Title Page

Supporting Daily Hydration: A Qualitative Assessment of the Acceptability of a Welded Water Jug Dispenser Holder

A Capstone Research Presented to the Faculty of Senior High School Department

LUTUCAN INTEGRATED NATIONAL HIGH SCHOOL

In Partial Fulfillment

of the Requirements for the Subject

Practical Research 1

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March 2026

Approval Sheet

This research project entitled **"Supporting Daily Hydration: A Qualitative Assessment of the Acceptability of a Welded Water Jug Dispenser Holder"** prepared and submitted by **Marwin C. Timbal, Zaijhon R. Umali, Jerico G. Albay, Zanjoe M. Ilagan, Ceejhay L. Manigbas, Arkris R. Nicolas, Jayson P. Nota, Jemerson E. Taligatos** in partial fulfillment for the subject Practical Research 1 is hereby recommended for acceptance and approval.

Lester M. Tañada

Research Adviser

ADVISER'S EVALUATION

Approved by the Committee on Oral Examination with the grade of_____

Accepted in partial fulfillment of the requirements for Practical Research 1 of the Senior High School Department of Lutucan Integrated National High School.

MARIA MINA I.RAZON,MIT

OIC,Office of the School Assistant Principal

FELIZA B. QUEVADA, EdD

DPrincipal IV

Abstract

This study focuses on the acceptability of a welded water jug dispenser holder that will help students stay hydrated. The main objective of this study is to determine the acceptability of our product based on user feedback. The welded water jug dispenser holder is designed to support heavy gallons.

The product is designed to be durable and stable for long-term use. This study also shows how to properly apply welding skills to create products that are useful for school use. The welded water jug dispenser holder is more durable compared to other water jug dispenser holders that are made of plastic so it cannot support heavy gallons.

Acknowledgement

First of all, I would like to thank our Practical Research Teacher who guided and supported us to do and complete this study.

The researcher would also like to thank their family and friends for their support and presence to complete this study.

Lastly, the researcher would like to thank their school for the opportunity they gave them which helped them to improve their skills. Also because of this opportunity, their knowledge expanded which will help them in the next opportunity

Dedication

The researcher dedicates their study to their family who continuously supports them. Because of their family, they had the motivation to finish their study. The researcher also dedicates this study to their teacher who always guides them to learn and to improve their skills.

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Chapter I

THE PROBLEM AND ITS BACKGROUND

Introduction

Even though we pay for clean drinking water, we often forget the importance of using a proper water jug dispenser. Staying hydrated is important for our health, but without a strong stable water jug stand, water can spill and cause accidents. This is especially common in schools and work areas where many people use the dispenser everyday. Most water jug dispenser holders sold in stores are made of plastic, which make them less durable and unable to support a gallons for a long time. This study aims to show the importance of having a sturdy water jug dispenser holder to ensure safer, cleaner, and more reliable water storage for students and teachers.

Background of the Study

Water jug dispenser holders are commonly used in schools to support heavy water gallons. These holders help keep the water dispenser stable and prevent accidents such as water spilling or the water jug falling. Since water dispensers are used by many students everyday. It is important that the holder is safe and strong.

In many schools, water jug dispenser holders are made of plastic. Although plastic holders are affordable, they are not strong enough to support large water gallons for a long time. Due to frequent use and heavy weight, these holders many bend, crack, or break, which can cause water spilllage and safety risks in school areas.

This study aims to develop a welded water jug dispenser holder that is more durable and stable than plastic holders. The purpose of this research is to reduce water spilllage, improve safety, and provide a long-lasting water jug dispenser holder that students can safety use in school.

Studies have shown that using durable and well-designed equipment in schools helps reduce accidents and improve overall safety. Proper supoort for heavy items, such as water jug dispenser holders, is important to ensure stability and long-term use in school environments.

Theoretical Framework

International Organization for Standardization (2010). ISO 12100: Safety of machinery- General principles for design. ISO.

This study is based on the idea of safety and design. Equipment used in schools should be safe and stable, especially when it supports heavy objects like water gallons. If the design is not strong enough, it may cause accident such as water spilling or the water jug falling.

Using strong materials is important to make the equipment last longer. Welded metal is stronger compared to plastic, which can easily break after long use. Because of this, a welded water jug dispenser holder can provide better support and safety for students.

