

Personal Project Report

Criterion A

Inspiration and learning goal

Haiti is known for massive natural disasters that occur every year. Every time, large populations of Haitian suffers from hurricanes, droughts, flooding, earthquake and landslides. Due to this, more than 50% of inhabitants do not have access to private bathrooms. The side effects due to the lack of toilet is substantial especially for female and children. With limited access to toilets, a nationwide sewage system has been hard to implement and sustain. As a result, the spread of water-borne illnesses like cholera and diarrhea are concerned. Human waste contains numerous germs that can cause sickness and can survive for a long period of time, especially in liquid. The impact of lack of sanitation is also linked to an increase in sexual abuse cases. With limited access to toilets, most people are forced to use open defecation or shared community toilets. Lack of toilet is both increasing the risk of health effects and women and girls being raped. (Girault)

Goal and personal interest

A learning goal I have established for this project is to understand the need for toilets in Haiti and explore the mechanisms used in different types of Japanese emergency portable toilets. This project is based on my personal interest. In 2011, I experienced Tohoku earthquake and accompanied tsunami. For about next 1 week, I could not use the toilet at my house. My family and I were saved by a portable toilet. Portable toilet is widely used in Japan after earthquake which also had a substantial positive impact on the 2017 Northern Kyushu floods when most of toilets were damaged ("豪雨や台風で自宅が浸水、トイレが使えない あなたはどうしますか【前編】"). Last academic year, in individual society class, I researched natural disaster migration due to droughts, floods, earthquake, and tsunami in Haiti. One of the largest factors that leading Haitian to emigrate is lack of sanitation due to natural disasters. I found similarities among lack of sanitation in Japan during the natural disaster, and lack of sanitation in Haiti also due to natural disasters accompanied poverty. However, the differences is that lack of sanitation in Japan is a temporary phenomenon while lack of sanitation in Haiti is a chronic problem.

So at the brainstorming stage of my project, I was more interested in topic resonated with earthquakes since I am afraid of Nankai Trough Earthquake which is predicted to occur in the next 30 years in Japan. I originally wanted to learn the preparation for the Nankai Trough Earthquake and accompanied tsunami. It flashed upon me that a portable toilet could be utilized to increase accessibility of toilet in a developing country as it did in the 2017 Northern Kyushu floods. I used to travel every holiday, in each destination, the toilet systems were vastly different compared to places I lived in the past. For example, I found squat toilet unique when I stayed at a private home in Iran 8 years ago. Referring to the research above, there are some countries where only 28% of the population have access to private bathrooms in Haiti (World Bank Group). However, I never traveled to any of the countries without the appropriate toilet facility which highlights the importance for me to understand the need for toilet in some countries and learn mechanisms used in different types of portable toilet to resolve this issue. Therefore, my learning goal is; to understand the need for toilets in Haiti and explore the mechanism used in different types of Japanese emergency portable toilets. (Japanese emergency portable toilets are very advanced since there are many natural disasters in Japan and emergency toilets are always demanded).

Planning

My intended product is to design and create a model of a reusable portable toilet. I have developed a success criteria that highlights the main elements I wanted to include in my final product.

Table 1: My success criteria

Genetic areas	Lowering expectation	Meeting expectation	Exceeding expectation	How to determine if the product meets the criteria?
Function	I. The portable toilet decomposes or <u>flush</u> <u>waste</u> without water facility.	I. The portable toilet decomposes and <u>flush</u> <u>waste</u> without water facility.	I. The portable toilet decomposes and <u>flush</u> <u>waste</u> using a tank attached to the toilet.	The portable toilet uses mechanisms from either: <ul style="list-style-type: none"> - Composting toilet - Dry toilet (<u>Simizu</u>) - Batch composting toilet - Sato toilet (Burton et al.)
	II. The portable toilet can be cleaned using water and detergent.	II. The portable toilet is effective in its function of providing clean toilets for Haitian.	II. The portable toilet is effective in its function maintaining hygiene conditions including a function to prevent the outbreak of flies and maggots.	It is not infested by maggots. The waste should go inside the tank without water to avoid the spread of disease.
	III. The portable toilet works the same way as vault toilet that does not really change hygiene issues and health issues.	III. The portable toilet should resolve hygiene issues and health issues due to low accessibility of toilet in Haiti.	III. The portable toilet utilizes simple mechanisms to make it accessible and affordable for all people.	The effect of low accessibility to toilets is the major cause of health issues due to unhealthy environment contaminated by human waste ("Toilets & Latrines"). So, the portable toilet uses some sort of mechanism that makes it different from vault toilet.
	IV. The portable toilet does not function as a composting toilet.	IV. The portable toilet can decompose the human waste by composting toilet function.	IV. The portable toilet can decompose the human waste and can create fertilizer for farming in Haiti.	Since the point of the portable toilet is to function without water facility, it needs to decompose waste without water facility (<u>Krososky</u>). The portable toilet chemically decomposing waste is an ideal style.

