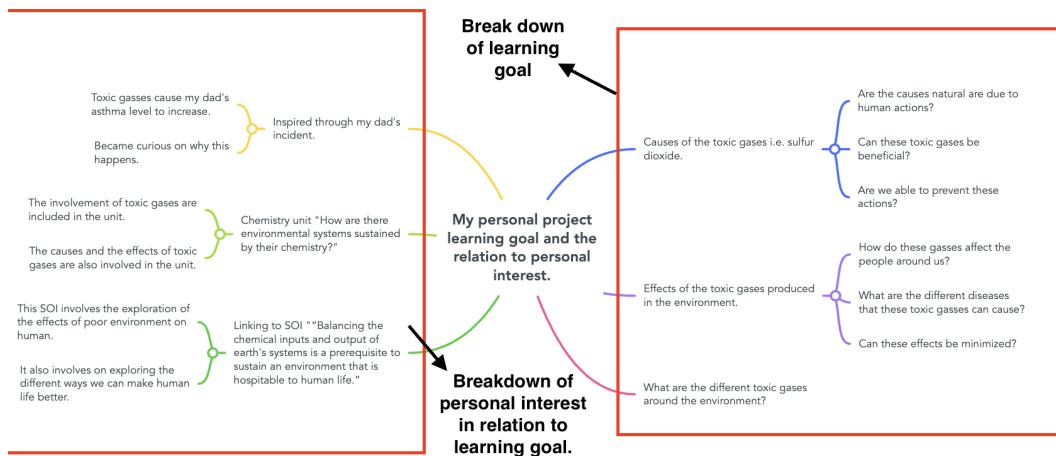


Personal Project Compiled Report

Planning

“The majority of DRC’s population is also regularly exposed to dangerous levels of indoor air pollution.” (“union advantage,” n.d.). This quote portrays the awfulness of the indoor air pollution that DRC is going through that’s why my project’s **Learning goal is that by the end of my personal project, I want to learn about the causes of indoor air pollution in the Gombe district of DRC, Kinshasa and the effects that it causes to the people.** This learning goal is inspired through a story that occurred to my dad. My dad had a disease called asthma (difficulty in breathing) at a very young age. Our house was located close to the industrial area, because it was easier for my dad to work. These nearby industries used to produce too many toxic gasses into our house, causing my dad’s asthma problem to get worse every time, therefore we had to move into a new house which is farther away from where my dad works, thus the indoor air pollution in DRC affected my dad’s asthma problem and this incident lead to my learning goal, because I wanted to first delve deeper into the causes and effects of indoor air pollution in my community. Furthermore, aside from the incident, the personal project learning goal is inspired by a unit in chemistry called “How are there environmental systems sustained by their chemistry?”. I completed this topic during grade 9 semester 2. This topic involved the study of the effects and impacts on the environment, therefore after completing this topic I gained interest in the environment and the impacts which also inspired me to focus my learning goal on indoor air pollution. Lastly, my learning goal is connected to the SOI from the same unit on chemistry. The SOI is “Balancing the chemical inputs and output of earth’s systems is a prerequisite to sustain an environment that is hospitable to human life.” This SOI summarizes how you need to balance the inputs from factories and limit your activities in order to create a sustainable environment. My learning goal is connected to this as the SOI depicts the toxic gasses in the environment and how it prevents humans from living a hospitable life. Some examples of these toxic gasses that cause indoor air pollution involve smog and particulate matter which enter our houses. Particulate matter less than 10 micrometers in diameter causes much harm to health when inhaled. Smog is also a type of air pollution caused through the usage of coal, fireworks and much more. When smog or particulate matter is inhaled the effects could be shortness of breath, chest pain, coughing, runny nose, lung irritation and can make asthma worse. Mindmap:



(fig.1. Mind Map showing the breakdown of learning goal on the right side, and the breakdown of personal interest on the left side)

