a small farm; the 133 students learn to raise pigs, chickens, cattle, and quails, produce eggs, and tend to gardens. Additionally, they collect honey and sell it to help generate income. The school also has a botanical garden, a nursery, a program to produce Californian worms, and a cabinetmaking workshop (*Monte Oscuro, centro escolar autosostenible*, 2019). In this way, the school operates as a self-sustaining school through the cultivation, production, and selling of goods to help fund its operations and generate revenue, but they have not achieved full financial self-sufficiency with these sales.

Because the Cerrito Agricultural School is a fully financially self-sufficient school, the school relies solely on the operations of the campus and products produced to fund its operations. Thus, providing an additional income stream for the school will allow the school to continue providing a valuable education to its students. In the next section, we will examine souvenir strategies as effective revenue sources.

2.4 Souvenir Strategies

2.4.1 Economic Impact and Success of Souvenirs

The economic impact and viable revenue source of souvenirs can be seen in different geographic locations. According to a study in Macau, "Overall, respondents would spend about 13% of total travel expenses in souvenir shopping" (Kong & Chang, 2012). In a separate study in Thailand, the Department of Tourism states, "the domestic tourists spent for souvenir shopping 14.05% and the foreign tourists spent for souvenir 16.05%" (Weerawan Marangkun & Auntika Thipjumnong, 2018). These two studies provide insight into the spending patterns of tourists and show that souvenir shopping is a viable revenue source with high profitability potential.

The success of souvenirs can be explained through three important attributes: aesthetics, connection to culture, and creativity of design (Lin & Mao, 2015). These three attributes are crucial to souvenir development. Researchers have also emphasized the practical

function of a product, and have suggested creating souvenirs with a lower carbon footprint by using local materials and integrating local culture (Lin & Mao, 2015; Qi & Hong, 2011). This research emphasizes that creating practical, functioning souvenirs made with local materials will succeed because they are supported by all three attributes of success.

Promotion is a crucial part of the economic success of tourism, and souvenirs are no exception to promotion. "Souvenirs are like the representatives of tourist sites to all around the world, they are businesses that promote good cultures and traditions of [countries] and they are perceived as a national art" (Weerawan Marangkun & Auntika Thipjumnong, 2018). Promoting a tourist location is heightened when a souvenir displays the culture and traditions of the originating country. Thus, implementing a souvenir at Hotel Cerrito that embodies the culture would help promote Hotel Cerrito as a tourist location.

The success of souvenirs can also be attributed to their use as a physical object of memory. Paraskevaidis and Andriotis offer insight into this idea, stating "Souvenirs as material objects link people with places and memories" (Paraskevaidis & Andriotis, 2015). This link is important to the success of souvenirs, as souvenirs are physical reminders of an experience, anchoring memories in a physical object. Souvenirs are also a piece of the culture they originate from, sharing that culture across the world.

As an example of the economic success of souvenirs, a 2021 Interactive Qualifying Project, IQP, in Paraguay titled *Promoting Qom Artisan Baskets in the United States* focused on creating and selling Qom baskets to the United States for an additional revenue stream. A depiction of these baskets is shown in Figure 4. The results of this project demonstrated that selling the Qom baskets was a viable revenue source that allowed artisans to earn money and introduce United States consumers to Qom culture (Olaya et al., 2021). The project concluded that selling Qom baskets to the United States was successful, providing further proof that souvenirs incorporating local cultural aspects result in success.

Figure 4: Artisanal Qom Baskets (Instituto Paraguayo de artesanía. n.d.).

The viability of souvenirs to provide income streams for rural tourism can be further demonstrated through a case study of Nepal, which examines the income from tourism of a rural village called Ghale Guan. In the village, tourism is 23% of the net income and benefits all socioeconomic groups. The study details the tourism income valuations and shows that selling handcrafted items is the second highest source of income. The research concludes that tourism provides employment opportunities, and the government should extend these opportunities to families in poverty through training and education (Budhathoki, 2014). This information provides further insight into the success of handcrafted souvenirs for rural tourism.

2.4.2 Effects of Souvenir Attributes on Sales

Because most tourists purchase souvenirs when traveling, it is important to price souvenirs in accordance with their demographics (Kong & Chang, 2012). A 2019 study by the Polytechnic Institute of Viseu analyzed factors that affected the purchasing behavior of tourists when buying souvenirs. In the study, the university conducted a survey where participants stated they were willing to pay between €1 and €5 but no more than €10 to €20 for souvenirs. Of the tourists surveyed, 68% of respondents indicated a souvenir budget between €5 and €15. Additionally, 67% of the tourists surveyed were willing to buy at least two souvenirs throughout their travels (Amaro et al., 2020). After conducting this survey, researchers

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compared their results to existing data from a 2008 study. The study found that quality was one of the most important attributes of souvenirs to Chinese travelers but only 30% of participants were willing to spend more than €15 (Li & Cai, 2008). When marketing souvenirs, it is important to consider the prices that guests are willing to spend, despite other attributes souvenirs may have.

In addition to price and quality, tourists consider the color and design of souvenirs regardless of their type (Kim and Littrell, 2001). By observing consumer behavior in marketing, Babin and Harris found that stronger stimuli, such as vivid colors, were more likely to grab consumers' attention than weaker stimuli. In addition, Harris and Babin found that consumers who observed products on a predominately blue background were more likely to perceive them as higher quality and were willing to pay more for the products (Crowley, 1993).

Considering the different attributes of souvenirs, it is important to realize the influence that souvenir type has on which attributes should be emphasized. For example, portability was most important to tourists when purchasing t-shirts and rugs compared to price and quality. The portability of these products, as opposed to price, quality, color and design, influenced the sale of these products the most (Kim and Littrell, 2001). This information suggests that certain attributes are more important than others, depending on the type of product.

To improve the experience of a stay at the Hotel Cerrito and generate additional income for the hotel, the hotel could consider selling various souvenirs at different price points. Price, quality, color, and design would be essential attributes to consider in the creation of souvenirs for Hotel Cerrito.

2.5 Tourism

2.5.1 Tourism in Paraguay and Latin American Countries

Paraguay ranks as one of the lowest-visited countries in South America, with only 1.1% of Paraguay's GDP coming from tourism as of 2019 (World Info Data, 2020). Comparatively, tourism made up 13.5% of Costa Rica's GDP the same year (Knoema, 2019). The main

demographics of tourists coming to Paraguay are from Argentina, Brazil, and the United States (Senatur, 2022).

Tourism in Latin America attracts millions of visitors a year. Despite this, some of these countries lack data on visitor demographics. There is a lack of qualitative and quantitative data on rural tourism in Paraguay and the demographics of visitors who prefer rural tourism. However, other Latin American countries have data on rural tourists that can be used to predict the demographics of rural tourism in Paraguay (Senatur, 2023).

A 2008 study in rural Peru surveyed the motivations and profiles of international tourists visiting rural areas. The findings of these surveys proved that the main motivation of tourists to visit rural areas was to experience new cultures. Additionally, the surveys found that 60% of the respondents were interested in visiting rural native communities (Asencios & Pérez, 2008).

In 2008, a report published by the National Institute for Cooperative Development studied the demographics of tourists who visited rural areas in Costa Rica. Three tour companies specializing in rural tourism were asked to report on the common demographics of their tours, which showed general commonalities among tourists. Most of the visitors were characterized as students or professionals who were searching for educational experiences in local areas (Bonilla Moya, 2008).

The demographics of rural tourists found in Peru and Costa Rica represent possible demographics for Hotel Cerrito. These demographics include students or professionals who want to experience local cultures and native communities of rural Latin America. This information could be used to target tours or souvenirs to increase the revenue at the Hotel Cerrito.

2.5.2 Agritourism

Rural tourism is a type of tourism that could be enhanced through agritourism, a term that the United States Census of Agriculture first used in 2007. Since then, agritourism has been a wildly growing business, and now over 50,000 farms in the United States have reported agritourism as a portion of their income. The term can be defined as a field where agriculture

and tourism are combined, providing new sources of revenue for producers. This revenue can come from sources such as visitor recreation, entertainment, or education. Some examples of agritourism include pick-your-own fruits and vegetables, farm markets, interactive animal displays, bed and breakfasts, farm tours, and farm-stay vacations. The main goal of an agritourism business is to ensure that activities are eye-appealing, easy to navigate, and safe. Signage throughout the farm is helpful in both directing and educating tourists on the property. It is also important to know the target audience and demographic, as this helps find the best methods of reaching out to prospective customers and ensuring that activities are of good financial value for guests. This value encourages guests to return and refer the farm to others. When starting an agritourism business, it is important to have a clear mission; passion for the farm is integral in customers enjoying their experience. It is important to create a unique culture that makes guests want to return (*Agritourism – An Overview,* n.d.; *Agritourism*, 2022).

While agritourism is steadily on the rise in the United States, some Latin American countries are developing these markets more slowly. For example, the Rancho Hato Viejo in Panama was first cleared by the government for tourism in 2008. Since then, the general manager, Soledad Rubio, has been developing methods for his farm to find new income sources. One method was the development of fourteen guest cabins for overnight stays on the farm. As of 2011, three years after his farm was cleared, Rubio's cabins were still in development. During the development of Rubio's cabins, Rancho Hato Viejo had developed a full-day farm tour where visitors could milk cows, feed chickens, walk through palm tree plantations, and learn about local medicinal plants. Rubio says that agritourism in Panama has "been a slow evolution because agricultural tourism is a new product in Panama" (Correa, 2011).

In contrast, Panama's neighbor, Costa Rica, has seen agritourism develop very quickly. The country has turned its coffee and macadamia nut industries into tourist attractions that provide stays and tours of the facilities. Costa Rica also has seen a new type of tourism come out of the rush of tourists: agro-ecotourism. Maria Amalia Revelo, a member of the Costa Rican Tourism Board, said that the growth in interest for agritourism in Costa Rica is due to "the popularity of our sustainable tourism and ecotourism initiatives. We like to see this form of tourism as a hybrid of the two, something we like to call agro-ecotourism" (Correa, 2011).

This type of tourism uses the environment as a driving factor. Tourists who come to Costa Rica want to spend time outside of the busy cities and instead interact with the more rural environments, something that countries like Costa Rica and Paraguay have in abundance (Correa, 2011).

The Cerrito Agricultural School has taken advantage of one main feature of agritourism, a farm stay at their Hotel Cerrito. People interested in learning more about the environment of rural Paraguay could spend a week at the Hotel Cerrito, where they could learn about the mission of Fundación Paraguaya and experience the productive units of the Cerrito Agricultural School.

Agritourism appears to be a budding market in Paraguay, but globally it will register a compound annual growth rate of close to 18% by 2023, according to an article published in 2019 (Global Agritourism Market, 2019). Global tourism contributes significantly to the growth of the agritourism market, and the market has witnessed an increasing need for farm stays, private homes, cabins, beach houses, villas, and cottages in agricultural lands (Global Agritourism Market, 2019). An increased focus on the agritourism, or "agro-ecotourism," market in Paraguay could show an equivalent increase in growth to the global market. One way to increase tourism is through implementing tours.

2.6 Tours

2.6.1 Current Tour Offering at the Cerrito Agricultural School

Due to the number of requests for tours Hotel Cerrito has received from guests and visitors, the school currently offers an in-person tour of the campus guided by the students. In a 2016 IQP titled *Tourism in Villa Hayes and Benjamín Aceval*, students from Worcester Polytechnic Institute, WPI, conducted research on the structure of the campus tour offered by the hotel to its visitors. From this project, the WPI students created a guide that provided instructions for an improved guided tour of the campus. In this guidebook, the team specified important parts of campus to include on the tour and provided a script to aid the tour guides. After providing Cerrito students with this booklet, the WPI students helped train the tour guides and practice the revised tour structure (Burton et al., 2016). The school and hotel do not currently offer a virtual or self-guided campus tour.

2.6.2 Benefits of Self-Guided Tours

Self-guided tours can offer many benefits over guided tours. One of the main benefits is the ability to customize the tour based on the tourists' interests. Answers to a questionnaire regarding a guided library tour at the University of Delaware revealed that oftentimes, guided tours spent too much time on areas of little interest to the students and not enough time on areas they were most interested in. Additionally, the library staff conducting these tours in the study found that too much of their time was consumed by leading these tours (Lynch, 1971). Because of this, the library implemented a self-guided tour by designing pamphlets for students to use to create a personalized, self-guided tour. After implementing these self-guided tours, students spent more time guiding themselves on the tours because they could focus on more relevant and interesting topics specific to their preferences. Additionally, the students could schedule the tours during times that were most convenient to them and not have to rely on schedules of the library staff. The staff also found that once instructions for the tours were written, there was little to no additional time taken from their schedules (Lynch, 1971).

These findings from Lynch's paper are important to note for the implementation of self-guided tours at Hotel Cerrito. The tours are currently guided by students, meaning these students are taken away from their studies and tasks in a productive unit on campus to guide the tour. By implementing a self-guided tour, students can continue to study and perform their tasks on the farm without interruption, while still having an opportunity to interact with hotel guests and campus visitors when these guests visit the productive units on their self-guided tour. Additionally, self-guided tours will allow hotel guests and campus visitors to tailor their tour experience to their interests. They can decide which productive units they are most interested in and spend more time learning about these areas of interest than other areas. Therefore, implementing a self-guided tour would help provide a more relevant, relatable, and interesting tour experience for hotel guests and campus visitors.

From the research presented in this chapter, we have found that souvenirs and self-guided tours are viable ways to enhance a guest's stay at Hotel Cerrito and produce additional income streams to promote the school's self-sustaining financial model. To develop a souvenir that will be effective for Hotel Cerrito's guests, further information about the hotel's guests and their preferences needs to be investigated. Additionally, stories from students and professors

will be useful in helping to develop effective self-guided tours. Likewise, the implementation of signage around campus will help direct visitors and guests around the campus. The project will focus on gathering the missing information to create effective souvenir offerings, signage, and a self-guided tour specific to the Cerrito Agricultural School and Hotel.

3.0 Methods

This project aimed to enhance revenue streams of Hotel Cerrito to support the self-sustaining economic model of the Cerrito Agricultural School and Hotel by developing visitor-oriented outcomes. The objectives were to design a self-guided tour, signage, new souvenirs and a report of recommendations to enhance visitors' experience at the Hotel Cerrito and increase revenue streams. The outcomes included a self-guided tour application, the implementation of signage around campus including a campus map, and the designing and testing of souvenirs and their prices. This section describes the steps the team took to achieve these goals.