Aesthetic	I. The portable toilet often incorporates unnecessary designs and accessories.	I. The portable toilet mostly maintains a simple design without unnecessary accessories.	I. The product must follow a minimalist design throughout.	The portable toilet should only include accessories that are required for the toilet to function such as button and cap.
	II. The finish product uses	II. The finishing product has a great finishing quality including color scheme.	II. The complete portable toilet demonstrates high finishing quality in terms of color scheme and enhances clean impression.	The portable toilet needs to be used by Haitian instead of unclean toilets. To earn preference, the portable toilet should consist of white and silver.
	III. The portable toilet does not really match Haitian interior.	III. The portable toilet fit well with Haitian house.	III. The portable toilet fit extremely well with Haitian house.	Since my target audience for the portable toilet is Haitian, its design must match well with Haitian house. ("Housing in Haiti")
	IV. The portable toilet does not have a cap.	IV. The portable toilet has a cap but is not effective.	IV. The portable toilet has a flap and cap.	To avoid contamination by maggots, the toilet needs a cap. Also, the portable toilet needs a cap to suppress the effects of the smell it causes.
Manufacturing	I. The portable toilet is manufactured by paper.	I. The portable toilet is mostly manufactured using waterproof material.	I. The portable toilet is completely waterproof and durable.	To keep the portable toilet clean, it needs to be cleaned constantly. The portable toilet should be waterproof to be cleaned with water and toilet detergent.
	II. It is hard to see mechanisms utilized in the toilet.	II. The model of the portable toilet shows the mechanisms used in it.	III. The model of the portable toilet utilizes transparent materials and audiences can easily see inside.	The diagram of the design should include a cross sectional view of the portable toilet. The exterior of the portable toilet should be made of transparent materials such as plastic.
	III. The size of the model of portable toilet is too small or large.	III. The size of the model of portable toilet could be smaller than the actual size.	III. The model of portable toilet is created in a suitable size a "model" but still able to demonstrate mechanisms.	Because my final product is a model of the portable toilet that I will be designing, it does not necessarily be the actual size. The size could be 2 times smaller than the actual size planned in design.
User	I. The portable toilet is not suitable for most people in the target audience.	I. The portable toilet is suitable for most of the target audience but not for some.	I. The portable toilet is suitable for anyone in the target audience.	The portable toilet should be created according to the average body size of Haitian including. <ul style="list-style-type: none"> - Leg length - Hip size
	II. The product must tolerate up to 30 kg.	II. The portable toilet can tolerate body weight up to 78.0kg (the average body weight of Haitian man).	II. The toilet can tolerate body weight up to 100kg (since average body weight).	The portable toilet should be designed regarding to the average body weight of Haitian. Durable structure should be utilized when necessary. It will be tested by asking various people to sit on the toilet.
Safety	I. The portable toilet does not fulfil any of the safety standards.	I. The portable toilet fulfils most of the safety standards.	I. The portable toilet fulfils all the requirements in safety standards.	Should meet all the outcome stated in the below website. https://www.plumbingsupply.com/toilet-safety-tips.html
	II. The portable toilet is not very suitable for small children.	II. The portable toilet is safe for 5 years old and over.	II. The portable toilet is the size which is completely safe for 3 years old.	There are many accidents in the toilet such as kids falling into the toilet. For the safety of children, the portable toilet should have safety features such as having a handle beside or front. ("Toilet Safety")
	III. Different parts of the portable toilet become apart very easily.	III. The parts of portable toilets are bonded together but sometime become apart.	III. The parts of portable toilets are strongly bonded.	The portable toilet should be able to go through safety tests such as drop tests.

In order to develop a product that satisfies all the criteria explained above, I have constructed an action plan.