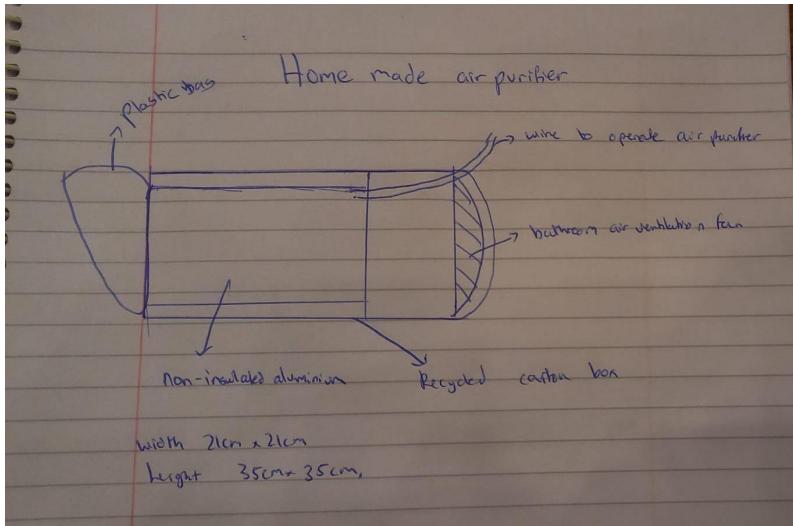
Product goal: After I learn about the causes and the effects of indoor air pollution towards the people in DRC. I would like to create 2 homemade indoor air purifiers to distribute to the people who live in the Gombe district of Kinshasa DRC for them to be safe from the different toxic gasses in their homes. An indoor air purifier is an object which is used to remove pollutants from the air and improve the quality of the air inside homes and offices by filtering the air that is surrounding us therefore, these 2 homemade indoor air purifiers would then be given to 2 different families who are suffering from indoor air pollution. (Found out through survey)

Table 1: Success criteria for product

Goal:	To create at least 2 homemade indoor air purifiers, to provide it to the people of DRC in order for them to be safe from the toxic gasses.				
	Audience	Cost	Function “Air quality monitor to test your air purifiers.”(Smith, n.d.)	Environmental considerations in relation to material.	Size
1-2	The indoor air purifier will at least be given to 1 person without any investigation done to protect them from indoor air pollution.	The costs of the product will not be planned.	The product filters the polluted air coming out from the burning paper.	My product will include no recycled materials to help protect the environment.	The width and height of the product does not allow for the indoor air purifier to function.
3-4	The indoor air purifier will at least be given to 1 with a thorough investigation person to protect them from indoor air pollution.	The costs of the products will be adequately planned to minimize the overall cost of the product.	The product substantially filters the polluted air coming out from the burning paper.	My product will include at least 1 material which is recycled to help protect the environment.	The width and the height of my product adequately allows the indoor air purifier to function with issues caused by the size.
5-6	The indoor air purifier will at least be given to 2 people without any investigation to protect them from indoor air pollution.	The costs of the product will be substantially to minimize the overall cost of the product.	The product satisfactorily filters the polluted air coming out from the burning paper.	My product will include 2 materials which are recycled to help protect the environment.	The width and the height of the product substantially allows the indoor air purifier to function with minimal issues caused by the size.
7-8	The indoor air purifier will at least be given to 2 people with thorough investigation to protect them from indoor air pollution.	The costs of the product will be well planned (Have a table with each material and the cheapest prize for the material) to minimize the	The product excellently filters the polluted air that comes out from burning a paper.	My product will include 3 or more materials which are recycled to help protect the environment.	The width (21cmx21cm) and the height (35cm) of the product allows the indoor air purifier to function at an excellent level

		overall cost of the product.			with no issues caused by the size.
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Product sketch:



(fig.2. A small sketch of the product.)

Table 2: Create a plan for creating and completing your product.

Dates	Task	To Do	Relevant success criteria	Progress notes
June 25 th 2022	Create a final design on how my product will look like.	-Collaborate with an engineer to create an improved final design. Using an online software called Tinker cart.	Size: The size of the air purifier will be considered while creating the final design. Function: As I interview an engineer on my air purifier I will get better ideas on how to improve it.	Collaborated with an engineer and created the final design on June 25th 2022.
June 27 th 2022	Create a table to fit in all the costs of materials being used to create my product.	- Investigate the value of materials. - Create a table and add the predicted values. - Go and buy the materials and fill in the actual values.	Cost: Cost is related as this step includes the aspect of managing the money used through a table.	Investigated, created and bought on June 27th.
June 28 th 2022	Create the exterior layout of my first air purifier.	- Resizing the carton box by cutting its top sides.	Environmental considerations in relation to material: In this step I am using a recycled carton box which benefits the environment.	Resizing done on June 28th.