Research Paradigm

The study follows an Input–Process–Output (IPO) model to show how the welded water jug dispenser holder will be designed and constructed.

INPUT

•Metal materials (steel bars, metal sheet)

•Welding equipment and tools

•Design and measurements of the water jug dispenser

•Welding skills and techniques

PROCESS

•Planning and designing the water jug dispenser

•Measuring and cutting the metal materials

•Proper fitting and placement of parts

•Welding the metal pieces together

•Finishing and checking the stability of the water jug dispenser

OUTPUT

A durable and stable welded water jug dispenser that can be used for school.

Statement of the Problem

This study aims to design and construct a welded water jug dispenser holder for school use.

Specifically, this study seeks to answer the following questions:

1. How do users evaluate the stability and usability of the welded water jug holder?
2. What perceptions do participants share about its safety and convenience?
3. How do they describe their overall acceptance of the product?

Scope and Delimitation of the Study

The scope and delimition of the study define the boundaries and focus of the research study. First, the main goal/purpose of the study is to determine the acceptability of the product based on the feedback of the users. Second, the participants of the study is the students, teachers, and the canteen personnel. Third, the location of the study is where the water dispensers commonly placed, such as school canteen, faculty room, and students classroom. Fourth, the timeframe of the study will take place during the 4th Quarter of the School Year 2025-2026. In addition, the study will specifically cover the following: stability, durability, ergonomics, and acceptability. Likewise, this study does not involve professional engineering tests for the metal's durability or a scientific analysis of the water inside the jugs. The study is also delimited to our school campus only and does not include plans for mass production or commercial selling to the public.

Significance of the Study

This study may be beneficial to the following:

1. School Institution- They will benefit because there will now be a proper and durable water jug dispenser in the school. This will help maintain cleanliness and order within the campus.

2. Students- They are the ones who benefit the most from this because they are the ones who can use it more often. They will drink water more often to stay hydrated because they have a sturdy place to put the water jug.

3. Teachers- They will benefit from this because they will no longer have to think about the possibility of dropping or knocking over their water jug in the faculty room or classroom.

4. Canteen- They are one of the beneficiaries because they need a sturdy and well-made water jug. Students will be able to get water more easily and safely.

5. Future Researchers- They will benefit from this study because they will have an idea on how to make a stronger and better product. If they ever want to do a project like this and want to make it better, it will be easier for them because they now have a guide on how to make such a project.

Definition of Terms

1. Holder -This is a stand or support that keeps the water container in place. In this study, the holder is used to support the water dispenser so that it is easier and more convenient for people to get water.

2. Welding

Welding is the process of joining pieces of metal together by heating them until they melt and form a strong connection. This is important in the study because the holder is made using welding to be stronger and more durable.

3. Acceptability

Acceptability refers to how well people accept or approve of the product. In this study, it is shown whether the water dispenser holder is useful, easy to use, and acceptable for daily use.

4. Stability

Stability refers to the ability of the holder to remain stable and balanced without moving or tilting. It is important to ensure that the water dispenser is secure and will not fall or spill.

5. Hydration

Hydration means drinking enough water to keep the body healthy. The purpose of the holder is to make it easier for people to access water and stay properly hydrated.

6. Durability

Durability refers to the ability of the holder to last for a long time without easily breaking or breaking. Since it is made of welded metal, it is expected to be strong and long-lasting

Chapter II

REVIEW OF RELATED LITERATURE

To carry out this study properly, it requires proper welding. According to the Erie Institute of Technology, welding is a process that fuses two or more materials, typically metals, by using heat, pressure, or both. This creates a permanent bond known as a weldment, and the original pieces being joined are called the parent materials. The material added to help form the weld is known as a filler or consumable. (Erie Institute of Technology, 2022)

Welding is used in manufacturing, repair, and fabrication across a wide range of industries. Some people would say welding is an art form since some materials require specific processes or techniques.

When performing welding, it is important to use techniques to ensure the strength and quality of the weld. Improper welding can cause weak welds and can cause weld failure.

This information is relevant to our study because the production of a welded water jug dispenser holder also requires the proper use of techniques for a more stable and durable weld.

Importance of Daily Hydration

Drinking water is important for our health because it helps us stay hydrated.