Table 2: My action plan

Area	Criteria	Checkpoint	Due Date	ATL skills
Planning		Planning goals	10/10/2021	Organization skill
		First meeting with supervisor	14/10/2021	Communication skill
		Finalize SMART goal (statement)	11/10/2021	Critical thinking skill
		Develop success criterion.	15/10/2021	Organization skill and critical thinking
		Construct an action plan into a to-do list.	20/10/2021	Organization skill
		Source evaluation using CRAAP test to record data with reliable sources.	05/11/2021	Research and media literacy.
Function	-The portable toilet must decompose or flush waste without water facility.	-Research what mechanisms are used in other portable toilets that decompose or flush waste without water facility.	07/11/2021	Critical thinking and information literacy.
	-The portable toilet should resolve issues and health issues due to low accessibility of toilet in Haiti.	-Research how the feces can chemically decompose. -Investigate whether portable toilet (SATO pan toilet) used in Uganda is effective. -Conduct an interview to an expert of gender equity in sanitation.	15/11/2021	Critical thinking, media literacy, information literacy, collaboration, and communication.
	-The portable toilet can decompose human waste by composting toilet function.	-Understand how composting toilet and SATO pan toilet function.	20/11/2021	Transfer skills and critical thinking skills.
Aesthetic	-The product must follow a minimalist design throughout. -The look of the product should be visually appealing and use a good color scheme to enhance a clean impression.	-Research how many colors are used in most of the toilets. -Conduct a survey to find out requirements for the portable toilets that are subjective.	28/11/2021	Critical thinking, information literacy, and communication.
	The portable toilet should fit well with Haitian house interior.	-Look up several images on internet, what Haitian interior looks like. -List up some traits especially for the water section.	30/11/2021	Organization skill
Safety	-The portable toilet should meet the safety standards.	-Research the safety standard using the following link. https://www.plumbingsupply.com/toilet-safety-tips.html	12/12/2021	Transfer skills and affective skills
	-The portable toilet should be the size which is also safe for children.	-Conduct risk assessment to determine accidents that could occur with the toilet.	20/12/2021	Affective skill and critical thinking skill
	Create design ideas	-Create at least 3 design ideas of the portable toilet using google drawing.	01/01/2022	Creative thinking and communication
Manufacturing	-The portable toilet should be manufactured using materials that are waterproof and durable.	-Visit nearest mall and hardware store to check what materials are available. -Collect materials to create a model of chosen portable toilet design idea.	16/01/2022	Organization and affective skills
	Creation	Create the final product	16/01/2022	Transfer skills, effective skills, critical thinking, and creative thinking skills.

Criterion B

As a prior learning related to the project, I have done a research project in individual and society class last academic year. The research project was about emigration in Haiti due to poor economical status and natural disaster. In the project, I have learnt that large part of the population suffers from hurricanes, flooding, landslides, droughts, and earthquake. This causes poverty and deteriorates hygiene in Haiti which is a push factor for migration. As a part of consequences of the push factor, the toilet and sewage system was damaged.

Applying skills for learning goal

Communication skill- Through this project in order to achieve my learning goal, I have applied several ATL skills. In the researching stage of the project, I have utilized my communication skills through collaborating with experts using a variety of digital environments and media. These skills were used with interview, in order to discover answers for some research questions from the research plan. In the prior research, I learned that the lack of sanitation (toilet) is directly linked to the outbreak of diseases such as cholera and diarrhea. Since a part of my learning goal was to understand the need for the toilet, I was strongly willing to explore the need of toilet from a perspective other than the health effects. I took contact to an expert, who explores the lack gender equity among the access to toilet in the underdeveloped countries. I was able to utilize communication skills effectively to clearly communicate content I would like to know about effects of lack of toilet on girls and women. So I was able to come up with interview questions that clearly communicated my learning goal. For example, the second question was “Are problems with sanitation or toilet affecting women more than men?” which was the question I came up instantly during the interview because she lightly talked about gender equity. The answer to this question was “They are expected to use these unsustainable pit latrines or holes in the ground or to openly defecating which leads to a host of both mental and physical health issues. And this unfortunate reality disproportionality impacts the live hoods of women, girls and other socially excluded groups. Girls are likely to drop out of school when they reach puberty because of the inadequate products and facilities that enable them to manage their menstruation safely and with dignity. Women are likely to wait until nighttime to use the bathrooms which leaves them vulnerable and subject to violence.” (Burton, personal interview, December 28, 2021). By talking to an expert using communication skills to obtain information for areas that relate to my learning goal, I was able to gain a new understanding of the need of toilet in underdeveloped countries. It was a completely new idea that the lack of sanitation is leading girls to drop out of school when they encounter violence when they use pit latrine or holes during the nighttime.

Research (Information literacy)- Since my topic resonated to my personal experience rather than units and service as action in school, I began my project almost without any prior knowledge. This indicates that I have conducted internet research using a variety of sources in order to achieve my learning goal. It was an extremely crucial process to evaluate and select information because I could not verify information with the amount of knowledge I had. A method I used to evaluate sources is CRAAP test. The below is one of the CRAAP tests I conducted to evaluate a source that is a report which accesses the effectiveness of a portable toilet to improve hygiene in Lusaka. I selected this source because the purpose stated on the source was remarkably similar to the purpose of my project. First, I could not trust the source because the qualification of the authors was unclear, and the format was similar to lab report. By confirming “authority” part of the CRAAP test, I was able to gain trust against the source. The author for the source graduated Georgia Institute of Technology’s school and she has experience with establishing toilet of her design in Kenya. Before recording data in my research paper, I was able to use my information literacy skill to distinguish is the sources was reliable.