July 1st	Attach the air ventilation fan with non-insulated aluminum.	- Attach the non-insulated aluminum behind the air ventilation fan through a circular aluminum ring that comes with the non-insulated aluminum.	N/A	Attaching the air ventilation fan on June 30th.
July 5 th -8th	Create the 2 nd air purifier.	Repeat steps 3,4,5 and 6 to create the 2 nd air purifier.	N/A	2nd air purifier created on July 6th.
July 10 th	Evaluate the functionality of the air purifiers	-Get a piece of paper and light it on fire. -Evaluate if the air purifier is able to suck in the smoke from burning paper and filter it.	Function: Function is related as this step will help evaluate how successful is my air purifier in terms of filtering the air.	Functionality of air purifier evaluated on July 9th.
July 15 th	Providing the products to 2 members after a thorough survey.	-Through the interview done on google forms (fig.3.) sent through whatsapp groups to a variety of people based on their issue on indoor air pollution, Choose 2 people who you think are facing issues and provide them the air purifier.	Audience: This step is in relation to the audience because this step permits me to choose the people I am giving the air purifier to.	Provided the products to 2 members after a survey on july 15th.

Applying ATL skills

ATL skills to achieve my learning goal

Research skills Primary and Secondary

Learning goal: By the end of my personal project, I want to learn about the causes of indoor air pollution in the Gombe district of Kinshasa DRC and the effects that it causes to the people.

My learning goal included obtaining knowledge on the causes of indoor air pollution and the effect that it causes to those people. Consequently, I needed to do thorough research inclusive of media and information literacy, therefore I used research skills (information and media literacy) to obtain the knowledge needed to achieve my learning goal. Firstly, to start answering my learning goal I created a research plan (secondary research) to help me research and know about the causes of indoor air pollution. The research plan is showcased in fig.3 Below. This research plan acts as evidence for information literacy skills as part of the research skills that I applied. Additionally, as this research plan involves secondary sources the only limitation is such that I would have to focus on a slightly broader community which would be the whole of DRC.

Research Plan to Achieve Learning Goal

Research Question

What are the causes of indoor air pollution in DRC?

Justification of Research question to Learning goal

This research question will help me achieve my learning goal, because it addresses the first part of the Learning goal which is to learn about the causes of indoor air pollution in DRC. Therefore, this research question will help me achieve the learning goal.

Sources of Information

For sources of information I will be using the secondary sources to help provide information on causes of indoor air pollution in DRC. These sources of information will include

- Websites
- Articles

Method of Data Collection

As I will be using secondary sources to collect data, the method of data collection I will be using will be content analysis and internet research. To begin with, internet research will be used to find secondary sources of information which will help me gain knowledge to answer my research question. Secondly, content analysis will be utilized to extract information from secondary sources that will help answer my research question. These are the 2 method of data collection that will be used.