To guide the direction of the project, several objectives were developed:

1. Gain an understanding of the sponsor's expectations including opinions on important aspects of campus to include in a self-guided tour, the placement of signage around campus, and souvenir offerings.
2. Design a pilot self-guided tour that incorporates the history of the school and the description of the main areas of the school from the student perspective.
   2.1 Gather content to include in the self-guided tour.
   2.2 Write transcript and record audio for the self-guided tour.
   2.3 Develop an interactive self-guided tour application.
3. Design and implement signage around campus and a central map.
   3.1 Determine important locations for signage.
   3.2 Create a map of the Cerrito Agricultural School campus.
   3.3 Develop designs for signposts and a central map structure.
   3.4 Construct signposts and a central map structure.
4. Design and assess souvenirs that integrate the school's and guests' preferences.
   4.1 Collect information from the guests about souvenir preferences.
   4.2 Determine student ability to make souvenirs.
   4.3 Design souvenirs that incorporate guest preferences.
   4.4 Conduct guest focus groups to evaluate souvenir designs.
5. Determine and propose other ways to enhance the experience.

To help achieve these objectives, the team conducted a series of interviews, observational studies, surveys, and focus groups.

3.1 Objective 1

Objective 1 was to gain an understanding of the sponsor's expectations including opinions on important aspects of the campus to include in a self-guided tour, the placement of signage around campus, and souvenir offerings. To accomplish this, the team conducted interviews with the school director and project stakeholders.

3.1.1 Interviews with the school director and professors

During the first and second weeks at the Cerrito Agricultural School, the team interviewed the school director, professor Amalio Enciso, and professors Martina Caballero and Valentina Santander. The interviews were semi-structured, where questions were open-ended, allowing for elaboration and sharing of stories during the interview. Additionally, follow-up questions that were not established before were asked for further elaboration (Johnson, 2017). These interviews aimed to determine what aspects of campus the school director and professors thought should be incorporated into a self-guided tour for the hotel and campus guests. Furthermore, the team learned about important places on campus that needed additional signage to help direct guests while walking around the campus, including a central map. The team also gathered information about the available resources on campus that could be used to make the signage and souvenirs and gathered opinions about what types of souvenirs would sell best and at what price points. The questions asked during the interviews with Director Amalio Enciso, Professor Valentina Santander, and Professor Martina Caballero along with a summary of their responses can be found in Appendix B, C, and D respectively.

All interviews conducted throughout the methods were audio-recorded using the Voice Memos app with the permission of the interviewee. These recordings were uploaded to the team's Google Drive and the team transcribed meeting minutes of each interview. Then, the team analyzed the meeting minutes by extracting relevant information based on each topic to be incorporated into the project deliverables.

3.2 Objective 2

The goal of Objective 2 was to design a pilot self-guided tour that incorporates the history of the school and the student perspective. To accomplish this, the team gathered content and information to include in the tour, wrote the transcript and recorded the audio for the tour, and compiled the information into an interactive self-guided tour app.

3.2.1 Gather content to include in the self-guided tour

To understand the history and important information guests should learn during a self-guided tour of the Cerrito Agricultural School, the team conducted semi-structured interviews (Johnson, 2017) with the founder of Fundación Paraguaya, Martín Burt, and the first director of the Cerrito Agricultural School under Fundación Paraguaya, José Luis Salomón. The series of questions asked during the interview with Martín Burt and José Luis Salomón and a summary of their responses can be found in Appendix E and F respectively. Additionally, the team consulted the book, *La escuela agrícola autosuficiente* written by Martín Burt, which contains the history of the Cerrito Agricultural School.

3.2.2 Write transcript and record audio for the self-guided tour

The team compiled information from the interviews in Objective 1 and 2 to aid in the writing of transcripts for the self-guided tour. Additional information about stops on the tour was gathered as needed through informal interviews of professors with extensive knowledge of productive units. After writing the transcript for the tour stops, second and third-year students, selected with the help of Professor Valentina Santander and other professors involved in the project, were asked to record the audio for the self-guided tour in which the student introduced themselves and briefly described some of the activities they performed in a day at the productive unit. The team chose to include second and third-year students in the recording because these students had more experience and knowledge about the productive units on campus. The team worked closely with each selected student to develop an individual script and important information the student should include when talking about the unit. Additionally, the team provided an outlined script for the students to follow, found in Appendix G. This script was modified and individualized for each tour stop (see section 4.2 Self-guided Tour).

3.2.3 Develop an interactive self-guided tour application

To begin the development of an interactive self-guided tour application, the team first conducted a semi-structured interview (Johnson, 2017) with Bruno Vaccotti, a member of the marketing team of Fundación Paraguaya, to gain information on the application development process. The series of questions during the interview with Bruno Vaccotti and a summary of his responses can be found in Appendix H.

During the second, third, and fourth weeks at the Cerrito Agricultural School, the team began the development of the self-guided audio tour application with the creation of a wireframe which consisted of an outline for the tour to which information could be added. Then, the team designed the application in JavaScript using a React Native framework. The tour content from section 3.2.2 was then added to the application.

3.3 Objective 3

The goal of Objective 3 was to design and implement signage around the Cerrito Agricultural School, construct a central map of the campus, and create a structure to house the map. The signage and map were created to guide guests when taking self-guided tours of the school's campus. To accomplish this goal, the team collected information on important locations for signage and a central map, developed designs for signs and central map structure, and worked with the carpenter of the school to construct the signs and structure.

3.3.1 Determine important locations for signage

To determine which locations of the campus would be most effective for placement of signage, the team conducted a series of interviews with professors Amalio Enciso (Appendix B), Valentina Santander (Appendix C), and Martina Caballero (Appendix D) of the Cerrito Agricultural School who were involved in the team's project. Interviews were also conducted with founder of the Fundación Paraguaya, Martín Burt (Appendix E), and the first director of the Cerrito Agricultural School under Fundación Paraguaya, José Luis Salomón (Appendix F). Information from these interviews was then used to develop a list of locations for stops of the self-guided tour and general guiding signs. After the interviews, the team toured the campus with a map to indicate locations where guiding signs would be beneficial. This list compiling sign locations from the interviews and the team's opinions was given to the project's

stakeholders to verify the final placement of signs. After the list was finalized, the team began designing the signs, as described in section 3.3.3.

3.3.2 Create a map of the Cerrito Agricultural School campus

To design a central map of the Cerrito Agricultural School campus, it was first important to verify that the team had the correct information. In an interview with Director Amalio Enciso, the team displayed a map created by a previous team of WPI students that worked on an erosion control project at the school in 2020 (Chachapoyas Ortiz, I., et al., 2020). Director Amalio Enciso edited the map to display the most current information. The interview questions can be found in Appendix B. After this interview, the team toured the campus with the edited map and verified the locations. The team created an updated map incorporating information from the interview and the team's tour of the campus.

To design the central map of the school's campus, the team used a computer-aided design (CAD) software, SketchUp, to illustrate the different buildings and paths of the school. The designs for the buildings were created based on photos the team took of the buildings at the school. This map was then verified with Prof. Amalio Enciso before being printed to display on the central map structure.

3.3.3 Develop designs for signposts and a central map structure

To design the structure for the signposts and central map, first the team needed to determine the opinions of the professors involved in the project, Director Amalio Enciso, Professor Valentina Santander, and Professor Martina Caballero. In individual interviews with these stakeholders, possible designs for signposts and the map structure were discussed and the team was able to develop an initial idea for these designs. The interviews with Director Amalio Enciso, Professor Valentina Santander, and Professor Martina Caballero and a summary of information can be found in Appendix B, C, and D respectively. After these interviews, the team used a CAD software, Solidworks, to model the verified designs. These models were scaled based on measurements and photos taken of locations around the school's campus.

3.3.4 Construct signposts and a central map structure

To construct the signposts and central map structure, the team first needed to determine what materials to use. In an interview with Prof. Amalio Enciso, found in Appendix B, the

team was able to develop ideas for which materials to use for the construction of signposts and a central map structure. These ideas were then taken to a general meeting with the project's stakeholders and the team discussed these materials and determined that dry *curupay* wood would be used. After determining the materials needed for the construction and developing the designs for the structures in section 3.3.3, the team worked with the school's carpenter to construct them.

3.4 Objective 4

Objective 4 was to design and assess souvenirs that integrate both the school's and the guests' preferences. To accomplish this the team conducted student and guest surveys and guest focus groups.

3.4.1 Collect information from the guests about souvenir preferences

The team conducted a survey of hotel visitors to learn information about the visitor's demographics, why they were visiting the school, what parts of the school interest them the most, if they would buy souvenirs, and what types of souvenirs they would like to see at the school. These surveys were composed of a set of predetermined questions, which can be found in Appendix I. Surveys were offered to visitors in the reception of the hotel in the form of a scannable QR code that linked to a Google Form. Survey responses were then analyzed using Google Forms built-in software. The survey data allowed the team to build a repository of common guest responses and preferences.

3.4.2 Determine student ability to make souvenirs

To gain a better understanding of what souvenirs the students at the Cerrito Agricultural School could create, the team conducted a survey of the students. The survey consisted of predetermined questions, which can be found in Appendix J. The surveys were offered through an online Google Form survey. Survey responses were then analyzed using Google Form's built-in software. Information from this analysis was used to determine which souvenirs could be developed at the Cerrito Agricultural School. The findings from this method were used in section 3.4.3.

3.4.3 Design souvenirs that incorporate guest preferences

The team then synthesized the information collected in interviews, student surveys, and guest surveys to design souvenirs that addressed the preferences of the hotel guests. These designs were created using a variety of software. The designs were sent to the project's sponsor for feedback and approval to then be assessed using guest focus groups.

3.4.4 Conduct guest focus groups to evaluate souvenir designs

The team conducted a focus group to determine which souvenir designs the guests of Hotel Cerrito would purchase and at what prices. This focus group followed the protocol in Appendix K.

The focus group consisted of a group analysis of seventeen designs of potential souvenir options and a set of follow-up questions found in Appendix L. From this focus group, the team was able to implement guest feedback to assess and revise the souvenir designs. The team also gathered information on the best prices to sell the souvenirs according to guest demographics and preferences.

3.5 Objective 5

The goal of Objective 5 was to analyze the guest experience currently offered at the Hotel Cerrito and use this analysis to offer recommendations of different ways the hotel could enhance their guests' experience. To analyze this experience, the team conducted an observational study and interviews with people familiar with the school. The protocol of the study can be found in Appendix M. This study was conducted over several days in order to determine the average overall experience of a guest. The team analyzed the quantitative information taken from the rubric to find which areas of the hotel the team should focus on. The team also conducted interviews with previous school director Engineer José Luis Salomón (Appendix F) and Professor Dorothy Burt (Appendix N). From these interviews the team was able to determine different categories of events the hotel could host in order to attract more visitors and entertain guests so that they may promote the hotel to others. A summary of the information gathered from these interviews can be found in their respective appendices.

After collecting the information from these methods, the team used their experience staying in hotels as well as research conducted for section 2.0 Background to propose two lists of ideas that the hotel could implement to enhance the guest experience at the Hotel Cerrito. These lists are further described in section 4.7.

The team's final recommendation was to hang an artistic rendering of the school in the hotel lobby and the guest's rooms. The team created an example of this map using an isometric map software called Icograms (see section 4.7 Ideas to enhance the overall experience at Hotel Cerrito). The layout of the buildings was based on a combination of previous maps created by IQP teams, Google Earth images, and photos taken from a tour of campus. Then this layout was confirmed and updated by Director Amalio.

3.6 Ethics

Establishing trust between the team and the participants of the interviews, focus groups, and surveys was important. Therefore, the team always asked for consent to record or use the information provided by any person interviewed or surveyed. The consent form given to participants provided information about the purpose and scope of the project and how their data would be used. Additionally, the team ensured each participant knew the completely voluntary nature of the questions. The participants were allowed to decline any question they did not wish to answer. Participants were given the option to have their personal identifying information removed from the transcripts, and instead given a pseudonym or other identifying marker to be used in the analysis and official reports.

All recordings and transcripts from participants were stored and analyzed in a manner that protected participant confidentiality and privacy. Data, recordings, and transcripts were stored in a secured Google Drive folder to where only members of the team had access.

Interviews, focus groups, observational studies, and surveys with students, staff, and visitors of the Cerrito Agricultural School and Hotel were conducted with previous authorization from the sponsoring organization, Fundación Paraguaya. Additionally, all methods were approved by the WPI Institutional Review Board prior to execution.

4.0 Findings

4.1 Introduction

The results chapter is the compilation of all results and deliverables created by the team during the project. The project involved the creation of a self-guided tour of the Cerrito Agricultural School campus (through an application), two maps (a central map and an artistic rendering) displaying the Cerrito Agricultural School's campus, twenty-two directional posts for the self-guided tour, seventeen suggested designs for souvenirs to be offered to guests of the Hotel Cerrito, and a report of recommendations to the project's sponsors to further enhance the guest experience. The following sections display and describe each result, starting with the self-guided tour.

4.2 Self-guided tour

To provide visitors to the campus and hotel with more opportunities to learn about the school's history and activities, as well as the accommodations and services offered by the hotel, the team created a self-guided audio tour recorded by Cerrito Agricultural School students. The tour can be downloaded on the visitor's smartphone. During the self-guided tour, tourists visit each productive unit on campus and learn about students' perspectives while listening to recordings of students' voices. The team determined important locations for tour stops to include on the self-guided tour through interviews and discussions with the professors at the Cerrito Agricultural School. Additionally, the team gathered information for the self-guided tour by conducting informal interviews with the productive unit managers on campus, who have the most knowledge on the specific areas. The audio tour was tested by several visitors who are not associated with the school, as well as counterparts and advisors to receive their feedback in order to prepare the final iterations of the tour.

The self-guided tour begins at the location of the central map that the team created (see section 4.4 Central Map), which displays where each of the stops on the tour are located. The first stop at the central map provides visitors with a brief overview of the history and mission of the Cerrito Agricultural School, incorporating information collected during the team's interview with Fundación Paraguaya's founder, Martin Burt (see Appendix E). After learning

about the history of the school, visitors can follow the signposts the team created to indicate tour stops (see section 4.5 Sign and Map Structures) and reference the map to arrive at the next stop. This central map is also located in the self-guided tour application downloaded onto the visitor's phone. The following stops give visitors the opportunity to visit each productive unit on campus and other major landmarks important to the school.