According to the British Dietetic Association, good hydration is one of the most important aspects of the diet – drinking enough liquids to keep the fluid levels in the body topped up helps to ensure that all bodily functions are able to take place as normal. Here, Johanna Hignett looks at how much we need to drink, what kind of drinks to choose and the signs of dehydration. (British Dietetic Association, 2019).

CHAPTER III

RESEARCH METHODOLOGY

This chapter presents the research design, sampling method, research instrument, participants of the study, data gathering procedure, and data analysis.

Research Design

This study utilized descriptive research design. According to Shrutika Sirisilla (2023), descriptive research design is involves observing and collecting data on a given topic without attempting to infer cause-and-effect relationships. The goal of descriptive research design is to provide a comprehensive and accurate picture of the population or phenomenon being studied and to describe the relationships, patterns, and trends that exist within the data.

This research design is applicable to Shielded Metal Arc Welding (SMAW) because it because it shows or describes the real process, skills, etc. in welding without any changes. This will help us to understand the real situation of welders, the quality of their work, and the problems they experience in welding to improve their training and safety.

Sampling Method

The research used a non-probability sampling specifically purposive or judgemental sampling. This sampling method refers to a group of non-probability sampling techniques in which units are selected because they have characteristics that you need in your sample. In other words, units are selected “on purpose” in purposive sampling. (Kassiani Nikolopoulou 2022). Bullard (2024) defined that purposive sampling also known as judgmental, selective, or subjective sampling, is a non-probability sampling technique where researchers intentionally select participants based on specific characteristics relevant to their study. This method contrasts with random sampling, which aims to include participants from varied backgrounds to minimize bias and ensure representation across the broader population. Purposive sampling is widely used in various fields, including healthcare, social science, marketing, and polling,

allowing researchers to focus on particular demographics or traits that are critical to their research objectives.

Research Instrument

The primary research instrument used in this study was a structured interview. The interview consisted of open-ended questions designed to gather participants' observations, experiences, and opinions regarding the welded water jug dispenser holder.

Participants of the Study

The participants of the study are the selected Shielded Metal Arc Welding students and teachers. They will provide comments based on their experiences and knowledge of the product's manufacturing process.

Data Gathering Procedure

The researchers followed specific processes such as identifying the problem, formulation title. After making the "welded water jug dispenser holder" product, the researcher interviewed the selected participants. The participants were asked about the durability, design, and stability of the product. Their responses were the main data used for the study.

Data Analysis

This research applied the coding for the interpretation of data. The responses or comments of the interview participants were analyzed descriptively. All comments, opinions, and experiences of the participants were summarized by the researcher.

Chapter IV

PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

Table 1.

Question 1: How stable and secure does the jug holder feel when in use?

Participants No.	Responses	Translation	Codes	Themes
P1	I find it very stable since you use metals, kaya napakatibay niya at stable. Kahit ilang gallon o kahit gaano kabigat ay kaya niyang ihold kasi gawa sa bakal	I find it very stable since you use metals, so it is very strong and stable. No matter how many gallons or how heavy it is, it can hold because it is made of steel	very stable, very strong	**Stability of product**
P2	ang masasabi kolang ay dapat ay pantay, dapat ang sukat ay tama din.	all I can say is that it should be even, the size should be right too.	size	**right measurement and size**
P3	gawing mas stable at secure, lagyan ng adjustable strap o dip system para hindi madulas kahit basa o may vibration	make it more stable and secure, put an adjustable strap or dip system so it doesn't slip even when wet or with vibration	more stable, secure	**Stability of product**
P4				
P5				
P6				
P7				

Analysis

Table 1 shows that the water jug holder is sturdy and stable.P1 said that it is stable enough to support heavy gallons. P2 said that the dimensions need to be adjusted and should be uniform. P3 suggested that a rubber stopper be placed on it so that it does not slip even when wet.

Metal Building Outfitters (2024)

Steel structures offer unmatched strength and durability, making them ideal for supporting heavy machinery in industrial settings.

Table 2.

Question 2:

How easy is it to refill or clean the dispenser?