Table 3: Evidence of CRAAP test

Currency: the timelines of the information	<ul style="list-style-type: none"> When was the information published or posted? 	The information was published on 02, May 2020.
	<ul style="list-style-type: none"> Has the information been revised or updated? 	It has not been revisited nor updated since the information was published currently.
	<ul style="list-style-type: none"> Is the information current or out of date for your topic? 	The information is current for the topic because the source shares information about the effectiveness of SATO fresh toilet in developing countries. Since the water facility takes a long time to be established, the circumstance must not be changed within a year. So the information is current for my topic.
Relevance: the importance of the information for your needs	<ul style="list-style-type: none"> Does the information relate to your topic or answer your question? 	My topic and research goal were to understand the need for the toilet in Haiti and improve hygiene by designing a portable toilet which could be used regularly but without water facility. The source explores the effectiveness of SATO pan toilet in the water, sanitation, and hygiene sector.
	<ul style="list-style-type: none"> Who is the intended audience? 	The intended audiences of the source are contributors of large-scale Lusaka sanitation projects which is like my project.
	<ul style="list-style-type: none"> Is the information at an appropriate level (e.g., not too elementary or advanced for your needs)? 	Despite the source utilizes several sophisticated terminologies, it is still understandable.
	<ul style="list-style-type: none"> Have you looked at a variety of sources before determining this is one you will use? 	Yes, I also checked the official website and Facebook of SATO pan toilet, but this source
		explains the mechanism of the toilet and its' effectiveness in LEDC countries the best.
	<ul style="list-style-type: none"> Would you be comfortable using this source for a research paper? 	Yes
Accuracy: the reliability, truthfulness, and correctness of the content	<ul style="list-style-type: none"> Where does the information come from? 	According to the citation at the end of the source, the information comes from UNICEF and SATO official websites as well as several news articles.
	<ul style="list-style-type: none"> Is the information supported by evidence? 	Yes, there is data showed in graph.
	<ul style="list-style-type: none"> Has the information been reviewed or refereed? 	Yes, it was not only written by one person.
	<ul style="list-style-type: none"> Can you verify any of the information in another source or from personal knowledge? 	Yes
	<ul style="list-style-type: none"> Does the language or tone seem biased and free of emotion? 	The source follows a format of report.
	<ul style="list-style-type: none"> Are there spelling, grammar, or other typographical errors? 	No
Authority: the source of the information	<ul style="list-style-type: none"> Who is the author/publisher/source/sponsor? 	The main author of the source is Jasmine Burton who is the founder of Wish or Wash (a charity organization). She also has designed her own toilet in order to install it in Kenya to save lives from fatal diseases.
	<ul style="list-style-type: none"> Are the author's credentials or organizational affiliations given? 	Yes, from an organization called Wish for Wash.
	<ul style="list-style-type: none"> What are the author's credentials or organizational affiliations given? 	She graduated with the Highest Honors from the Georgia Institute of Technology's School of Design with a Bachelor of Science in Industrial + Product Design.
	<ul style="list-style-type: none"> What are the author's qualifications to write on the topic? 	The qualification as the founder of Wish or Wash.
	<ul style="list-style-type: none"> Is there contact information, such as a publisher or e-mail address? 	Yes, the e-mail address for the publisher is in the report.
	<ul style="list-style-type: none"> Does the URL reveal anything about the author or source? 	<ul style="list-style-type: none"> .com (commercial), .edu (educational), .gov (U.S. government) .org (nonprofit organization), or

Applying skills for product goal

Transfer skill- My product goal was to create a model of portable toilet for Haitian. In order to create a design of a portable toilet that solves the issue with sanitation and toilet in Haiti, I have utilized transfer skill to apply learnings from my learning goal to fulfill the demand. It was because my learning goal was to understand the need for the toilet in Haiti, so it was crucial to utilize my transfer skill to design my product. For example, to achieve my learning goal, I learned that toilet is needed in Haiti because of sexual abuse. To solve this issue, I created a portable toilet design which are more suitable for females. For instance, my portable toilet is a squat toilet which is more suitable for female since girls and women are more disadvantaged due to the lack of toilet. Squat toilets are more effective in terms of improving sanitation because it does not directly contact with human body. On top of this, health issue due to insufficient toilet affects both male and female as well as all generations. From my learning goal, I have learned that flies and maggots are transferring diseases in pit latrines. I utilized my transfer skills to apply mechanisms in my portable toilet to solve those fundamental issues. For example, the image below is the product design of my portable toilet. There are diagrams of trap door mechanisms and composting toilet. Trap door mechanisms keep the toilet hole closed most of the time because of the counterweight. This would prevent contamination by flies and maggots as well as smell. One of the factors prevent Haiti from establishing proper toilet for each household was inadequate water facility. In order to process human waste without water facility, I used my transfer skill to incorporate composting toilet mechanisms in my portable toilet design.