After discussion with professors at the school, the team decided to include 13 stops on the self-guided tour: central map (brief history of the school), hotel, dining room, chapel, central patio, academic sector, processed meat center, general services, animal production area, dairy processing plant, vegetable production area, eucalyptus grove, and pool and gazebo area (flora and fauna of the campus). The full tour script content can be found in Appendix O.

At the hotel stop, visitors learn about the history of the building and how the hotel serves as a center of training and practice of hospitality skills for the students. Visitors also learn about some of the amenities the hotel offers to guests and some typical activities the students perform while working at the hotel.

Next, the visitors visit the dining room, a part of the hotel and hospitality training the students receive. Visitors learn how a large portion of the food students serve at the dining room are products of the campus. The audio recording also relates typical activities students perform while working in the dining room.

Visitors are then directed across the path to visit the chapel, where they learn about the history of the building and how the uses of the chapel have changed over time, from being a building used strictly for religious worship to its current use as a multipurpose building where students and visitors gather for group events which occasionally include mass.

Across from the chapel, visitors are directed to the central patio which overlooks the student dining room, recreation room, administration building, girls' dormitory, and the student cooperative. At this stop, visitors learn about how the central patio is used as a place for the students to gather and spend time together.

After visiting the central patio, the visitors walk to the academic sector, where they learn about the unique curriculum and structure of the students' schedules, alternating between one week of working in the different productive units on campus and one week of studying in the classrooms. Visitors also learn about the two high school degrees graduates of the Cerrito

Agricultural School receive: a technical bachelor's degree in agriculture and a bachelor's degree in rural tourism.

A short walk away, visitors learn about the meat processing center, a new addition to the campus productive units. Visitors learn about the inspiration for introducing a meat processing center to campus where salamis and other processed meats are made.

Surrounding the meat processing center is the next stop, general services. During this stop, visitors learn about the activities students perform as part of general services including how students learn to repair broken furniture and make new furniture in the carpentry area, and learn how to operate a hotel laundry service, including washing, drying, ironing, and folding the laundry for the hotel in the laundry area.

While walking from general services to the next stop at the animal production unit, visitors are invited to observe the bamboo grove on the side of the path. After arriving at the animal production unit, visitors learn about the various animals the students care for on campus, including goats, pigs, chickens, cows, fish, and quail. Visitors have the opportunity to visit each type of animal and hear about typical activities students perform while working in this unit.

Next, visitors visit the dairy processing plant, where students learn how to make cheese, yogurt, and *dulce de leche*. The stop describes how each of the products is made from the milk produced on campus, and a student describes some of the activities they perform while working at the plant.

The next stop is the vegetable production unit, where visitors visit the greenhouses and vegetable gardens the students maintain. Visitors learn about the variety of species of plants the students cultivate and about the school's commitment to organic production.

Next, visitors are encouraged to either look or walk a short distance to where the eucalyptus groves line the campus. Through the audio, visitors learn about the history of this grove and how the school uses the trees to produce both firewood as well as high-quality wood for construction that is sold to companies and used around campus.

Finally, visitors are directed back to the pool and gazebo area of the hotel, where the audio describes the flora and fauna that can be found on campus.

4.3 Application

To offer a self-guided tour to visitors and guests to the campus and hotel, the team developed an application. The application provides a user-friendly interface for each tour stop containing a picture of the location, an audio description, and the audio script. Guests and visitors of the campus and hotel have two options for downloading the application. The first option is a QR code at the front desk of the hotel where the visitor or guest can scan the code, which brings them to the download screen in the App Store for IOS or Google Play Store for Android (Appendix P). The other option is for a guest or visitor to manually look up the app on the App Store or Google Play Store to download it. The application is published and maintained by Fundación Paraguaya. The team created a list of recommendations to maintain and add to the application (Appendix Q).

4.3.1 Description of audio tour application

The application was developed using a React Native Framework with JavaScript. The team used React Native and JavaScript so that the final product could be uploaded to both the App Store for IOS and the Play Store for Android. React Native and JavaScript allowed for streamlined development compared to using a language that is confined to IOS or Android development.

The application consists of sixteen different screens: a start screen, a map screen, the thirteen tour stops (see section 4.2 Self-guided Tour), and an end screen. There are two ways to navigate between screens within the app: users can use the arrows to move to the previous or next screen, or users can navigate to different screens using the Tab Navigator at the bottom of the screen. The team selected these two navigation options so that the user can complete the tour in the intended order of the stops or they can customize their tour to go to any stop in any order.

When a user starts the application, they will begin on the start screen (Figure 5). The start screen contains an image of the Cerrito logo, a text welcoming the user to the application and self-guided tour, and instructions on how to use the application. The start screen contains one forward arrow button that leads to the map screen.

Figure 5: Start screen of the self-guided tour application

The next screen is the map screen (Figure 6). The map screen contains an image of the central map designed in section 4.4, and the user can access this map at any time during the tour. The map on the screen can be zoomed in or out, to allow the user to get a closer look at different parts of the campus.

Figure 6: Map screen of the self-guided tour application

The following screens are the thirteen tour stops. Each tour stop screen displays a photo of the corresponding tour stop and has its own unique audio and text description. The audio descriptions can be controlled with the media player which can play, pause, and restart the audio, and the text descriptions can be controlled with a button to show or hide the text for each stop. Figure 7 displays the screen for the fourth tour stop at the chapel.
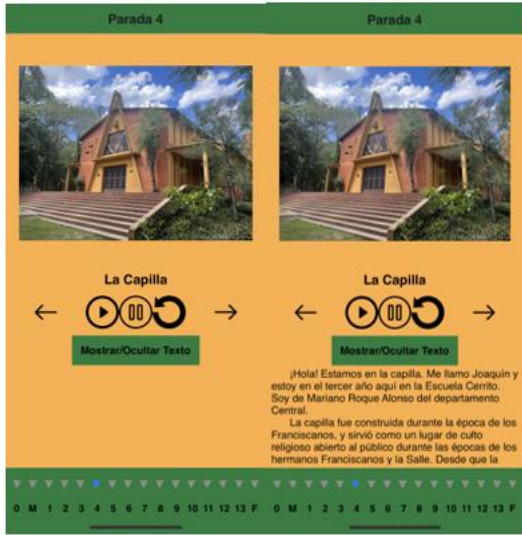
Figure 7: Chapel stop screen of the self-guided tour application with showing and hiding text

When the user has visited the last stop on the tour, they are brought to the end screen (Figure 8). The end screen contains a picture of the students who recorded the audio and a text closing statement to the application and self-guided tour with a thank you message to the user. The end screen contains the buttons to go to the previous stop or to go back to the start screen to begin the tour again.

Figure 8: End screen of the self-guided tour application

4.3.2 Reasoning for developing an application

The team began development of an application after brainstorming different ideas for offering self-guided tours. The different options for offering a self-guided tour included pamphlets that a visitor or guest could pick up at the central map structure, and a website for an interactive tour. After discussing the advantages and disadvantages of each method, however, the team ultimately came to the decision to develop an application because of its several strengths over the other options.

The first benefit of the application is that it is a low-cost option that does not create waste. Offering the tour using paper pamphlets to guide guests would require additional materials to continue printing the pamphlet, making this method more costly. Additionally, paper pamphlets are often thrown out after use, creating additional waste and the risk of them becoming litter. With an application, everything is virtual, eliminating the concern for any physical waste that could be produced from the tour. An application can also be offered free of charge to visitors and does not require the continuous funding and resources that physical paper pamphlets would require to be printed.

The second benefit of the application is that it can be used offline. The Cerrito campus contains several spots where there is no wifi or internet access, which would result in a website lagging or not being able to load. Thus, the self-guided tour offering had to be accessible without access to wifi. With the team's application, everything is hosted within itself allowing full offline access to the app and its contents after it is downloaded onto the user's phone. With complete offline access, the user will not notice any performance issues from the change in internet access.

The third benefit of the application is that it is easily accessible. The process of downloading the self-guided tour app is very user-friendly: guests and visitors can scan a QR code that directs them to the download page in the application store on their phone, or they can directly look up the name of the application to download it from the App Store for IOS or the Google Play store for Android. Offering the application on the App Store and Google Play store makes it accessible to any phone that uses IOS and Android and makes downloading the application fast and simple.

The last benefit is that the application is visually appealing. It consists of a color scheme and aesthetic symbols for directional and functional buttons. The application contains

green borders for the Tab Navigator and a yellow background for the main screen to complement the colors of the Cerrito School and Hotel logo. The screens also have visuals, containing images of either the Cerrito logo, the map of the school, or a picture of each stop.

4.4 Central Map

The team created a central map of the Cerrito Agricultural School to provide guests and visitors of the school with a better overall understanding of how to navigate a large campus with many different paths and buildings (Figure 9). The map also works in conjunction with the self-guided tour to guide guests along the thirteen stops (see section 4.2 Self-guided Tour). The map was downloaded digitally and housed in the self-guided tour application (see section 4.3 Application), as well as printed by the Fundación Paraguaya and attached to the central map structure (see section 4.5.2 Central Map Structure Design). The design of the map was created in a computer-aided design software, SketchUp, and the labels were added using photo editing software, Photoshop. The layout of the buildings was based on a map created by a 2020 IQP team from WPI (Chachapoyas Ortiz, I., et al., 2020). This layout was then confirmed and updated by Cerrito School Director Amalio Enciso.
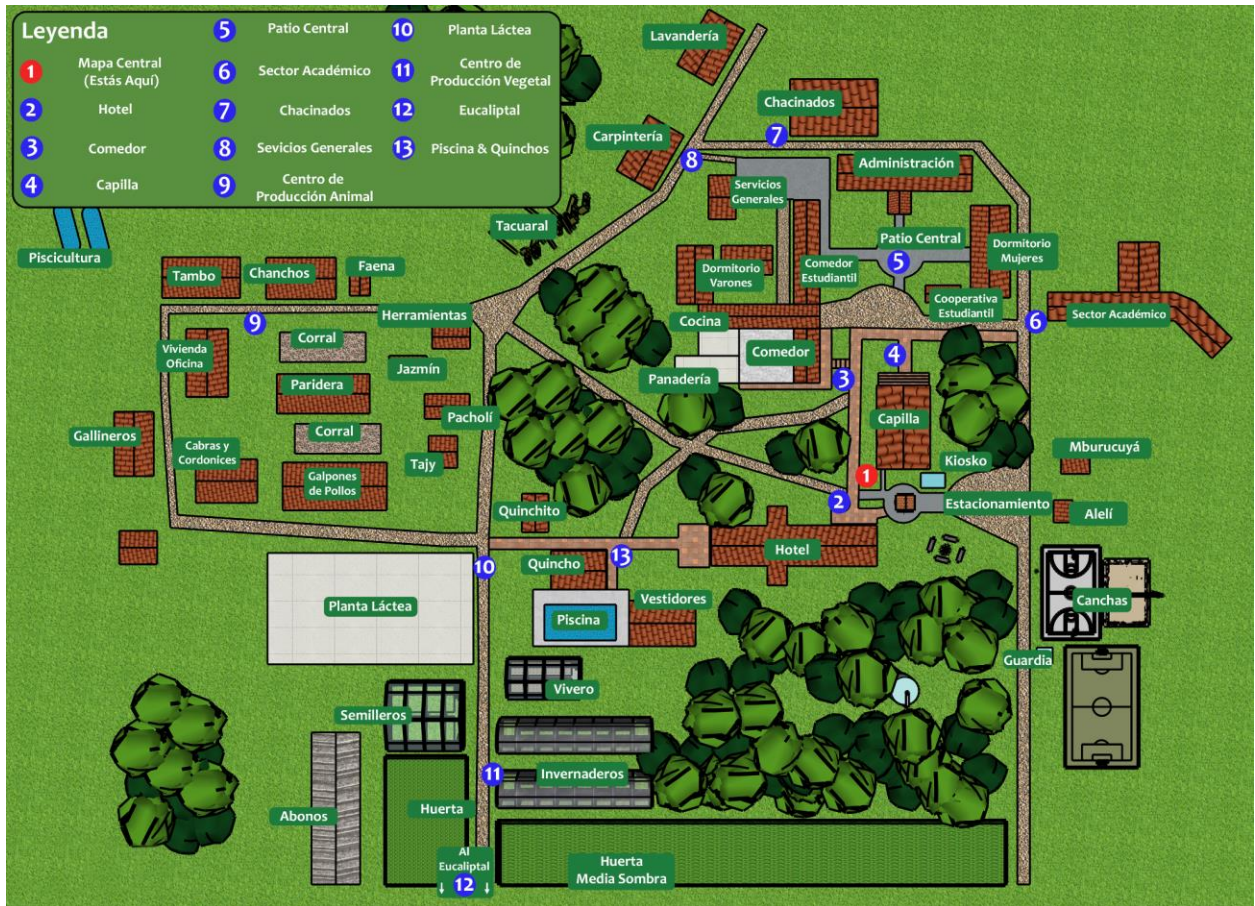
Figure 9: Map of the Cerrito Agricultural School

4.5 Sign and Map Structures

4.5.1 Sign Structures

To guide guests and visitors along the self-guided tour, the team created 22 different signposts that were placed around campus (see section 4.2 Self-guided Tour). Twelve of these posts serve as stations for the tour. The remaining ten have arrows and are used to guide visitors along the tour circuit such that at each post, the next post is visible (see Figure 10 for examples of both types of signposts). The posts were constructed of native *curupay* wood (*piptadenia macrocarpa familida*) with the help of the school's carpenter. The posts are 1.6 meters tall in total, with 30 centimeters underneath the ground.

Figure 10: Example of directional tour post with arrow and of tour stop post

During the construction and design of the posts, it was important to consider the climate's impact on their longevity. To combat the effects that rain erosion would have on the posts, a diagonal slant was cut at the top so that rainwater would slide off. The posts were also coated in marine-grade varnish and the numbers were painted with weather-resistant synthetic paint.