Participants No.	**Responses**	**Translation**	**Codes**	**Themes**
P1	For me, I find it easy since you're just going put the water jug here and then automatically kaya mo na siyang ipress para makakuha ka ng iyong water to drink	For me, I find it easy since you're just going put the water jug here and then automatically you can press the water jug to get a water to drink	easy	easy to use
P2	Dapat minsan ay maganda ang kanyang pag welding, tulad nito, di maganda may butas butas tas dapat minsan ay is-isin para walang bukol bukol.	His welding should be good, like this, it's not good if there are holes and then it should be polished sometimes so there are no lumps.	good, polished	Proper welding
P3	Para sakin ay madali lang ito dahil kaya nitong ihold kahit gaano kabigat ang ilagay mo	For me, it's easy because it can hold no matter how heavy you put it on.	easy	durability and stability
P4				
P5				
P6				

P7				

Analysis

Table 2 shows that it is easy to refill the dispenser. P1 said that we just going to put the dispenser. P2 said that we should weld the water jug holder properly. P3 said that it is easy to put the water jug.

Trymata (2024)

Usability metrics are quantitative measures used to evaluate a system or product's effectiveness, efficiency, and satisfaction from the user's perspective.

Table 3.

Question 3:

What improvements would make it more user-friendly?

Participants No.	**Responses**	**Translation**	**Codes**	**Themes**
P1	To be more user-friendly, nakikita ko itong mga edges, so yung mga edges po dapat i-cut natin siya ng ayos at pantay-pantay. Since ito ay bakal delikado ito kaya dapat lagyan ito ng rubber stopper kasi delikado siya sa mga kukuha ng tubig	To be more user-friendly, I can see these edges, so we should cut them neatly and evenly. Since this is steel, it is dangerous, so we should put a rubber stopper on it because it is dangerous for those who will draw water.	neatly, evenly, dangerous	Proper cut every edges
P2	minsan ay dapat pantayin ang sukat para hindi katulad nito di sya pantay	Sometimes the size should be equalized so that it doesn't look like	size, equalized	Proper size and equalized

	at ukab ukab	this, it's uneven and uneven.		
P3	linisin ito ng maigi palagi dahil kapag kumalawang ang bakal ay maaaring kumarag ang jug holder	Always clean it thoroughly because when the iron rusts, the jug holder can rust.	clean, iron rusts	Cleanliness
P4				
P5				
P6				
P7				

Analysis

Table 3 shows the different responses of every participant. P1 said that we need to cut every edges because it's to dangerous. P2 said that we should equalized the size. P3 said that we need to clean the rusts.

Evonik (2026)

Perfectly clean metal surfaces are critical to each step of metal processing to assure the success of the total manufacturing process. The cleanliness of high-quality components has become an essential quality attribute.

Chapter V

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

Summary of Findings

This study focuses on the sturdiness, design, durability, usability and stability of a welded water jug dispenser holder. The study showed that the welded water jug dispenser holder is not perfectly sized but it is capable of supporting heavy gallons. It has a well-designed and sturdy construction that is just right to support heavy gallons properly. The study also says that it is easy to use because of its simple design.

Conclusions

Based on the findings of the study, the following conclusions were drawn:

1. The welded water jug dispenser holder is well-made and easy to use, perfect for school
2. The welded water jug dispenser holder is made of steel, so it is durable
3. It is more durable than other water jug holders made of plastic
4. It can support heavy objects for a long time

Overall, the welded water jug dispenser holder is a very simple product but it is durable and stable and it needs improvement.

Recommendations

Based on the conclusions of the study, the following recommendations are suggested:

1.**Proper measurement**- measure the metal properly to have a better work.

2.**Proper Welding**-improve welding and polish properly for a stronger and more stable product.

3.**Improve the design**- make a place to put glasses to make it easier to drink.

4.**Future Studies**- future student researchers may look for other design of welded water jug holder and change it to have a better product .

Reference List

British Dietetic Association. (2019). Importance of hydration. https://w

Erie Institute of Technology. (2022). What is welding? https://www.erieit.edu

Evonik. (2026). Perfectly clean metal surfaces are critical to each step of metal processing to assure the success of the total manufacturing process. https://www.evonik.com

Metal Building Outfitters. (2024). Steel structures offer unmatched strength and durability, making them ideal for supporting heavy machinery in industrial settings. https://www.metalbuildingoutfitters.com

Shrutika Sirisilla (2023), descriptive research design is involves observing and collecting data on a given topic without attempting to infer cause-and-effect relationships.