Figure 1: Design of my portable toilet



Self- management (affective skill)- I have utilized my affective skills to maintain my perseverance during the creation of the product. Since the material was limited since I was not in school. In order to create a model of portable toilet to demonstrate the function displayed in the above image, perseverance was essential. Before starting the creation of my product, I collected plastic containers with similar shapes with the parts of toilet that I came up with as a design idea. For example, for trap door mechanism parts, I had sushi container and

chicken container. With those materials, the part looked good aesthetically. However, I had difficulty attaching tarp door and counterweight because there was no area to attach notch. Also, it was hard to attach notch to create trap door also because the material was soft and delicate to make a hole with drill to attach notch. Therefore, I could not create a model that demonstrates the trap door mechanisms with the way I was planning in design idea. I could not come up with an alternative idea. To manage myself to maintain my perseverance, I utilized one method. The method was to always understand the value of the perseverance I undertook. For example, I think about the exhibition ahead since I wanted to deliver a quality presentation in the exhibition. I also wanted a wide range of people to understand the functions of the portable toilet that I designed. It also led to my motivation to persevere because I was able to understand the fact that perseverance assures that I will have the result I intended to achieve. This method urged me to not compromise for my product because of the limitations with my materials because despite facing obstacles, I was able to look for positive result of my hard work rather than the risks of ending up unsuccessfully.

Criterion C

Impact of the project on myself

The biggest impact of the project on myself was that I learned to be a self-directed and develop my self-management skills to reflect on my learning. At the beginning of the project, it started to reveal my new weaknesses on time- management skill and I developed my reflection skills to realize that weakness. Through the project, I learned a lot about myself as a learner with my level of ATLs, and in addition I was also able to improve some of those ATLs. The typical example is my organization as a learner. I used to think I am organized in terms of time management before this project. However, this project revealed that time management is my weakness as a learner. Personal project is the first school project that was completely self-directed. In the prior MYP projects from various classes, templates for each stage of the research project was provided by the teacher and small deadlines were already setted up for me. Therefore, if I followed those detailed instructions by teachers, I was able to submit quality work on time. However, in this project, I had to follow my own action plan and manage deadlines for reports for each criterion and product by myself which is the area I could not achieve. For example, the deadline for criterion B report draft was on 16 January 2022 but I submitted my report on 31 January 2022. I was able to learn that in this type of project, I need to be able to find instruction and information by myself such as checking prior example of personal project online.

As a result of the project, I have grown and changed to be able to control my motivation. Apart from the lack of time-management skills, I realized that one of the immense issues of myself is self-management skill because I lack ability to maintain and control my motivation. Since the project was self-directed and long-term, it was difficult to keep my motivation to progress the project. Throughout the project, the only opportunity to show my work was meetings with supervisor which mostly occur only when I demanded. So I was only able to work when I was motivated. This was an inefficient method to progress the project because it ruined the action plan I created at the beginning of the project. Therefore, I completed a large amount of work in a short period of time. Due to lack of ability to control and maintain my motivation, my time-management skills were also deteriorated. However, this project was still a great opportunity to realize this weakness. On top of this, I managed to find some ways to improve my motivation in this project. For example, working with my peers by making call online was an effective way to gain my motivation. This method worked well to improve my motivation because I had a sense of being watched by someone. As an evidence, figure 2 is a screenshot from the beginning part of my process journal. On November 1, 2021 I have created a research plan and next time

the process journal was updated was November 28, 2021. This indicating that I took about a month to complete success criteria. Figure 3 shows process journal amid of the project. I have done research of a portable toilet in December 18, 2021 and I already have source evaluation done on December 31, 2021. This is because I learned to control my motivation amid of the project.