4.5.2 Central Map Structure

Following the design of the central map (see section 4.4 Central Map), the team designed a structure to house the map and serve as the first stop for the self-guided tour (see section 4.2 Self-guided Tour). The structure was constructed with the help of the school's carpenter with two posts and a small roof to protect the map from Paraguay's harsh climate. The structure was created to be about three meters tall and constructed out of dry wood (Figure 11).

Figure 11: Central Map Structure

The map structure was placed in a central location outside of the hotel's lobby. This location was chosen as it was the first thing guests would see when walking out of the hotel, so it would be easy for them to find and orient themselves.

4.6 Souvenirs

Another deliverable for the team was the creation of ideas for souvenirs that the Hotel Cerrito could sell in its lobby to guests and day visitors. The team developed two categories of souvenirs: non-artisanal souvenirs and artisanal souvenirs. The non-artisanal souvenirs consisted of common commercial souvenir designs containing the Cerrito logo. Additionally, the team developed ideas for artisanal souvenirs that could be made by the students at the Cerrito Agricultural School using materials available on campus or subcontracted out to local artisans. The following section describes in detail the souvenir designs the team developed.

4.6.1 Non-Artisanal Souvenirs

After conducting guest surveys to gather information about guest souvenir preferences, the team prepared a total of ten designs of non-artisanal souvenirs for the Cerrito Agricultural School. These souvenirs include baseball caps, pens, notebooks, stickers, t-shirts, mugs, water

bottles, postcards, key chains, and money pouches. The non-artisanal souvenir designs including suggested prices and manufacturers are included in the following Figure 12.

Description of Souvenir	Photo of Souvenir	Suggested Price	Suggested Manufacturer
The hats are white, and contain an embroidered Cerrito logo on the front.		PYG 80,000	Digital Touch
The pens are green and white, and contain the Cerrito logo.		PYG 5,000	Visual Print
The notebooks are green, contain the Cerrito logo and a *guampa* on the front, and a quote on the back.		PYG 7,500	Digital Touch
The stickers come in a variety of different colors, with different quotes, pictures, and the Cerrito logo.		PYG 2,000	Visual Print
The t-shirts come in a variety of colors, and have multiple design options, containing different sizes of Cerrito logos on the front of the shirt, and quotes or pictures related to the school on the back. They are offered in various sizes.		PYG 80,000	Digital Touch

The mugs are white with a yellow interior and come in two designs, one with the Cerrito logo on the front and a quote on the back, and the other with the Cerrito logo on the front and no quote on the back.		PYG 40,000	A3
The water bottles are white and contain the Cerrito logo on the front.		PYG 80,000	A3
The postcards contain different pictures of the Cerrito campus on the front and the Cerrito logo with a place to write a message on the back.		PYG 20,000	A3

The keychains are blue and have the Cerrito logo engraved in leather.		PYG 30,000	Digital Touch
The money pouches have the logo of Cerrito on the front.		PYG 20,000	Visual Print

Figure 12: Table of the non-artisanal souvenirs with descriptions, prices, and suggested manufacturers

The team chose to develop these souvenirs based on two sources of information: a survey of visitors to the Hotel Cerrito (see Appendix I), and a list of previous souvenirs the Cerrito Agricultural School has offered, obtained through an interview with Professor Martina Caballero. The survey was conducted by the team to gain further knowledge about the visitor and guest demographics, as well as what souvenirs they would be interested in. The team then created a list of suggestions from this survey. From the interview with Professor Martina, the team learned what souvenirs have been previously sold at the Cerrito Agricultural School and at what prices (see Appendix D). The team then created a list of the suggested souvenirs mentioned in Figure 12 above.

From these two lists, the team compiled a list of ten souvenirs to use for designs. The prices were determined based on the cost of manufacturing and a price markup, and previous prices the hotel had sold souvenirs at before. This information was discussed in the interview with Professor Martina.

The team designed the souvenirs using CustomInk and sent the designs to Fundación Paraguaya to be created by their preferred manufacturers.

4.6.2 Artisanal Souvenirs

In addition to the initial ten designs of non-artisanal souvenirs, a list of seven artisanal souvenir designs was created as suggestions for future sales at the hotel. These artisanal souvenir ideas consist of wood sculptures, rock keychains, painted rocks, snow globes, bamboo candles, wind chimes, and mason jar candles. The ideas for the artisanal souvenirs include prices and suggested manufactures listed in the following Figure 13.

Souvenir	Brief description	Design ideas	Suggested Prices	Manufacturer
Wood sculpture	Wood sculptures of different animals that are found around campus.	(*MakeShiftMaker*, n.d)	PYG 55,000	Contracted artisan
Artisanal keychain	The rock has an animal from the campus painted on the front. There's a keychain that runs through the hole on the top part of the rock.		PYG 30,000	Students of the Cerrito School
Painted rocks	These are rocks painted by the Cerrito students with different animals that can be found on the Cerrito Agricultural School campus.	(*Rock Painting For Beginners: Painting On Rocks For Kids*, n.d)	PYG 40,000	Students of the Cerrito School
Snow globe	These snow globes can use recycled jars to make snow globes with objects from the Cerrito school inside.	(*Summer Snow Globes*, 2017)	PYG 30,000	Students of the Cerrito School

		(*Get Bamboo Candle - Lavender,* n.d)	PYG 50,000	Contracted artisan
Bamboo candles	These bamboo candles are made from bamboo native to the Cerrito School. They would be sold in pairs and use conventional wax or beeswax.			
Wind chime	This design is a bamboo wind chime that uses the local bamboo.		PYG 55,000	Contracted artisan
Candle jars	These candles use recycled *dulce de leche* jars. The candles can be made with conventional wax or beeswax.	(Bramble Berry, 2019)	PYG 30,000	Students of the Cerrito School

Figure 13: Table of the artisanal souvenirs with descriptions of design ideas and suggested prices and manufacturers

A portion of the artisanal souvenir ideas was generated based on guest and student survey responses (see Appendices I and J respectively). The survey was conducted by the team to gain further knowledge about the visitor and guest preferences as well as what souvenirs students could realistically make. The team then created a list of suggestions from this survey while also considering what could be made with the available materials on campus.

From the information gathered from the surveys and interviews, a total of seven artisanal souvenirs were chosen. Two of the artisanal souvenirs were designed by the team, and the remaining images were sourced from the internet and represent the team's ideas for the

artisanal souvenirs. The prices were determined based on a focus group and similar prices from local vendors (Appendix L). The souvenirs that the team designed were created using an application called Drawing Desk and gave the designs to our counterpart professors Amalio Enciso, Martina Caballero, and Valentina Santander at the Cerrito Agricultural School for future implementation.

4.7 Ideas to enhance the overall experience at Hotel Cerrito

The team prepared a report of recommendations that the Hotel Cerrito could implement in the future to enhance the overall experience of visitors to the school campus and hotel as well as an artistic map to be displayed in the hotel. The recommendations are divided into three parts: the results of an observational study the team conducted as well as general recommendations collected from the team members' individual experiences, information gathered from interviews with people familiar with the Cerrito Agricultural School, and the artistic map of the Cerrito Agricultural School campus.

4.7.1 Recommendations from the observational study

The observational study was conducted by the team members to experience the different amenities the Cerrito Agricultural School and Hotel have to offer. The team created a list of suggestions for the hotel's restaurant, guided tour, check-in experience, and rooms.

In addition to the results from the observational study, the team conducted interviews with people closely related to the Cerrito Agricultural School such as Professor Dorothy Burt (see Appendix N) and Engineer Jose Luis Salomón (see Appendix F). The team compiled information from these interviews and ideas from the team's own experiences into a list of suggestions for the hotel, including suggested events, aesthetic changes, and ways to enhance the overall experience.

Suggestions for the dining room:
- Teach students how to interact with a visitor when serving food
  - Introduce themselves to customers at the door and show them to their seats.
  - To start, ask if the customers want something to drink and describe the first course or meal to be served.

- ○ Remove the plates from the first course.
- ○ When bringing the next dish, describe where the food comes from and what it is.
- ○ Throughout service, speak loud and clear so it's easy to understand.
- Enrich the atmosphere with music in the background
- Once students are trained to greet guests upon arrival, introduce themselves, describe each dish as they serve it and what food was produced by the school, etc. Have third year students each year continue to train younger students so that the method and experience is not lost with each graduating class.

Suggestions for the guided tour:
- Have students share their experiences with visitors.
- Guides should always speak loud and clear.

Suggestions for guest check-in:
- Stop what you're doing to greet guests when they arrive.
- Start conversations with guests and welcome them to the hotel
- Give visitors a link to a page that has information about hotel amenities (including dining hours, how to take a tour of the school).
- Update the website to allow for reservations to be made online.

Suggestions for guest rooms:
- Create a guide showing the exits in case of a fire.
- Put sheets of paper on the walls of rooms, like the cabins, that have information about the hotel and school amenities.

Suggestions for aesthetics:
- Construct a tree tunnel along the entrance road to the school with leucaena, similar to that found in Santa Ruta in Alto Paraná. See:

Photo of the leucaena in Santa Ruta einAlto Paraná (*Mágico túnel verde,* n.d.)

- Paint the bus stop on the highway at the end of the entrance that's next to the school and make it more appealing. Paint something that represents the Cerrito school. Plant vines and shrubbery to make it more beautiful.
- Plant shrubbery to block the generator from view.
- Change tires under the Cerrito School sign on the highway because they are old and visually unappealing.
- Putting up a screen to block the trash area.
- Make a path out of tree trunks or stone to replace the dirt path between the pool behind the hotel and the front of the hotel
- Remove the weeds from flower beds outside the hotel and around campus
- Replace the strip of land between the concrete slabs in front of the hotel to be either all grass or all rocks
- Fill the star in the central patio with flowers and plants to make the area more cheerful.

Suggestions for tour:
- Create signage to indicate the carpentry and laundry buildings
- Create little indicator signs in the plants of the vegetable production center.
- For the self-guided tour:
    - Create slightly larger signs with larger fonts for the text and directional arrows.

- ○ Make the posts a little higher so they are easier to see.
- ○ Introduce more signage to direct visitors from the central patio to the academic sector, from the academic sector to the processed meat center, from the general services center to the animal production center, and from the animal production center to the dairy processing plant.
- Offer different themed tours:
  - ○ Tour focusing on history of the agricultural school
    - ■ Include information about the building that looks like an elephant and the history and significance of it
  - ○ Tour focusing on flora and fauna
  - ○ Specialized farm tour
- Add a sign to indicate the bamboo grove along the tour path.

Suggestions for events:
- Create a virtual pamphlet of activities that can be done at the hotel that is housed on the hotel website.
- Offer a prospective student shadowing day for younger students interested in the school and their families.
- Host more events and activities at the hotel/school to encourage more guests:
  - ○ Host an art weekend: bring in a musician and dance instructor to offer a musical concert and dance lessons. Advertise the event on social media to attract people. This can be a joint event where both the musicians and hotel are promoting the event.
  - ○ Offer ways for guests to interact more with the students and allow them to try some of the activities the students perform at the production units
  - ○ Have a wine and cheese tasting/social event, serving the cheese the school makes. Partner with a winery (or company that sells wine) or other organization to promote advertising and split the profit. Advertise the event on social media to attract more guests.
  - ○ Offer events that include families:
    - ■ Grill weekend at the quinchos

■ Cooking lesson in the tatakua

4.7.2 Artistic map of the School

The final deliverable for this section was an artistic map of the Cerrito Agricultural School's campus (Figure 14). This map is meant to be placed in the hotel rooms to give guests an overview of the campus layout from a more artistic perspective. The team designed the map using an isometric map software called Icograms. The layout of the buildings was based on a combination of previous maps created by IQP teams, Google Earth images, and photos taken from a tour of campus. Then this layout was confirmed and updated by Director Amalio Enciso. After the team completed the artistic rendering of the campus and received approval from the professors of the Cerrito School, the map was sent to Fundación Paraguaya to be printed and was delivered to the Cerrito School for display at the hotel.

Figure 14: Artistic map of the Cerrito Agricultural School

5.0 Conclusion

Through the completion of interviews, surveys, an observational study, and a focus group, the team developed a series of deliverables designed to enhance the guest experience at the Cerrito Agricultural School and Hotel. These deliverables included the creation of a self-guided tour application, twenty-two directional posts for the tour, two campus maps, seventeen souvenir designs, and a report containing recommendations the Hotel Cerrito can implement in the future. The team worked closely with the Fundación Paraguaya and the Cerrito Agricultural School, as well as their advisors, to develop these deliverables. These deliverables were co-created with the Cerrito Agricultural School and Hotel in order to enhance the guest experience, which will increase the revenue produced by the Hotel Cerrito in support of the school's self-sustaining economic model.

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Appendices

Appendix A: Sponsor Description

Fundación Paraguaya, the first non-governmental organization in Paraguay, was founded in 1985 by Martín Burt as a non-profit, self-sufficient, social organization. At the time of the organization's founding, Paraguay was under the dictatorship of Alfredo Stroessner, a leader who had a passive approach to addressing the poverty problems in Paraguay. The organization was founded out of frustration of social leaders who wanted a more active approach to solving Paraguay's poverty issues (Cavanna, 2021). Because a large portion of Paraguay's rural population is in poverty, Martín Burt saw a need for educating the community on entrepreneurial skills; he speculated that many people of the poor rural communities already knew how to grow vegetables, but the skills they were missing were how to make money from their crops (Maak and Stoetter, 2012). Poverty continues to be a persistent problem; as of 2019, 23.5% of the population is still in moderate poverty, while 17% is in extreme poverty as seen in Figure 15. With the founding of Fundación Paraguaya, Martín Burt established an organization with the mission to aid in eliminating the multidimensional poverty of families by providing practical, innovative, and sustainable solutions through entrepreneurial skills, allowing these families to live with dignity and improve their economic standing as active members of their society. The foundation has four main programs to help carry out their mission of eradicating poverty and activating entrepreneurial potential: the poverty stoplight, microfinancing, entrepreneurial education, and self-sustaining schools (*Fundación Paraguaya*, n.d.).
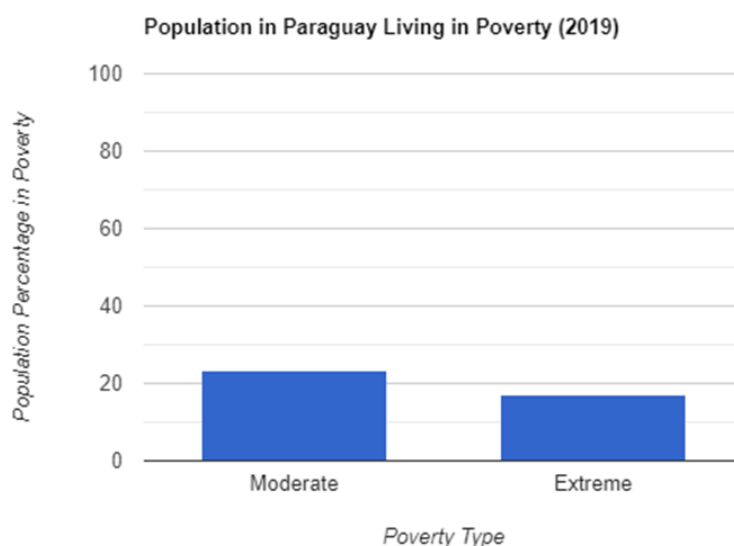
Figure 15: Population of Paraguay living in poverty in 2019 (Camacho-Guerreros, 2020).