Trymata. (2024). Usability metrics are quantitative measures used to evaluate a system or product's effectiveness, efficiency, and satisfaction from the user's perspective. https://www.trymata.com

Appendices

•Letter to Conduct a Study

Republic of the Philippines
Department of Education
REGION IV-A-CALABARZON
SCHOOLS DIVISION OF QUEZON PROVINCE
SARIAYA WEST DISTRICT
LUTUCAN INTEGRATED NATIONAL HIGH SCHOOL
LUTUCAN MALABAG, SARIAYA, QUEZON

February 11, 2025

MARIA MINA I. RAZON, MIT
OIC, Office of the Assistant School Principal
Lutucan Integrated National High School
Sariaya, Quezon

Dear Mrs. Razon,

The undersigned, students from IA-Forge (SMAW) is currently conducting a research entitled ***"Supporting Daily Hyrdation: A Qualitative Assessment of the Acceptability of a Welded Water Jug Dispenser Holder"*** in partial fulfillment of the requirements in Practical Research 1.

In view thereof, may I request your kind assistance to allow us to conduct the in selected Senior High School students? It would be of great help in comepleting our study.

Your positive response on the matter is deeply appreciated. Thank you very much for the response you may accord this request.

Very truly yours,

Jerico G. Albay — **Zanjoe M. Ilagan** — **Ceejhay L. Manigbas**

Arkris R. Nicolas — **Jayson P. Nota** — **Jemerson E. Taligatos**

Marwin C. Timbal — **Zaijhon R. Umali**

Noted by:

LESTER M. TAÑADA
Research Adviser

Approved:

MARIA MINA I. RAZON
OIC, Office of the Assistant School Principal

•Validation Letter

Republic of the Philippines
Department of Education
REGION IV-A-CALABARZON
SCHOOLS DIVISION OF QUEZON PROVINCE
SARIAYA WEST DISTRICT
LUTUCAN INTEGRATED NATIONAL HIGH SCHOOL
LUTUCAN MALABAG, SARIAYA, QUEZON

November 27,2025

LEANDRO I. VILLAMENA
Teacher II, LINHS

Dear Mr. Villamena,

Warm Greetings!

We, the undersigned students, are the Grade 11 research enthusiasts from Lutucan Integrated National High School, currently enrolled in the Practical Research 1 subject. As part of our academic requirements, we are diligently working on our research project entitled "Supporting Daily Hydration: A Qualitative Assessment of the Acceptability of a Welded Water Jug Dispense Holder."

In light of this endeavor, we are reaching out to request your valuable assistance in *reviewing and validating Our proposed product, research title, research instrument and statement of the problem.*

Your feedback holds significant importance to us and will greatly contribute to the successful completion of our research.

Thank you sincerely for your time and consideration. May you be blessed abundantly!

Respectfully yours,

Albay, Jerico Gusto
Ilagan, Zanjoe Maraon
Manigbas, Ceejhay Lawig
Mayuga, Ruben Villaceran
Nicolas, Arkris Reyes
Nota, Jayson Pilar
Taligatos, Jemerson Eje
Timbal, Marwin Castillo
Umali, Zaijhon Rivera
Agustin, Aeron Magboo

Noted:

LESTER M. TAÑADA
Research Adviser, Practical Research 1

•Interview Questionnaire

academic purposes. ... confidential and used only for
The participants' names or personal details will not appear in any part of the report. Codes will be used instead to protect identity.

Participation is voluntary, and respondents may refuse or withdraw at any time without any penalty.

All responses will be stored securely and will be disposed of properly after the study is completed.