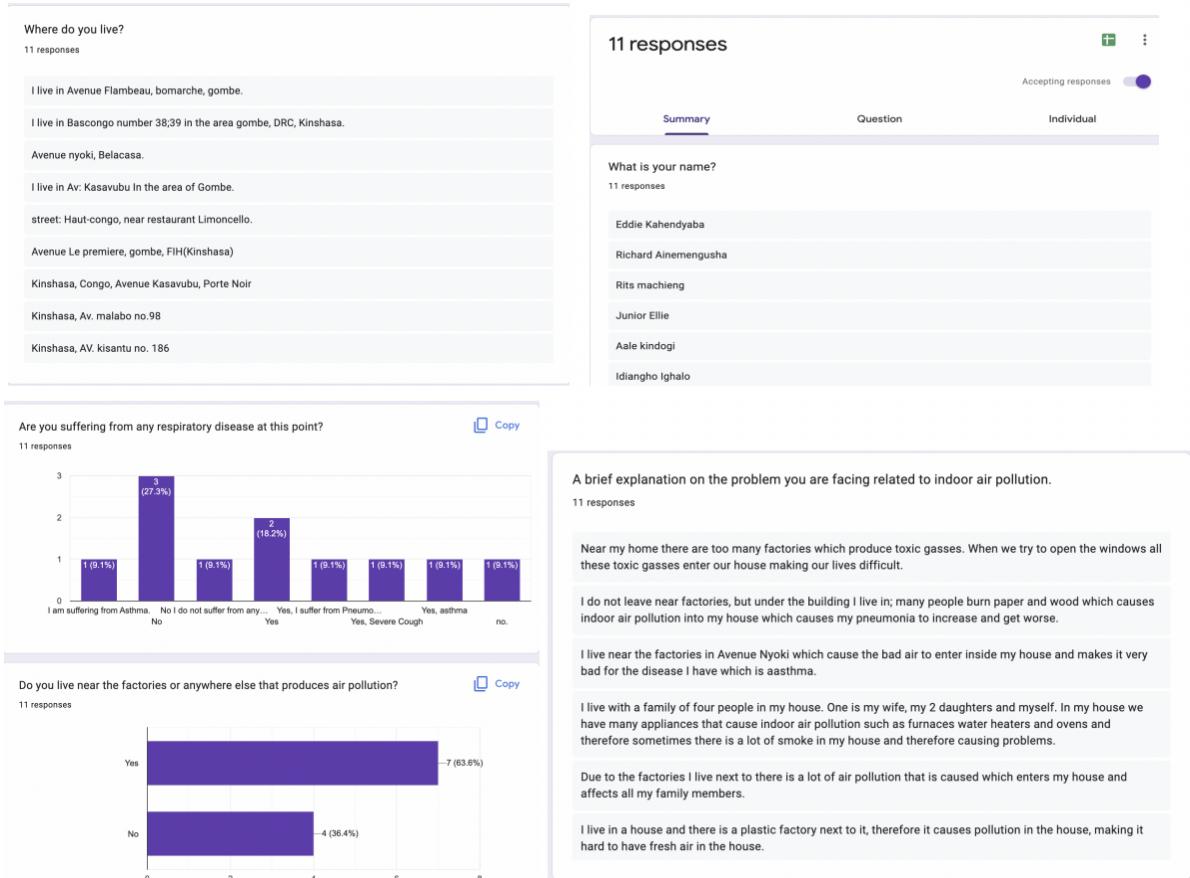
Annotated bibliography

Source	Use of the source
Source 1 <i>Pollution / Democratic Republic of the Congo.</i> (2022, February). Interactive Country Fiches. https://dicf.uneptgrid.ch/democratic-republic-congo/pollution-section-pressure	Source 1 is a website called "Pollution / Democratic Republic of Congo." Source 1 through its graphs and information goes deep into all types of pollution faced in the DRC such as water pollution, indoor air pollution and air pollution. For instance, it depicts that, "since more than 90% of the population uses wood biomass for cooking, the indoor air pollution reaches dangerous levels in DRC." Therefore, the website would be useful to extract information on the causes of indoor air pollution in DRC and relate it to the community I am focusing on.
Source 2 <i>National Library of Medicine. (n.d.). Household air pollution is associated with chronic cough but not Hemoptysis after completion of pulmonary tuberculosis treatment in adults, rural eastern Democratic Republic of Congo.</i> PubMed Central (PMC). https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6265859	Source 2 is an article called "Household Air Pollution in Rural Eastern Democratic Republic of Congo." This source focuses on the causes and the effects of Household Air Pollution/indoor air pollution. This source would help me achieve my research question, because I would be able to identify and learn about the causes of indoor air pollution or Household Air Pollution in DRC and relate it to the community I am focusing on.

(fig.3 Research plan on the causes of indoor air pollution in DRC.)