The Cerrito Agricultural School and Hotel Cerrito are part of the entrepreneurial education and self-sustaining school programs of Fundación Paraguaya. Located in the Department of President Hayes in Cerrito, the school was originally run by the Congregation of the Brothers of La Salle, and in 2003, the school was transferred to Fundación Paraguaya. With 13 productive units, the school aims to generate the resources to both sustain the school and educate students through a "learn-by-doing" experience in the various productive units including the hotel, Iberian cheese, yogurt, *dulce de leche*, orchard, farm, pigs, dairy cows, goats, quail eggs, broiler chickens, rabbits, and tilapia (*Fundación Paraguaya*, n.d.).

The Cerrito School and Hotel are self-sustaining, products produced by the school are sold to fund the functions of the school's operations; 100% of the school's costs are covered through income and profits. The school sells their products to a variety of supermarkets, gourmet stores, hotels, and restaurants. Additionally, the Cerrito Hotel connected to the school is run by the students and offers a revenue stream, providing the students the experience of hotel operations. The school differs from traditional educational models in that, at the Cerrito Agricultural School, the students make money while learning. Instead of providing resources to the vulnerable populations, the curriculum uses the energy and resources that the young people

already possess to provide them with the knowledge and skills required to earn a living and adapt to the market (Fundación Paraguaya, n.d).

Most of the 150 students attending the Cerrito Agricultural School come from rural areas in Paraguay and have low literacy rates. The students spend half of their time in traditional classroom settings learning and the other half of their time running the variety of productive units on campus, being taught and mentored by the teachers (Maak and Stoetter, 2012). Additionally, the school strives to support both men and women and fight gender inequality, with approximately 60% of the graduates from Fundación Paraguaya's schools identifying as women (*Fundación Paraguaya*, n.d.). The Hotel Cerrito is located adjacent to the Cerrito Agricultural School, making it convenient for the students to operate the hotel. The Hotel Cerrito offers a relaxing getaway from the busy city, with single, double, and triple room options as well as meeting rooms for events and seminars (Hotel Cerrito, n.d.).

Because of the school's self-sustaining model, generating profits and revenue stream is a large asset. Therefore, creating additional sources of profit and increasing awareness about the school, hotel, and their mission is of utmost importance. By creating a self-guided tour that can be completed on-site or done virtually online, visitors can discover the Cerrito story and learn about the hotel's history, including information about the surrounding area, in both English and Spanish. The tours can also incorporate visits to the different productive units on campus and introduce the flora and fauna at the school to help promote both the school and hotel. Additionally, creating souvenirs and offering these to hotel guests and campus visitors can provide the school with another income stream, further supporting the self-sustaining model. These souvenirs can incorporate materials the school produces and provide a token for visitors to remember their experience at the hotel and school.

Appendix B: Interview Questions for Director Amalio

Declaración de consentimiento:

Somos un grupo de estudiantes que asistimos a la universidad Worcester Polytechnic Institute en Worcester, Massachussets, en los Estados Unidos. Estamos trabajando con la Fundación Paraguaya y la Escuela Cerrito para ofrecer una estadía agradable en el Hotel Cerrito. Pensamos en hacer esto con la implementación de un tour autoguiado, diseño de recuerdos y señalización en el hotel y la escuela para los huéspedes y visitantes. Queremos entrevistar al director de la escuela y a los profesores para aprender más sobre la historia y las unidades productivas del campus, y obtener ideas e información sobre recuerdos y métodos para implementar la señalización. La entrevista es completamente voluntaria, y todas las preguntas son opcionales; si no se siente cómodo respondiéndolas, no tiene que hacerlo. Las respuestas solo se usarán con su permiso. Le agradecemos su tiempo y sus respuestas para ayudarnos a avanzar en nuestro proyecto.

¿Tenemos su permiso para grabar en audio esta entrevista?
¿Tenemos su permiso para usar su información de identificación personal?

Preguntas:
1. Aquí tenemos el mapa que los estudiantes de WPI hicieron en el proyecto de erosión de 2020. ¿Puede confirmar que todo está incluido?¿Falta alguna o algún lugar relevante en el mapa? ¿Hay información que ha cambiado?
2. ¿Cuáles son los lugares del campus más efectivos para la señalización? Por ejemplo: áreas con más tráfico peatonal o cruces de caminos.
3. En su opinión, ¿en cuáles partes del campus se debe enfocar el tour autoguiado del campus?
4. ¿Cuáles materiales están disponibles en el campus para hacer carteles?
   a. ¿Qué tan duraderos con respecto al clima son los carteles que la escuela ya tiene?

      b.   ¿Podría presentarnos al carpintero Carlos Cantero?

5.   Queremos proponer recuerdos que estén hechos por los estudiantes de la Escuela Cerrito. ¿Ellos tienen la disponibilidad de hacer recuerdos con materiales de la escuela? ¿Qué materiales podríamos usar?

6.   Según su comprensión de los huéspedes del hotel, ¿qué tipos de recuerdos se venderían mejor? ¿A qué precio?

Summary of responses:

      From this interview with Director Amalio Enciso we gained valuable information on the direction of the project. We confirmed the campus layout to design a central map of the campus and discussed designs for a central map structure with a roof. We learned about important aspects of campus that should be included in the self-guided tour, and the importance of emphasizing the participation of the students in each productive unit on campus. He shared the importance of incorporating some history of the school into parts of the tour. We were also able to determine some materials available on campus to make signs and souvenirs. Additionally, we received a list of souvenir suggestions he thought would sell the best at the hotel including pens, stickers, notebooks, water bottles, and t-shirts.

Appendix C: Interview Questions for Professor Valentina

Declaración de consentimiento:

Somos un grupo de estudiantes que asistimos a la universidad Worcester Polytechnic Institute en Worcester, Massachussets, en los Estados Unidos. Estamos trabajando con la Fundación Paraguaya y la Escuela Cerrito para ofrecer una estadía agradable en el Hotel Cerrito. Pensamos en hacer esto con la implementación de un tour autoguiado, diseño de recuerdos y señalización en el hotel y la escuela para los huéspedes y visitantes. Queremos entrevistar al director de la escuela y a los profesores para aprender más sobre las demografías de los visitantes, ideas e información sobre recuerdos y métodos para implementar la señalización. La entrevista es completamente voluntaria, y todas las preguntas son opcionales; si no se siente cómodo respondiéndolas, no tiene que hacerlo. Las respuestas solo se usarán con su permiso. Le agradecemos su tiempo y sus respuestas para ayudarnos a avanzar en nuestro proyecto.

¿Tenemos su permiso para grabar en audio esta entrevista?
¿Tenemos su permiso para usar su información de identificación personal?

Preguntas:

1. ¿En su opinión, en cuáles partes del campus se debe enfocar el tour autoguiado del campus?
2. ¿Cuáles son los lugares del campus más efectivos para la señalización? Por ejemplo: áreas con más tráfico peatonal o cruces de caminos.
3. El profesor Amalio Enciso dijo que un mapa central con un techito de madera, rodeada de plantas, sería una buena manera para mostrar el mapa del campus ¿cómo se imagina un mapa central de la escuela?
4. ¿Cuáles son los datos demográficos de los visitantes que visitan la escuela?

5. Según su comprensión de los huéspedes del hotel, ¿qué tipos de recuerdos se venderían mejor? ¿A qué precio?

6. Según su experiencia profesional, ¿hay métodos que podríamos incluir en nuestro proyecto que serían beneficiosos para atraer más visitantes al Hotel Cerrito?

Summary of Responses:

From this interview with Valentina, we learned valuable insight to guide the direction of our project. We learned about important aspects of campus she thought were important to include in the self-guided tour, including the central patio, academic sector, milk plant, carpentry sector, animal production center, vegetable production center, eucalyptus, and hotel. She also shared the importance of sharing with visitors the active role students have in each unit. We discussed the design of a central map structure with a roof. Additionally, Prof. Valentina was able to share some guest demographics of the hotel: a wide range of ages varying from groups of school kids visiting campus for the day, religious groups that come to stay at the hotel annually for retreats, and families that stay for a long weekend. She also shared her opinions on souvenir offerings, relaying the importance of offering a variety of options at a range of prices.

Appendix D: Interview Questions for Professor Martina

Declaración de consentimiento:

Somos un grupo de estudiantes que asistimos a la universidad Worcester Polytechnic Institute en Worcester, Massachussets, en los Estados Unidos. Estamos trabajando con la Fundación Paraguaya y la Escuela Cerrito para ofrecer una estadía agradable en el Hotel Cerrito. Pensamos en hacer esto con la implementación de un tour autoguiado, diseño de recuerdos y señalización en el hotel y la escuela para los huéspedes y visitantes. Queremos entrevistar al director de la escuela y a los profesores para aprender más sobre las demografías de los visitantes, ideas e información sobre recuerdos y métodos para implementar la señalización. La entrevista es completamente voluntaria, y todas las preguntas son opcionales; si no se siente cómodo respondiéndolas, no tiene que hacerlo. Las respuestas solo se usarán con su permiso. Le agradecemos su tiempo y sus respuestas para ayudarnos a avanzar en nuestro proyecto.

¿Tenemos su permiso para grabar en audio esta entrevista?
¿Tenemos su permiso para usar su información de identificación personal?

Preguntas:

1. En su opinión, ¿en cuáles partes del campus se debe enfocar el tour autoguiado del campus?
2. ¿Cuáles son los lugares del campus más efectivos para la señalización? Por ejemplo: áreas con más tráfico peatonal o cruces de caminos.
3. El profesor Amalio Enciso dijo que un mapa central con un techito de madera, rodeada de plantas, sería una buena manera para mostrar el mapa del campus ¿cómo se imagina un mapa central de la escuela?
4. Queremos proponer recuerdos que estén hechos por los estudiantes de la Escuela Cerrito. ¿Ellos tienen la disponibilidad de hacer recuerdos con materiales de la escuela? ¿Qué materiales podríamos usar?

5. ¿Puede darnos una lista de los recuerdos que la escuela había vendido en el pasado, los diseños, los precios, cuáles se vendieron mejor y generaron más ingresos?

6. Se mencionó que sería una buena idea tener mensajes en los recuerdos, ¿tiene algunas ideas de mensajes que podríamos poner?

    a. Tenemos estas ideas:

        i. El modelo "aprender haciendo, vendiendo y ganando,"

        ii. "Disfrutar la tranquilidad de la naturaleza"

        iii. "Un viaje a una granja es genial para el alma"

7. ¿Cuál es la información demográfica (edad, género, estatus social, origen, lugar de residencia) de los visitantes que vienen a la escuela? O ¿Dónde podríamos obtener esta información?

    a. ¿Observó algunas tendencias entre diferentes tipos de visitantes y de los recuerdos que compraron?

8. ¿A qué precios vende los recuerdos de Qom en comparación a los precios que ofrece la comunidad de Qom?

Summary of Responses:

This interview with Prof. Martina gave us valuable insight into the direction of our project. We learned about her thoughts on the order of stops for the self-guided tour including starting at the central map we create, then proceeding to the hotel, dining room, bakery, administration, academics, dairy processing plant, general services, laundry area, animal production center, and vegetable production center. We also discussed the design of the central map structure with a roof, and she gave us the idea of using extra roof tiles they have to construct the roof of the map structure. Next, we discussed the ability of students to make hand-made artisanal souvenirs for the hotel. She relayed her concerns with students graduating every year and losing souvenir designs because of this. However, she likes the idea of involving students, especially since part of their education is learning to start a business and earn income. She gave us a list of materials available on campus including bamboo, rocks, ceramic roof tiles, and wood. She also gave us a list of traditional souvenirs we could consider designing for the hotel including baseball hats, mugs, keychains, pens, coin pouches, shirts, and water bottles. She told us which souvenirs sold best when they had souvenirs for

Fundación Paraguaya in the hotel lobby, and gave us recommended prices. We were also able to learn about guest demographics: the majority of guests are from Paraguay, coming from the city to escape to a more serene environment for a weekend.

Appendix E: Interview with Martín Burt

Declaración de consentimiento:

Somos un grupo de estudiantes que asistimos a la universidad Worcester Polytechnic Institute en Worcester, Massachussets, en los Estados Unidos. Estamos trabajando con la Fundación Paraguaya y la Escuela Cerrito para ofrecer una estadía agradable en el Hotel Cerrito. Pensamos en hacer esto con la implementación de un tour autoguiado, diseño de recuerdos y señalización en el hotel y la escuela para los huéspedes y visitantes. Queremos entrevistar personas que están familiarizadas con la Escuela Cerrito para obtener perspectivas sobre los objetivos de nuestro proyecto. La entrevista es completamente voluntaria, y todas las preguntas son opcionales; si no se siente cómodo respondiéndolas, no tiene que hacerlo. Las respuestas solo se usarán con su permiso. Le agradecemos su tiempo y sus respuestas para ayudarnos a avanzar en nuestro proyecto.

¿Tenemos su permiso para grabar en audio esta entrevista?
¿Tenemos su permiso para usar su información de identificación personal?

Preguntas:

1. ¿Cuál fue su inspiración para fundar la Fundación Paraguaya y también una escuela autosuficiente en Cerrito?
2. ¿Cómo fue la transición a ser el dueño a la Fundación Paraguaya y de la Escuela Cerrito?
3. Desde su punto de vista, ¿cuál es la historia de la Escuela Cerrito?
4. En su opinión, ¿cuál es la información más importante sobre la Escuela Cerrito que los visitantes deberían conocer?
5. ¿Cómo ha cambiado el tipo de población de los estudiantes a través de los años? ¿Qué impacto tuvo este cambio?
6. ¿Hay algo más que quisiera compartir con nuestro equipo?