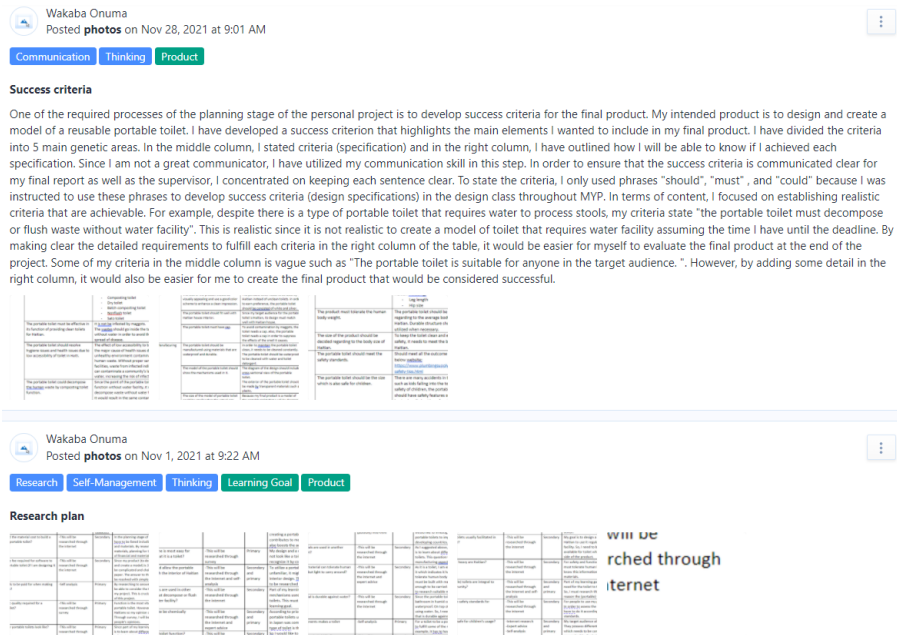


Figure 2: Extract from my process journal (begging part of project).

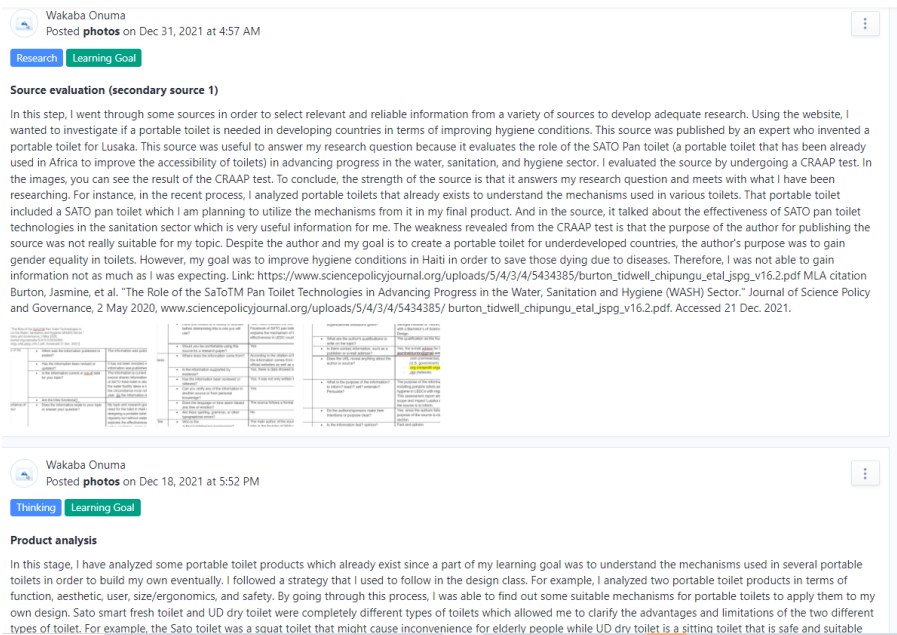


Figure 3: Extract from my process journal (middle part of project)

Impact of the project on my learning

My learning goal was to understand the need for the toilet in Haiti. This was impossible without knowing about toilet and sanitation in some other countries. I have looked at toilets in developing countries such as India, Zambia, and Kenya. Simultaneously, I also have looked at toilets in developed countries including Sweden, Switzerland, Hong Kong, and Japan. I used to think that countries with high quality and hygienic toilets simply those countries with tourism industry because public toilets would be demanded. Now, I think toilet reflect economic status and national mentality of the country. Researching underdeveloped countries where there is no sufficient toilet is available for most citizens allowed me to understand the importance of government budget and existence of charitable organizations. Despite traveling to various countries and living in 2 different countries, I have never experienced inconvenience with access to the toilet. This was because all countries I have been to had enough government budget to establish and maintain public toilets and water facilities. In this project, I researched about the issue of the lack of toilets in Haiti. Only 28% of the population has access to sufficient toilet facilities in Haiti. One of the biggest factors Haiti cannot launch toilet facility every household is a nationwide sewage system has been hard to implement and maintain due to the lack of budget. Without electricity or piped water, sanitation facilities can only be provided as a simple latrine at a distance from the house. Simultaneously, through researching, I encountered information of charitable organizations, providing support for underdeveloped countries to establish toilets. For example, The World Toilet Organization build toilets in schools called rainbow school toilet in one of the most rural area of China. Even though it is extremely crucial for the country to possess adequate government budget to achieve sanitation, I learned charitable organizations could also be a solution.