Participant no. ___

1. How stable and secure does the jug holder feel when in use?

_____
_____
_____
_____

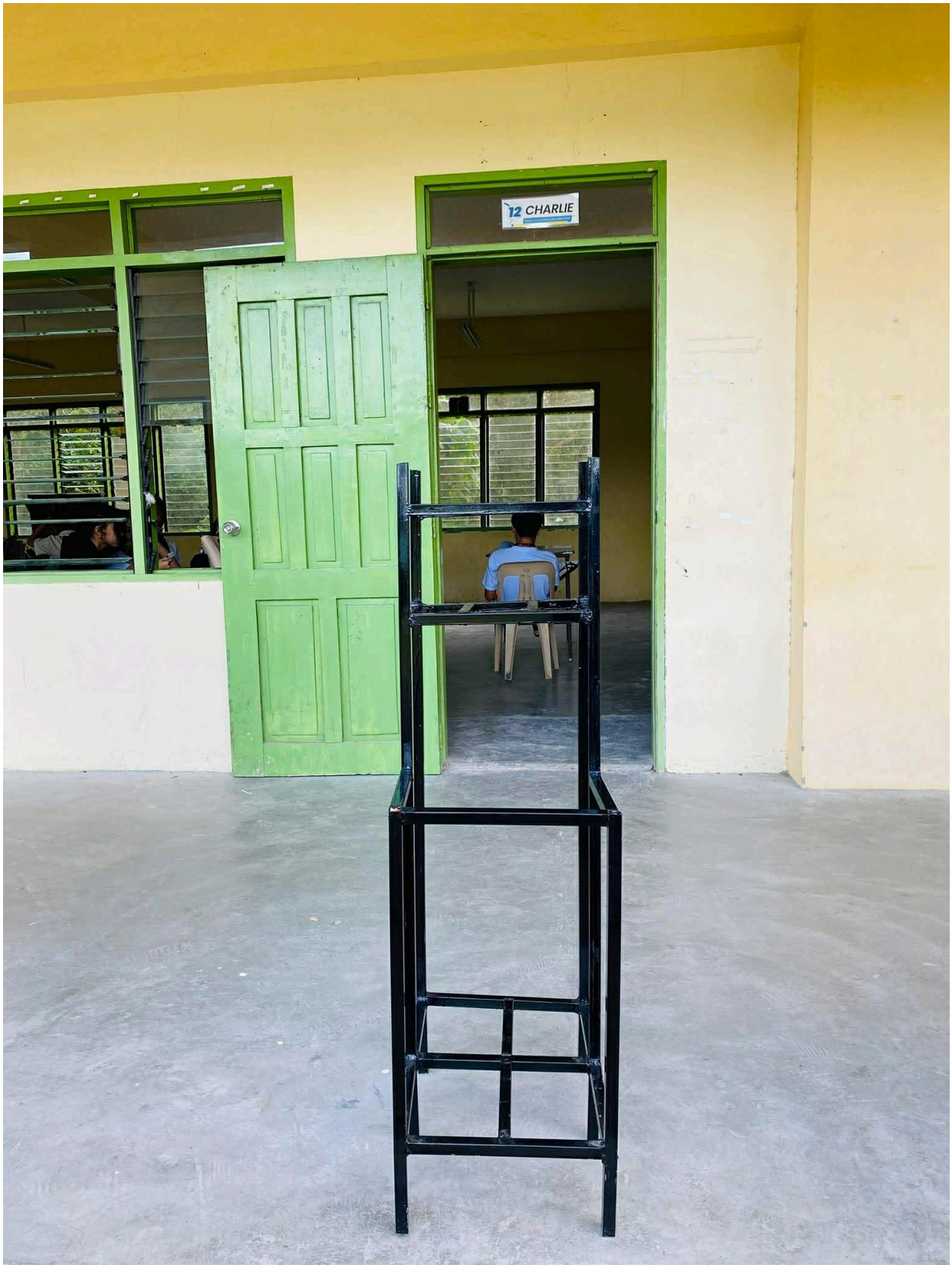
2. How easy is it to refill or clean the dispenser?