Summary of Responses:

   This interview with Martín Burt provided us with useful information to include in the tour about the history of the Cerrito Agricultural School. Martín Burt gave us information about the reasons for founding Fundación Paraguaya and the transition of ownership of the school in the years before Fundación Paraguaya became the owner. He described how the school's first owners were German Fransiscan Brothers, and after 20 years, they gave the school to the La Salle Christian Brothers, whose calling was to educate. After the school entered bankruptcy under the La Salle Christian Brothers, the Brothers asked Fundación Paraguaya to take over the school and add an entrepreneurial education to the curriculum. Under Fundación Paraguaya, the Cerrito Agricultural School became self-sufficient and the school implemented a "learn by doing" entrepreneurial education to its students. Along with a brief history of the school, Martín Burt shared with us some other important things he thought were important for guests visiting the school to know, including the "learn by doing" approach and the daily activities of the students. He also suggested having student voices being included in the tour audio to give the tour a personal feeling.

Appendix F: Interview with José Luis Salomón

Declaración de consentimiento:

Somos un grupo de estudiantes que asistimos a la universidad Worcester Polytechnic Institute en Worcester, Massachussets, en los Estados Unidos. Estamos trabajando con la Fundación Paraguaya y la Escuela Cerrito para ofrecer una estadía agradable en el Hotel Cerrito. Pensamos en hacer esto con la implementación de un tour autoguiado, diseño de recuerdos y señalización en el hotel y la escuela para los huéspedes y visitantes. Queremos entrevistar personas que están familiarizadas con la Escuela Cerrito para obtener perspectivas sobre los objetivos de nuestro proyecto. La entrevista es completamente voluntaria, y todas las preguntas son opcionales; si no se siente cómodo respondiéndolas, no tiene que hacerlo. Las respuestas solo se usarán con su permiso. Le agradecemos su tiempo y sus respuestas para ayudarnos a avanzar en nuestro proyecto.

¿Tenemos su permiso para grabar en audio esta entrevista?
¿Tenemos su permiso para usar su información de identificación personal?

Preguntas:

1. ¿En qué año empezó a trabajar en la Escuela Cerrito?
2. ¿En qué año dejó de trabajar en la escuela?
3. ¿Cómo fue su experiencia siendo director de la Escuela Cerrito?
4. ¿Cómo fue la transición de los propietarios de la Escuela Cerrito cuando pasó a ser parte de la Fundación Paraguaya?
5. Durante sus años en la escuela, ¿qué cambios observó en la escuela, en los estudiantes, en los profesores, etc.?
6. Desde su punto de vista, ¿cuál es la historia de la Escuela Cerrito?
7. En su opinión, ¿cuál es la información más importante sobre la Escuela Cerrito que los visitantes deberían conocer?

8. La profesora Dorothy mencionó la idea de usar eventos para entretener a los visitantes. ¿Tiene algunas ideas de eventos que el hotel puede ofrecer para atraer más huéspedes?
    a. ¿Cómo podemos implementar estos eventos?
9. ¿Hay algo más que quisiera compartir con nuestro equipo?

Summary of Responses:

This interview with Jose Luis Salomon provided us with useful information to include in the tour about the history of the Cerrito Agricultural School. In addition to the interviews with other directors, this interview helped us to learn more about the early beginnings of the agricultural school. He also spoke on how the transitions affected the curriculum. He described how over time the school transitioned from being a more religious education to one that focused more on the theory and practice of trade services. During a part of the interview we toured campus with him where we were able to learn about some of the unique things on campus that are not well known such as the different sculptures around campus as well as some of the artwork inside of the chapel. We were also able to obtain general recommendations to implement in the school during our meeting with Jose Luis Salamon. These general recommendations included hosting events or workshops such as yoga or bike races.

Appendix G: Example Outlined Script for Students

¡Hola! Estamos en la [unidad productiva]. Me llamo [nombre] y estoy en el tercer año aquí en la Escuela Agrícola de Cerrito. Soy de [ciudad] y me gusta [actividad, data curiosa, etc]. Aquí en [unidad productiva] hacemos mucho. En un día, yo [describe lo que haces en un día, hablar sobre tu aspecto favorito]. [Aquí puedes mencionar algo que el visitante puede buscar o hacer. Por ejemplo: cuando mires dentro del galpón de gallinas, mira si puedes ver algún huevo. También, puedes mencionar algo sobre los productos. Por ejemplo: ¡No puedes irte del campus sin probar nuestro delicioso dulce de leche y nuestros quesos! Puedes adquirirlo en la recepción del hotel.]

Appendix H: Interview with Bruno Vaccotti

Declaración de consentimiento:

Somos un grupo de estudiantes que asistimos a la universidad Worcester Polytechnic Institute en Worcester, Massachussets, en los Estados Unidos. Estamos trabajando con la Fundación Paraguaya y la Escuela Cerrito para ofrecer una estadía agradable en el Hotel Cerrito. Pensamos en hacer esto con la implementación de un tour autoguiado. Queremos entrevistar personas que estén familiarizadas con la Escuela Cerrito para obtener perspectivas sobre los objetivos de nuestro proyecto. La entrevista es completamente voluntaria, y todas las preguntas son opcionales; si no se siente cómodo respondiéndolas, no tiene que hacerlo. Las respuestas solo se usarán con su permiso. Le agradecemos su tiempo y sus respuestas para ayudarnos a avanzar en nuestro proyecto.

¿Tenemos su permiso para grabar en audio esta entrevista?
¿Tenemos su permiso para usar su información de identificación personal?

Preguntas:

1. ¿De su punto de vista que hace el equipo de comunicación de Fundación Paraguaya?
2. ¿Qué opina de una aplicación para un tour auto-guiado?
    a. ¿Qué información sería importante incluir en la aplicación?
    b. ¿Tendría la capacidad de mantener esta aplicación después de nuestra partida?
3. ¿Podría la Fundación Paraguaya desarrollar una aplicación de un tour interactivo?
    a. ¿Podrían mantenerlo?
4. ¿Hay algo que el departamento de marketing quisiera hacer pero no ha podido debido al tiempo?
5. ¿Cuales recuerdos ha creado en el pasado?
6. ¿Cuál es el proceso que debemos seguir para hacer recuerdos?
    a. ¿Cómo usamos el logo de Cerrito?
7. ¿Algunos comentarios para nosotros?

Summary of responses:

  The interview with Bruno Vaccotti gave us valuable insight with what direction we should take the self-guided tour, as well as how we could develop the souvenirs. He gave us information about what the communications team at Fundación Paraguaya does and described how they are in charge of giving advice to institutions, with a commercial component and an internal component. The commercial component is for offering service products like credit and educational programs, and the internal component has a few hundred contributors. Bruno also shared his opinion on an application for a self guided tour, stating that he believed it is a good idea that has the potential to be useful considering that there are not too many options like that being used in Paraguay, and that Fundación Paraguaya has the ability to maintain the application. He then told us that he thinks an audio self guided tour would be successful, as it was something not currently being done in Paraguay. The interview then shifted focus to the souvenirs, where Bruno gave us further insight into what was sold in the past as well as how to create them. He specifically listed that they sold baskets and wide brimmed hats with the Fundación Paraguaya logo, and to create the souvenirs with the Cerrito logo, we could find it on the Fundación Paraguaya website and use it from there.

Appendix I: Visitor Surveys

Con el fin de mejorar su experiencia en el Hotel Cerrito y con el objetivo de empezar a crear y ofrecer recuerdos que sean llamativos para nuestros clientes, le solicitamos que, por favor, complete la siguiente encuesta. La encuesta es completamente voluntaria y anónima, y todas las preguntas son opcionales; si no se siente cómodo respondiéndolas, no tiene que hacerlo. Le agradecemos su tiempo y sus respuestas para ayudarnos a mejorar nuestros servicios.

1. ¿De qué lugar viene a visitarnos?
2. ¿Con quién se queda en el Hotel Cerrito?
    a. Solo.
    b. Con su familia.
    c. No aplica
    d. Otro: _____
3. ¿Por qué razón se hospeda en el Hotel Cerrito o visita el campus?
    a. Evento
    b. Vacaciones
    c. Otro: _____
4. ¿Cuáles partes de la Escuela Agrícola Cerrito le interesan?
    a. La piscina
    b. Los plantes
    c. Los animales
    d. La capilla
    e. Los quinchos con la tatakua
    f. La historia
    g. La huerta
    h. El arte
    i. Proyecto educativo innovativo de la Escuela Agrícola
    j. Otro: _____
5. ¿Qué tipo de recuerdos compra generalmente cuando está de viaje?

6. Cuando compra recuerdos, ¿qué le interesa más: el diseño, el precio, la autenticidad u otro aspecto?

7. Si el Hotel Cerrito ofreciera recuerdos, ¿los compraría?
   a. Sí
   b. No
   c. Tal vez

8.
   a. Si es sí: ¿Qué tipos de recuerdos le interesan? (imanes, llaveros, ornamentos, tarjetas postales)
   b. Si es no: ¿Por qué no compraría un recuerdo?
   c. Si es tal vez: ¿Por qué razones compraría un recuerdo?

Summary of responses:

The survey with the visitors of the Cerrito Agricultural School gave us valuable insight into the demographics of the visitors, who they were with at the hotel, why they were visiting the school or hotel, what parts of campus interested them the most, what type of souvenirs they would usually buy when traveling, what aspects they look for in souvenirs, if the Hotel offered souvenirs would the visitors buy them, and what kind of souvenirs would interest them. The survey first gave insight that the majority of visitors of the Cerrito Agricultural school are native to Paraguay, as every response was from a different region of Paraguay. The survey also gave us insight that the majority of visitors were with their family and that they were visiting on a vacation. The survey then gave us insight on what parts of the school the visitors find interesting, with a majority of answers going to the pool, the animals, and the innovative educational project of the school. The survey then moves on to souvenirs, which includes what types of souvenirs the visitors usually buy on a trip. The survey then gave us insight into which aspect of souvenirs is most important to the visitors when buying them, with a majority of answers being the authenticity as well as the price of the souvenir. The survey then prompted the question of if Hotel Cerrito offered souvenirs, would the visitors buy them, and every response was yes. The final question after that was what types of souvenirs interest the visitors, and the answers ranged from keychains, magnets, t-shirts, mugs, postcards, and artisanal souvenirs.

Appendix J: Student Surveys

Somos un grupo de estudiantes que asistimos a la universidad Worcester Polytechnic Institute en Worcester, Massachussets, en los Estados Unidos. Estamos trabajando con la Fundación Paraguaya para ofrecer una estadía agradable en el Hotel Cerrito. Pensamos en hacer esto con la implementación de recuerdos para los huéspedes. Estamos encuestando a los estudiantes de la Escuela Agrícola Cerrito para aprender más sobre qué recuerdos pueden crear en la escuela. La encuesta es completamente voluntaria, y todas las preguntas son opcionales; si no se siente cómodo respondiéndolas, no tiene que hacerlo. Las respuestas solo se usarán con su permiso. Le agradecemos su tiempo y sus respuestas para ayudarnos a avanzar en nuestro proyecto.

1. ¿Cuáles materiales están disponibles en el campus para hacer recuerdos?
2. ¿Le gustaría participar en la elaboración de recuerdos que el Hotel Cerrito pueda ofrecerles a sus clientes?
3. ¿Qué tipos de recuerdos piensa que se venderían mejor?

Summary of the responses:

From the student survey we were able to obtain valuable information on the materials available on campus, including an abundance of wood, and ideas for souvenirs, including keychains, trinkets made from recycled materials, gift boxes, and personalized mugs and water bottles. This helped to better inform what artisanal souvenir ideas could be offered. We also received responses on what souvenirs they thought would sell best. It was useful to receive this information from the student perspective because it helped us to formulate an initial list of traditional souvenir offerings. We also discovered that most students would be willing to help out in the creation of artisanal souvenirs.

Appendix K: Guest Focus Group Protocol

Guest focus groups were conducted by three team members. One member was at the front of the room proctoring the group. The second member was seated among the guest participants and was part of conversations, elaborating on prompts from the proctor and encouraging guest participation. The third member did not provide any feedback and took notes of the meeting.

Proctor responsibilities:
1. Presented the product being evaluated.
2. Led the conversation and prompted guests with questions.
3. Asked follow-up questions to guests.

Audience member responsibilities:
1. Elaborated proctor prompts.
2. Acted as an audience member of the group.
3. Promoted participation from all guests.

Secretary responsibilities:
1. Took meeting minutes on the focus groups, writing down questions and responses.
2. Did not participate in the discussions to ensure that all feedback was documented.

After completing the focus group, guests were given a survey to provide feedback on the focus group protocol and anything they chose not to say during the meeting. This survey is outlined below.

Gracias por su participación en nuestro grupo focal. Sus respuestas son necesarias en el desarrollo de nuestro proyecto para enriquecer su estadía en el Hotel Cerrito. Esta encuesta es completamente voluntaria y anónima, y todas las preguntas son opcionales; si no se siente cómodo respondiéndolas, no tiene que hacerlo. Le agradecemos su tiempo y sus respuestas para ayudarnos a mejorar nuestros servicios.

1. ¿De dónde viene a visitarnos?
2. ¿Siente que podría compartir todas sus ideas y comentarios? ¿Por qué sí o por qué no?
3. ¿Se siente cómodo para participar durante la duración del grupo focal? ¿Por qué sí o por qué no?
1. ¿Tiene comentarios adicionales sobre el grupo focal?
2. ¿Hay algo más que quisiera compartir con nuestro equipo para mejorar la estadía en el Hotel Cerrito?

Appendix L: Guest Souvenir Focus Group

Somos un grupo de estudiantes que asistimos al Instituto Politécnico de Worcester en Worcester, Massachussets, en los Estados Unidos. Estamos trabajando con la Fundación Paraguaya para ofrecer una estadía agradable en el Hotel Cerrito. Pensamos en hacer esto con la implementación de recuerdos que los huéspedes puedan comprar. Estamos organizando grupos focales con los huéspedes y visitantes del Hotel Cerrito para aprender más sobre el mejor diseño para los recuerdos. Los grupos focales son completamente voluntarios, y todas las preguntas son opcionales; si no se siente cómodo respondiéndolas, no tiene que hacerlo. No usaremos sus nombres con las respuestas en nuestro proyecto. Le agradecemos su tiempo y sus respuestas para ayudarnos a avanzar en nuestro proyecto.