While realizing the negative sides of myself, this project also impacted me in a positive way. I found a way to be a better communicator. Prior to this project, I did not talk in everyday lessons and tended to hesitate to ask questions to the teacher because I was not familiar with talking to the teacher individually. For example, in regular research tasks or essay tasks, feedback was provided in written form when there is any unclear point. On top of this, there is no oral assessment in the English lesson, so I did not have an opportunity to communicate my thought with the teacher one by one. In this project, I realized that I usually hesitate to speak up or talk to the teacher individually because I was not able to speak up to ask questions to gain information for the personal project. I realized that I did not have confidence in my English pronunciation, so I was hesitating to talk. I was able to realize it because as I had more meetings with the supervisor, she started to understand my pronunciation which made me feel much more comfortable and confident communicating my thoughts. This led me to start practicing for my English pronunciation. For example, there was a certain key words of my project the I could not pronounce since I lack tongue muscle such as words contains letter "L". In order to gain confidence to speak by improving my English pronunciation, I ensure to exercise my tongue at least 3 times a day. One of the reasons I was able to continue the tongue exercise was that I was willing to communicate clearly in the exhibition as well as the supervisor meeting.

Table 4: Evaluation of my product against success criteria

Lowering expectation	Meeting expectation	Exceeding expectation	Evaluate against the criteria
I. The portable toilet decomposes or flush waste	I. The portable toilet decomposes and flush waste without water facility.	I. The portable toilet decomposes and flush waste using a	My portable toilet is composting toilet and possesses a water tank. Composting mechanism at the bottom of the toilet decomposes

<p>without water facility.</p>		<p>tank attached to the toilet.</p>	<p>human feces and covert them to fertilizer. On top of this, water tank is attached at the top of the portable toilet which needs to be filled every time to flush waste without water facility. Since composting toilet requires a certain amount of water, a water tank is a suitable feature to provide the water. To improve the final product, the water tank could be larger since it requires the users to fill the tank with 1L of water every time which might not be suitable for Haitian to use it regularly.</p>
<p>II. The portable toilet can be cleaned using water and detergent.</p>	<p>II. The portable toilet is effective in its function of providing clean toilets for Haitian.</p>	<p>II. The portable toilet is effective in its function maintaining hygiene conditions including a function to prevent the outbreak of flies and maggots.</p>	<p>My portable toilet is filled with features that keep the toilet clean. For example, in my final video in 0:55 ~ 1:04, water tank washes away the human feces and smells. Also, trap doors prevent obnoxious smells. However, the trap door is not able to completely cover up the hold in toilet bowl. It is dubious if the trap door is able to prevent flies and maggot contamination which is one of the most major factors spreading diseases.</p>
<p>III. The portable toilet works the same way as vault toilet that does not really change hygiene issues and health issues.</p>	<p>III. The portable toilet should resolve hygiene issues and health issues due to low accessibility of toilet in Haiti.</p>	<p>III. The portable toilet utilizes simple mechanisms to make it accessible and affordable for all people.</p>	<p>My portable toilet design and model consist of some simple mechanisms such as trap door mechanism and composting mechanism. Trap door mechanism only involves lever principle.</p>
<p>IV. The portable toilet does not function as a composting toilet.</p>	<p>IV. The portable toilet can decompose the human waste by</p>	<p>IV. The portable toilet can decompose the human waste and</p>	<p>The portable toilet is a composting toilet. However, I could not create a composting</p>

	composting toilet function.	can create fertilizer for farming in Haiti.	toilet design that creates fertilizer. To improve, I should have researched further to explore composting toilets that decompose the human feces and create fertilizer by focusing on the chemistry aspect. It might have been impossible to show how the human feces become fertilizer, it could have been possible to recreate the composting toilet aesthetically.
I. The portable toilet often incorporates unnecessary designs and accessories.	I. The portable toilet mostly maintains a simple design without unnecessary accessories.	I. The product must follow a minimalist design throughout.	The portable toilet does not attach any unnecessary parts. All of the parts of the portable toilet perform mechanism which contributes to improving and maintaining the hygienic toilet. For instance, a water tank at the top flushes' human feces, trap door prevents contamination by flies and maggots, and a container at the bottom of the portable toilet decomposes the human feces. However, my portable toilet does not include some parts that are necessary. For example, the portable toilet does not have a lid. Lid plays an important role as a part of toilet as it keeps germs where they belong which is in the bowl and down the drain.
II. The finish product does not have a very good finishing quality such as unmatching color scheme.	II. The finishing product has a great finishing quality including color scheme.	II. The complete portable toilet demonstrates high finishing quality in terms of color scheme and enhances clean impression.	The finished portable toilet lowers the expectation for this criterion. The finished product is colored white at the top surface and the rest of the surface is black to show that my portable toilet design is a squat toilet, not sitting toilet. Therefore, the finishing quality has not