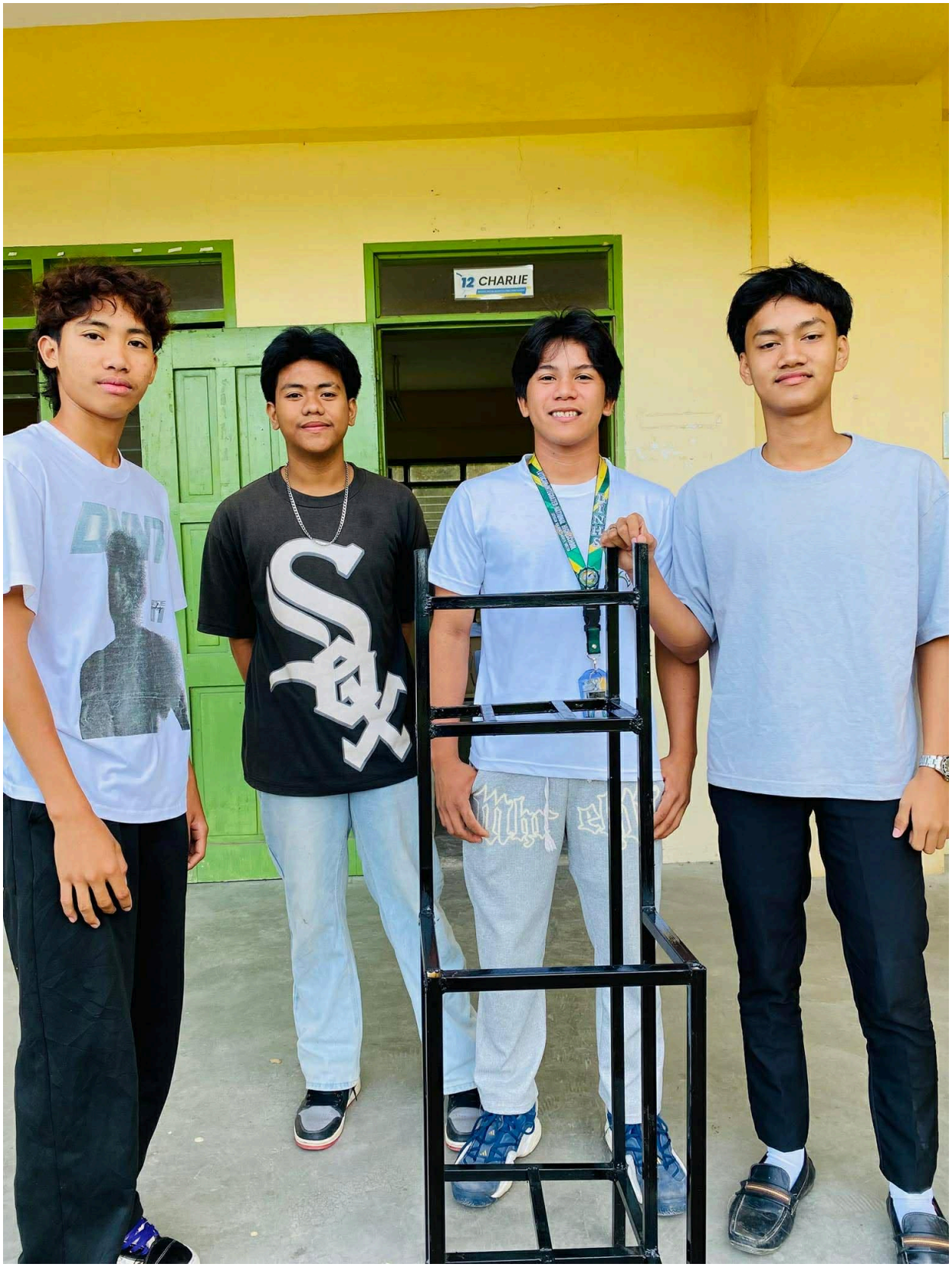
_____
_____
_____
_____

3. What improvements would make it more user-friendly?

_____
_____
_____
_____

•Picture of Product


12 CHARLIE


12 CHARLIE

•Resume

MARWIN C. TIMBAL

Student

Phone: 0970-130-5655
Email: marwintimbal1218@gmail.com
Location: Bignay 1, Sitio Aplaya , Sariaya Quezon

PROFILE

A hardworking and responsible student who wants to help support his family. Has basic knowledge and experience in welding and is willing to learn new skills. Able to perform various tasks, follow instructions well, and work with dedication. A fast learner who is motivated to gain experience and improve abilities..

EDUCATION

Junior High School

S.y 2024-2025- With Honor

S.y 2023-2024- With Honor

S.y 2022-2023- Achiever

S.y 2021-2022- Achiever

EXPERIENCE

Participated in Quiz Bee Competition

Has produced a product (Welded Water Jug Dispenser Holder)

SKILLS

- Basic Welding Skills
- Cutting Materials and Metals
- Polishing and Finishing
- Hardworking and Responsible
- Fast Learner

REFERENCES

Available upon request