¿Tenemos su permiso para grabar en audio este grupo focal?

1. ¿Cuáles diseños les gustan? ¿Por qué?
    a. ¿Le gustan los colores?
2. ¿Cuáles diseños no les gustan? ¿Por qué?
3. ¿Compraría algunos de estos recuerdos? ¿Cuáles?
    a. ¿A qué precio los compraría?
4. ¿Tiene otras ideas de diseños para recuerdos del Hotel?

Summary of responses:

From the focus group with the Fundacion Paraguaya employees, we were able to receive feedback on souvenir designs as well as prices. We learned that one of their favorite designs was the thermos, and it should be priced at around PYG 80,000 and be made with good quality materials. Additionally, we received feedback on the design for the cover of the notebook and mug with suggestions to change the font and designs of the images. The feedback we received on each design helped us to better guide the direction that we wanted our souvenir designs to go. During one part of the dialogue the participants gave us design suggestions so that we could better justify the potential prices of our souvenir's. In addition to that information, we were able to receive feedback on our initial artisanal souvenir ideas. The dialogue between the participants allowed for us to get a variety of data on what the different participants would

have liked to have seen offered. Overall, the participants liked the ideas for the artisanal souvenirs and supported the use of recycled materials from around campus to create the designs.

Appendix M: Observational Study Protocol

Durante la realización de este proyecto, a los miembros del equipo se alojaron en las cabañas en el Hotel Cerrito. Durante la primera semana del proyecto, los miembros del equipo trabajaron en estrecha colaboración con los estudiantes a lo largo de sus tareas diarias. Durante las primeras dos semanas, el equipo observó y documentó la experiencia de un huésped en el Hotel Cerrito y las interacciones entre huéspedes y estudiantes con la siguiente guía. El equipo registró cuántas veces observaron los siguientes comportamientos durante el estudio.

	Excelente	Bien	Necesita mejorar	Otros comentarios
Registro de huéspedes	Los huéspedes son recibidos con presentaciones de los estudiantes. Se informó a los huéspedes sobre las diferentes actividades en la escuela y se les preguntó si tenían alguna pregunta.	Los huéspedes son recibidos, pero sin la presentación de los estudiantes. Se proporcionó información mínima sobre las actividades locales. Se respondieron las preguntas de los huéspedes.	Los huéspedes son recibidos, pero hay muy poca conversación por parte del estudiante. No se informa a los huéspedes sobre las actividades locales.	
Habitación de los huéspedes	Las habitaciones de los huéspedes contienen medios informativos que enumeran información sobre la Escuela Cerrito, la Fundación Paraguaya, y restaurantes y otros servicios y actividades locales. Las	Las habitaciones de los huéspedes estaban limpias y presentables, pero no contenían ninguna información sobre la Escuela Cerrito, la Fundación Paraguaya y sobre restaurantes locales, otras	Las habitaciones de los huéspedes estaban desordenadas y no contenían ninguna información sobre la Escuela Cerrito, la Fundación Paraguaya o sobre restaurantes locales, otras comodidades o	

	habitaciones de los huéspedes están limpias y se ven presentables.	comodidades o actividades.	actividades.	
Restaurante	Los estudiantes saludaron a los huéspedes en sus mesas, presentándose a sí mismo. Los estudiantes compartieron información sobre el origen de los alimentos y la misión de la escuela.	Los estudiantes saludaron a los huéspedes, pero proporcionaron poca información personal, el origen de los alimentos o la misión de la escuela.	Los estudiantes tenían poca comunicación con los huéspedes. No se dio ninguna presentación.	
Interacción entre los estudiantes y los huéspedes	Los huéspedes tienen contacto con los estudiantes fuera del contacto que tienen con el personal del hotel y del restaurante.	Los huéspedes rara vez tienen contacto con los estudiantes fuera del contacto que tienen con el personal del hotel y del restaurante.	Los huéspedes nunca tienen contacto con los estudiantes fuera del contacto que tienen con el personal del hotel y del restaurante.	
Tour guiado	Los guías llevan el grupo a todas las partes claves del campus, entretienen a los visitantes, preguntan si hay preguntas, responden a las preguntas con respuestas completas con mucha información y hablan en voz alta para que	Los guías llevan el grupo a la mayoría de las partes claves del campus, responden a las preguntas pero no preguntan si hay preguntas y a veces los visitantes no pueden oír.	Los guías saltan algunos lugares claves del campus, responden a las preguntas brevemente y es difícil oír la guía.	

	todos puedan oír.			

Figure 16: Observational Study Rubric

Summary of results:

Through this observational study, the team analyzed the visitor and guest experience through guest registration, guest rooms, the hotel restaurant, and the guided tour. From this study the team found several areas where the Hotel Cerrito could improve their guest and visitor experience. A list of these results can be found in Appendix S.

Appendix N: Interview Questions for Dorothy Burt

Declaración de consentimiento:

Somos un grupo de estudiantes que asistimos a la universidad Worcester Polytechnic Institute en Worcester, Massachussets, en los Estados Unidos. Estamos trabajando con la Fundación Paraguaya y la Escuela Cerrito para ofrecer una estadía agradable en el Hotel Cerrito. Pensamos en hacer esto con la implementación de un tour autoguiado, diseño de recuerdos y señalización en el hotel y la escuela para los huéspedes y visitantes. Queremos entrevistar personas que son familiarizadas con la Escuela Cerrito para obtener perspectivas sobre los objetivos de nuestro proyecto. La entrevista es completamente voluntaria, y todas las preguntas son opcionales; si no se siente cómodo respondiéndolas, no tiene que hacerlo. Las respuestas solo se usarán con su permiso. Le agradecemos su tiempo y sus respuestas para ayudarnos a avanzar en nuestro proyecto.

¿Tenemos su permiso para grabar en audio esta entrevista?
¿Tenemos su permiso para usar su información de identificación personal?

Preguntas:

1. ¿Usted ha tenido algunas experiencias memorables en el Hotel y la Escuela Cerrito que otros visitantes deberían tener también?
2. ¿Qué tipos de recuerdos cree que se venderían mejor?
3. ¿Qué recomendaciones tiene para el tour autoguiado?
4. ¿Qué cosas podríamos agregar al mapa para que sea más fácil de entender y leer? Por ejemplo un compás, fecha, orientación, cuadrícula, escala, título, leyenda?
5. ¿Hay algo más que quiera compartir con nosotros?

Summary of responses:

From this interview, we obtained a plethora of information concerning ideas to enrich the experience around campus. This included revamping the dining experience and how the

students are trained in this area. Prof. Dorothy suggested that the students introduce themselves and where they are from before serving so as to create a more personal dining experience. Regarding the general aesthetics of campus, it was recommended that we plant more fauna around some of the more bare parts of campus. One of the recommended plants was the Lo kai aina plant which is a low maintenance plant that forms a canopy over the areas where it is planted. The idea behind this was that it would help beautify the campus while also being somewhat of a local attraction. Another suggestion was that the local bamboo could be used to create a wall that would block some of the less appealing areas of campus, such as the garbage disposal area. During this interview, we also learned unique information to include in the self-guided tour. One of these is how the school sells cut trees from the eucalyptus grove to neighboring businesses. Prof. Dorothy also spoke about how she would imagine an ideal tour to be. This included ideas such as the duration of the tour and new signage.

Appendix O: Self-Guided Tour Content

1. **Mapa Central: historia breve de la Escuela Cerrito**
   - Bienvenido a la Escuela Agrícola de Cerrito, un lugar mágico en el Chaco Paraguayo, donde jóvenes de todo el país aprenden a producir, vender y ganar. Soy el ingeniero Amalio Enciso y soy el director de la escuela.

   - La Escuela fue fundada por un grupo de hermanos Franciscanos alemanes en 1960. Veinte años después, los hermanos Franciscanos decidieron enfocarse más en vivir y compartir con los pobres, y donaron la escuela a los Hermanos Cristianos de La Salle, cuya misión es la de educar.

   - Los Hermanos de La Salle administraron la escuela por otros 20 años, pero cuando hubo una crisis financiera en el año 2000, el gobierno paraguayo no pudo continuar pagando los salarios y la escuela tuvo problemas financieros.

   - Mientras tanto, los Hermanos fueron dándose cuenta de que el currículo de educación técnica vocacional en agricultura que ofrecían estaba "incompleto" porque le faltaban los componentes de educación financiera y emprendedora.

   - En el 2002, los Hermanos de la Salle se acercaron a la Fundación Paraguaya y ofrecieron la escuela en donación, con el compromiso de que siguiera con el currículo de técnica vocacional en agricultura pero que agregara educación financiera y emprendedora.

   - La Fundación Paraguaya tomó posesión de la escuela en 2003, y elaboró un Plan de Negocios Educativo-Productivo para lograr tres objetivos:

     - cien por ciento de empleabilidad para los graduados
     - un currículo cien por ciento enfocado hacia el mercado
     - una institución cien por ciento autosuficiente, sin recursos del estado.

   - La escuela logró autosuficiencia financiera en el año 2007 con la cual se cubre cien por ciento del presupuesto operativo y 40 salarios. No recibe aportes del gobierno. De esta manera, la Escuela Agrícola Cerrito ha servido de inspiración para muchas escuelas que quieren volverse autosuficientes.

   - Nuestra próxima parada es el hotel.

2. **Hotel**
   - ¡Hola! Estamos en el Hotel. Me llamo Gabriela Vera y estoy en el tercer año aquí en la Escuela Agrícola de Cerrito. Soy de Capiatá del departamento Central. Mi ciudad es famosa por sus mitos y leyendas.

- En la época de los Franciscanos, el edificio que ahora es el hotel era el dormitorio de los estudiantes. Luego, se convirtió en una casa de retiro espiritual. Desde el año 2005, se convierte en un hotel rural abierto a todo el público.

- Hoy, el hotel es un centro de formación y práctica de los estudiantes para la hotelería y el turismo y representa el 60% de los ingresos de la escuela.

- Hay 23 habitaciones dentro del hotel con opción de habitaciones grupales, matrimoniales, singles, dobles, o triples, algunos con baño privado. También hay 5 cabañas, equipadas con cocinas y baños. La capacidad máxima es de 250 personas.

- El hotel ofrece varios servicios: wifi en cada habitación, una piscina, quinchos, servicio de restaurante, cáterin y un tour guiado. El hotel también tiene espacio para eventos especiales como celebraciones de quinceañeras y bodas, y canchas para practicar deportes.

- Aquí en el hotel, los estudiantes hacemos todo lo que es necesario para ofrecer una estadía agradable a nuestros huéspedes. En un día típico, por ejemplo, yo recibo a visitantes, limpio cuartos, y aprendo a servir comidas en el restaurante del hotel. Mi parte favorita de práctica en el hotel es conocer a personas de todo el mundo que vienen a visitar nuestra escuela!

- Nuestra próxima parada es el comedor sigue el camino hasta llegar al puesto número 3.

3. **Comedor**
   - ¡Hola otra vez! Soy Gabriela Vera de nuevo. Ahora estamos enfrente del comedor.

   - Como parte del hotel, el comedor sirve como un centro de capacitación de práctica en atención al cliente para los estudiantes. El comedor abre desde las 7 de la mañana hasta las 21 horas, y ofrece desayuno, media mañana, almuerzo, merienda, y la cena. Hay 2 salones con una capacidad para aproximadamente 200 personas.

   - Una gran parte de la comida que se sirve en el comedor viene del centro de producción animal y vegetal, y la planta láctea de la escuela. Se puede hacer reservaciones para comer en la recepción del hotel.

- En el comedor, los alumnos aprendemos cómo organizar bufés y cómo recibir, atender y servir a comensales. Forma parte de nuestra preparación para recibir un bachillerato en turismo rural.

- La próxima parada en nuestro tour es la capilla, que queda directamente en frente de la zona del comedor, donde se encuentra el poste de madera número 4.

4. **La Capilla**
   - ¡Hola! Estamos en la capilla. Me llamo Joaquín y estoy en el tercer año aquí en la Escuela Cerrito. Soy de Mariano Roque Alonso del departamento Central.

   - La capilla fue construida durante la época de los Franciscanos, y sirvió como un lugar de culto religioso abierto al público durante las épocas de los hermanos Franciscanos y la Salle. Desde que la Fundación Paraguaya se hizo cargo de la escuela en 2003, se ha seguido usando la capilla para el culto religioso, pero también para otros usos que benefician a los alumnos y la comunidad. Dentro de la capilla, todavía hay arte que los Franciscanos trajeron desde Alemania como las estaciones de la Cruz y estatuas. Hoy día, la capilla sirve como un espacio para eventos internos con los estudiantes, además de visitantes a la escuela y sólo se celebra misa en ocasiones especiales.

   - Ahora podemos proceder hacia el gran Patio Central, ubicado en frente del edificio de dos pisos, justo donde está el poste número 5.

5. **Patio Central**
   - ¡Hola! Me llamo Marcos y ahora estamos en el Patio Central. Estoy en el segundo año en la Escuela Cerrito y soy de la ciudad de Luque del departamento Central. Mi ciudad y departamento es famoso por ser la ciudad de la música, la artesanía, y la joyería.

   - Aquí en el patio central, los alumnos tienen un espacio para compartir en su tiempo libre. A mano izquierda se encuentra el comedor de los alumnos. Al lado del comedor, tenemos una sala de televisión que los alumnos pueden utilizar en sus tiempos libres. Detrás del comedor se encuentra el dormitorio de los varones.

   - En el edificio de dos pisos en el centro, en la planta baja del edificio, se encuentra la administración y la dirección general de la escuela, y en la planta alta están las habitaciones de algunos profesores.

- A mano derecha, se encuentra el dormitorio de las estudiantes mujeres. El edificio pequeño a la derecha es la Cooperativa Estudiantil, un espacio que se brinda a los alumnos de tercer año para la venta de productos de uso personal para recaudar fondos para sus propios proyectos. La cooperativa sirve también como un ejercicio en emprendedurismo para los alumnos.