			<p>exceeded expectations in terms of aesthetical aspect. However, with the aesthetic of the finished portable toilet explains the usage of the toilet very well. For instance, it is clear the black area is the part buried underground which shows that the toilet is a squat toilet. So the aesthetic such as color scheme shows how the toilet is launched.</p>
<p>III. The portable toilet does not really match Haitian interior.</p>	<p>III. The portable toilet fit well with Haitian house.</p>	<p>III. The portable toilet fit extremely well with Haitian house.</p>	<p>The portable toilet fit well with Haitian house since I designed the toilet regarding to the traits of the Haitian housings. For example, the majority of Haitian housings are consisted of 2 room dwellings that have mud walls, roofs and floors that are covered by local grasses and palm leaves. Since the floor is made of mud, I deemed that it he squats toilet that can be established by digging the hole is the most suitable design for Haitian housing. This is why my final product; portable toilet is based on simple latrine dug accompanied by 3 features to improve and sanitation. In the contrary, I did not conduct research to collect enough information to decide whether the squat toilet or sitting toilet is suitable for the Haitian house. I focused on the simplicity of the toilet design. For example, I decided that the squat toilet is the best for Haitian housing in terms of material of the house, but there might not be enough space to establish the squat toilet which takes more space than</p>

			squat toilet. To improve, I should have done research to explore the Haitian housing including the area available to launch the toilet. On top of this, odour and hygiene issue might be concerned if the toilet is attached inside the house. However, this issue can easily be resolved
IV. The portable toilet does not have a cap.	IV. The portable toilet has a cap but is not effective.	IV. The portable toilet has a flap and cap.	The final portable toilet does not have a cap. Since the final portable toilet became a squat toilet, it is unfamiliar to attach a cap to that type of toilet. I also thought that the cap would be unsanitary with squat toilet because the cap has to be placed on the floor where germs are spread, and users are forced to touch it with their hands. The main purpose of the cap of the toilet is to prevent the emission of "toilet plume" into the air from the toilet bowl which is an aerosol spray contaminated with bacteria. In my portable toilet, trap door mechanism prevents the spread of smell and release of the toilet plume which is dangerous within a Haitian home.
II. It is hard to see mechanisms utilized in the toilet.	II. The model of the portable toilet shows the mechanisms used in it.	III. The model of the portable toilet utilizes transparent materials and audiences can easily see inside.	My final product, a model of the portable toilet which is mostly built with recycled materials. Since the portable toilet was combinations of unique shapes I could not find suitable material at local stores, but I was able to find suitable shapes in plastic packages. Because most of the plastic packages are transparent, the portable toilet became transparent which shows

			mechanisms used in the toilet clearly to the audience.
I. The portable toilet is not suitable for most people in the target audience.	I. The portable toilet is suitable for most of the target audience but not for some.	I. The portable toilet is suitable for anyone in the target audience.	Despite I planned to research about the body side of the Haitian, I did not research regarding that particular information. However, my portable toilet is just a model so size is not a problem. Still, the portable toilet might not be suitable to some part of population at Haiti. For instance, squat toilet cannot be used by elderly people, those that their muscles are deteriorated due to age. To improve the portable toilet to be suitable for most of the audience in the target audience group, a handle to support balance would have been attached the toilet.
II. The product must tolerate up to 30 kg.	II. The portable toilet can tolerate body weight up to 78.0kg (the average body weight of Haitian man).	II. The toilet can tolerate body weight up to 100kg (since average body weight).	My portable toilet design resulted in squat toilet which does not consider body weight as an issue. The user will not directly contact with the toilet surface so my portable toilet can tolerate 100 kg which is the average body weight of Haitian. However, again, with squat toilet, some part of population might not be able to maintain balance when they become a squat position which narrows down the target users.

Overall, my project fulfills most of the criteria as “meeting expectations” and “exceeding expectation”. However, there are some missing points that were not included in the design of the portable toilet due to lack of information I collected with the research. For example, criteria states “The portable toilet is suitable for anyone in the target audience.”, but my portable toilets were not suitable for elderly people and 2-3 years old children. Improvements can be made in the shape of the toilet since I designed it without having much research done on the body size and physical ability of Haitians.