- Al lado de la capilla hay una campana que utilizamos como un reloj. La campana se toca en los horarios de levantada, recesos, para culminar las actividades del día y también para las actividades generales.

- ¡A mí me encanta sentarme en el Patio Central con amigos a tomar un rico tereré!

- La próxima parada es el Sector Académico que está a la izquierda cuando se mira la capilla. Sigue los puestos con flecha para llegar al puesto número 6.

6. **Sector Académico**
   - ¡Hola, soy Joaquín de nuevo! Ahora, estamos en el Sector Académico.

   - Aquí se encuentran las aulas de clase. El método de educación de la Escuela Agrícola Cerrito es único; Estamos divididos en dos grupos: Un grupo lleva a cabo tareas en el campo - que llamamos "aprender haciendo" - y el otro grupo toma clases en las aulas. Cada semana, los grupos se turnan, así todos tenemos la oportunidad de aprender al aire libre, y también en el aula.

   - Tenemos 260 días de clase por año. Cada día, el horario se inicia a las 5:45 de la mañana y se culmina a las 10:00 de la noche. Normalmente, un día transcurre entre tareas de limpieza, trabajos prácticos, clases teóricas, deportes, descanso y entretenimiento. Los fines de semana, no tenemos clases, y podemos salir de la escuela a visitar a nuestros familiares. Sin embargo, por la naturaleza agropecuaria de la escuela, algunos estudiantes deben quedarse en el campus los fines de semana para cuidar a los animales o regar los cultivos, y nos turnamos para dichas tareas.

   - La escuela ofrece dos títulos aprobados por el Ministerio de Educación: Bachillerato Técnico Agropecuario, y Bachillerato en Turismo Rural. Desde 2003, la Escuela Agrícola Cerrito ha graduado más de 700 jóvenes, que hoy día son profesionales y emprendedores en todo el país, cuyas carreras honran a la institución.

- Mi clase favorita es la clase de química con la Profesora Lorena Llano y cuando me gradúe, quisiera ser ingeniero.

- Ahora vamos a ir a los Chacinados. Puede seguir el camino y los puestos con flechas para llegar al puesto número 7.

7. **Chacinados**
   - ¡Hola! Me llamo Tadeo y ahora estamos visitando el edificio donde se elaboran los Chacinados. Estoy cursando el segundo año aquí en la Escuela Cerrito y soy de la ciudad de Filadelfia del departamento Boquerón. Mi ciudad y departamento es orgullosa por ser multicultural.

   - Este edificio es el de la antigua planta láctea. La idea de introducir chacinados como un producto de la escuela fue del Señor Ricardo Negrete, el encargado de la Planta Láctea. Sugirió la idea, y empezamos a experimentar con chacinados a finales del año 2022. La idea es que los chacinados son un complemento perfecto para servir con quesos, así que nuestros consumidores pueden adquirir tanto quesos como chacinados de nosotros.

   - La implementación de esta unidad comenzó en el año 2023, con la elaboración de chacinados de cerdo. En la actualidad, no utilizamos carne de cerdo que la escuela produce, pero el siguiente paso será utilizar cerdo producido por nosotros mismos en el campus de la escuela.

   - Cómo en todas las unidades de producción, los alumnos participamos activamente en la elaboración de los chacinados.

   - La próxima parada es Servicios Generales. Puede seguir adelante un poco más en el camino hasta el puesto número 8.

8. **Servicios Generales**
   - ¡Hola, soy Marcos de nuevo! Ahora, a su izquierda, detrás de la reja, se encuentra Servicios Generales. Aquí, trabajamos en la reparación de artículos, y nos organizamos para llevar a cabo tareas de mantenimiento por todo el campus.

   - Frente a usted se encuentra la carpintería, dónde los alumnos trabajamos con el carpintero para reparar artículos que se rompan, y elaboramos artículos nuevos de madera para la escuela y el hotel.

- A su derecha está la lavandería del hotel dónde, bajo la supervisión de un instructor, aprendemos cómo implementar un servicio de lavandería para un hotel, como parte de nuestra preparación para un título en turismo rural. Los alumnos asistimos en el lavado, secado, planchado y doblado de ropa, sábanas y toallas para el hotel.

- Ahora, mientras seguimos el camino hacia la siguiente parada en el Centro de Producción Animal, fíjese en el hermoso tacuaral que está a su derecha.

- Puede seguir el camino y los puestos con flechas para llegar a la parada número 9.

9. **Centro de Producción Animal**
    - ¡Hola! Soy Tadeo de nuevo. Ahora, estamos en el Centro de Producción Animal, uno de mis lugares favoritos en el campus.

    - Aquí producimos leche de vaca, leche de cabra, pollo, huevos de gallina y de codorniz, pescado, y miel de abeja.

    - Ordeñamos las vacas y las cabras dos veces al día. Cada vaca produce un promedio de 20 litros de leche al día y cada cabra lechera produce alrededor de 2 litros de leche diariamente. Usamos la leche de las vacas y las cabras en la planta láctea para producir nuestros ricos quesos y dulce de leche.

    - Cada hembra de los cerdos tiene que tener 2 camadas por año, y en cada camada, nacen alrededor de 12 lechones.

    - La escuela consume aproximadamente 30% de los productos que produce el Centro de Producción Animal. El resto lo vendemos puerta a puerta en la comunidad alrededor de la escuela, en ferias de productores, y en restaurantes y supermercados.

    - Los estudiantes hacemos todo lo que es necesario para cuidar a los animales. En un día típico, por ejemplo, aprendemos sobre la cría y engorde de los animales de granja, participamos en los partos y sanitizaciones de los mismos. De ida a la siguiente parada del tour - la nueva planta láctea, usted puede visitar todos los animales del Centro de Producción Animal.

    - La próxima parada es la nueva planta láctea. Puede seguir el camino y los puestos para llegar a la parada número 10.

10. Planta Láctea

- ¡Hola! Ahora estamos en la nueva planta láctea. Me llamo Gabriela Medina y estoy en el segundo año. Soy de la ciudad de San Lorenzo del departamento central. Mi ciudad es conocida por poseer la prestigiosa Universidad Nacional de Asunción.

- Este edificio fue construido en el año 2023 con el objetivo de aumentar la capacidad de producción de queso de la escuela.

- Aquí en la planta láctea, hacemos nuestro emblemático queso ibérico, yogur, y el dulce de leche, usando sólo la leche que la escuela produce.

- Hacemos nuestro famoso queso ibérico con una mezcla de leche de cabra y leche de vaca, y con la planta nueva, tenemos la capacidad de producir más de 100 kilos de queso a la semana. El queso ibérico requiere 9 meses de maduración. Hacemos yogur y dulce de leche cada quince días, usando la leche de vaca. Nuestro producto más popular es el queso ibérico.

- En la planta láctea anterior, solo teníamos la capacidad de procesar 500 litros de leche a la vez, pero con esta nueva planta tenemos la capacidad de procesar 1,500 litros de leche a la vez.

- Los estudiantes participamos en todos los pasos para producir los productos de la planta láctea. En una semana típica, por ejemplo, recibimos la leche del Centro de Producción Animal, refrigeramos para luego utilizar en la elaboración de los diferentes productos lácteos.

- ¡Usted puede adquirir todos nuestros deliciosos productos de la planta láctea en la recepción del hotel!

- Ahora vamos al Centro de Producción Vegetal. Puede seguir el camino y los puestos para llegar a la parada 11.

11. Centro de Producción Vegetal

- ¡Hola! Estamos en el Centro de Producción Vegetal. Me llamo Camila y estoy en el segundo año aquí en la Escuela Cerrito. Soy de la ciudad de Repatriación en el departamento de Caaguazú, capital de madera. En nuestra ciudad de Repatriación nos sentimos orgullosos de nuestra producción de caña de azúcar, yerba mate y la producción hortícola.

- En la unidad del Centro de Producción Vegetal, cultivamos 22 especies de plantas durante el año, incluyendo tomates, locote, lechuga, espinaca, repollo, pepino, ají picante y más. Podemos cultivar todas estas plantas usando nuestro vivero y semillero.

- Aquí, trabajamos exclusivamente con la producción orgánica, sin ningún producto químico. Elaboramos abono para nuestra huerta y vivero con materia orgánica generada dentro de la escuela, y no compramos ningún insumos fuera de la escuela. Producimos suficiente abono para vender lo que no necesitamos usar.

- Los estudiantes, con nuestros profesores, llevamos a cabo todas las tareas necesarias para tener una buena producción. En una semana típica, por ejemplo, regamos los plantines, cosechamos los vegetales ya listos y los trasplantamos. Mi aspecto favorito en el Centro de Producción Vegetal es cosechar los vegetales ya listos.

- La próxima parada es el eucaliptal. Puede seguir el camino y los puestos para llegar a la parada 12.

12. El Eucaliptal
- ¡Hola, soy Gabriela Medina de nuevo! Ahora, estamos en el eucaliptal.

- Antes, esta área de la escuela estaba plantada con la caña de azúcar que vendíamos a una planta procesadora de azúcar en Benjamín Aceval. En el año 2015, sin embargo, la fábrica dejó de funcionar, y empezamos a estudiar otros usos para esta zona.

- Luego de un análisis, optamos por implementar el cultivo del eucalipto para poder comercializar la leña. Tenemos 37 hectáreas de plantaciones de eucalipto en el campus, y estamos registrados en el Instituto Forestal Nacional de Paraguay. Nuestro producto final será madera de excelente calidad, y desde ahora, estamos comercializando la leña de los eucaliptos.

- Para llegar a la última parada de nuestro tour, usted puede retornar sobre el camino por el que vino, hasta entrar a la zona de la piscina del hotel, que quedará a su derecha.

13. Piscina & quincho: flora y fauna del campus

- ¡Hola! Le saluda Camila una vez más. Ahora, estamos en el área de la piscina y los quinchos.

- Originalmente, las estructuras de los dos quinchos eran gallineros. Luego, cuando mudamos las gallinas al Centro de Producción Animal, se reacondicionaron los galpones para que fueran quinchos. Los quinchos son un espacio al aire libre para las familias y grupos que quieran disfrutar del aire libre y el espacio verde.

- El hotel cuenta también con una piscina para los huéspedes. La piscina tiene capacidad para 40 personas y puede usarse desde las 9 de la mañana hasta las 8 de la noche todos los días.

- Hay mucha flora y fauna alrededor del campus que nuestras visitas pueden disfrutar. Por ejemplo, tenemos una familia de 15 monos que viven libremente en su hábitat. Se alimentan de tacuara, flores, y frutos de pino y les gusta pasar tiempo en los árboles en la zona de los quinchos. Se suele verlos por la mañana, especialmente en la época cuando hay frutos de pino.

- También se puede ver muchos pájaros en nuestro campus, incluyendo los tucanes, papagayos azules, garzas, kurukau y aramides ypecaha. En el verano, hay muchas iguanas en el campus.

- ¡Si quiere, puede caminar por el campus para ver cuáles animales puede encontrar!

- Esta es la última parada y así concluimos nuestro tour por la Escuela Agrícola Cerrito. Esperamos que lo haya disfrutado, y que haya aprendido algo nuevo sobre este lugar tan único. Puede tomar el sendero de regreso a la recepción del hotel ahora donde puede comprar una minuta o bebida, o algunos de nuestros deliciosos productos. ¡Que tenga un excelente día!
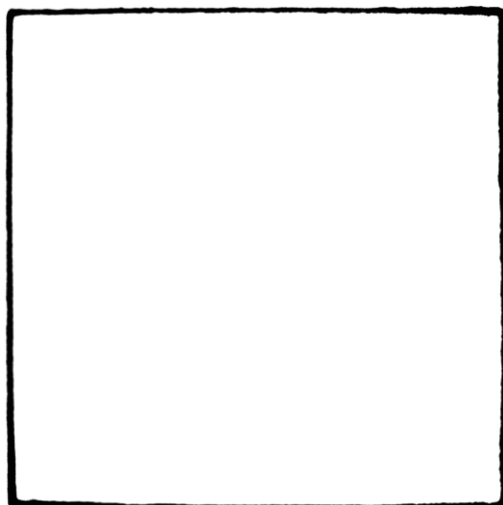
Appendix P: Instruction sheet for the self-guided tour

Hotel Cerrito

Tour Autoguiado del Hotel y Escuela Cerrito

Descargar para IOS   Descargar para Android

Instrucciones: Con la cámara de tu celular, escanear el código QR para descargar la aplicación del tour autoguiado, o buscar **Tour Hotel y Escuela Cerrito** en el App Store o Google Play Store para descargar la aplicación.

Este tour tiene dos opciones: escuchar las grabaciones con la descripción de cada parada, para lo cual necesitarías unos audífonos, o leer los textos con las descripciones. Puedes elegir la opción que más te guste, o usar las dos.

El tour empieza en el mapa central que está ubicado afuera de la recepción del hotel. Después seguir los postes de madera con números consecutivos para llegar a las siguientes paradas. Puedes hacerlo en el orden recomendado, siguiendo los números, o en el orden que prefieras. El mapa central se encuentra también dentro de la aplicación, para ayudarte a navegar el campus y ver dónde se encuentra cada parada, indicada en el mapa con un número.

El tour permite hacer un recorrido por todo el campus, y dura unos 45 minutos a una hora. ¡Te recomendamos usar zapatos cerrados para caminar, además de repelente y un sombrero si hay sol! ¡Esperemos que disfrutes tu visita!!

Appendix Q: Maintenance and Suggestions for the Application

Maintenance

- The application is published under Fundación Paraguaya, giving them access to maintain and update the application.
- Fundación Paraguaya has access to all source code of the application through a Github Repository,
- All audio and images go to the assets folder as there is no database.
- The title, image files, and audio files for the tour can be changed within the specific stops function, through the variables title, audio path, and image path.
- The descriptions can be added and changed in Descriptions.js, as a new string value.
- New stops can be added to the application through creating a new function for the stop and following the template of the other stop functions, adding a new description to Descriptions.js, and adding the stop to MyNav.js.
- All audio functionality can be found in GeneralLugar.js, with the constants for PlayAudio, PauseAudio, RestartAudio, and LoadAudio.

Suggestions

- Update the self-guided tour app to include an audio slider.
- Update the self-guided tour app to include an interactive map.
- Update the self-guided tour to offer more languages
- Revise the user interface of the application to make it more aesthetically pleasing.