To start off, as information literacy skills include the collection of information or data, I used these skills while conducting research with the help of the research plan to collect information. I collected information based on the causes of indoor air pollution in DRC using the different sources identified in the research plan. I collected qualitative and quantitative data based on the causes of indoor air pollution in DRC. For instance, I collected that activities such as mining and use of charcoal contributes to indoor air pollution in DRC. Another example collected was that indoor air pollution in DRC is dangerous because more than 90% of the population uses biomass for cooking. This portrays information literacy skills as I was able to collect information and data (qualitative and quantitative). Moreover, information literacy skills also involve identifying primary and secondary sources. Through the annotated bibliography in fig.3. I was able to identify 2 different secondary sources. Lastly, Through the same annotated bibliography in the research plan it is clear that I was able to evaluate 2 sources in terms of their usefulness towards my learning goal for my research. To conclude, this research plan acts as evidence for the information literacy skills I applied which comes under research skills to help achieve my learning goal.

Secondly, after understanding the causes of indoor air pollution, I wanted to complete achieving my learning goal by gaining knowledge on the effects of indoor air pollution in the Gombe district of DRC. To achieve this I conducted a survey (primary research) to the people of the community which is showcased in fig.4. Below. This part of the process I applied information and media literacy skills as part of research skills to complete achieving the learning goal.



(fig.4 The survey conducted)

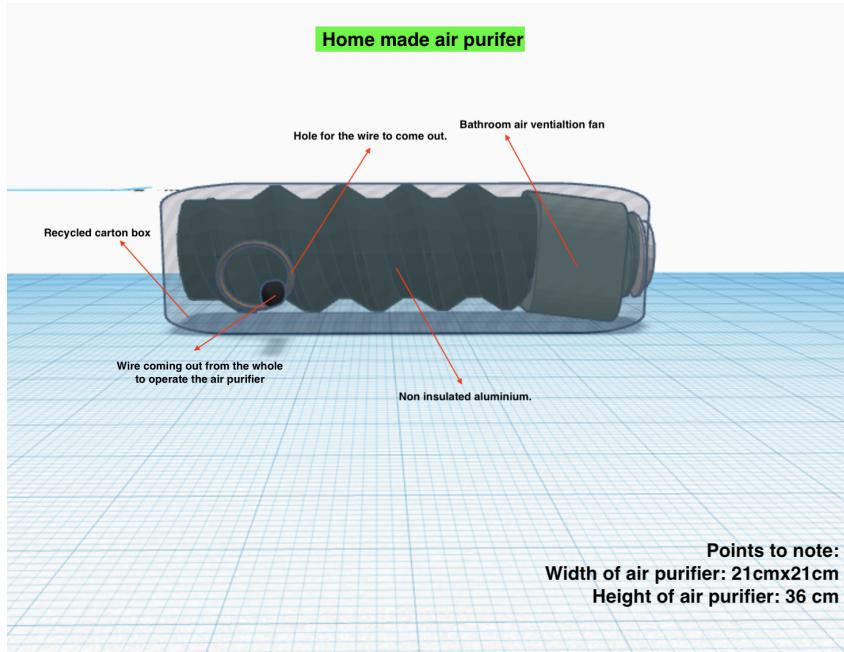
To start off, media literacy skills involve seeking a range of perspectives from multiple varied sources. I utilized this skill through the survey because I sent it out to 11 people showcased in fig.4. Sending out to 11 people helped me provide a range of perspectives from multiple and varied individuals achieving this aspect of media literacy skills. Additionally, as media literacy skills involve the usage of demonstrating awareness of media, I was able to use this to send out surveys on social media to connect to different people as part of my target audience, through this I was able to receive responses that would help me obtain information to achieve my learning goal. Through the use of a facebook post I posted the survey link with a small description mentioning all the people who live in the Gombe district to fill in, due to the fact that a facebook post can be seen by many people around the world even if they do not follow you. Lastly, as information literacy skills contain the interpretation and the analysis of information, I used this skill to interpret and analyze the information in the google forms, to make conclusions based on the effects of indoor air pollution in the Gombe district of DRC.

ATL skills to achieve my product goal

Thinking Skills

My product goal: Create 2 homemade indoor air purifiers to distribute to the people of DRC for them to be safe from the different toxic gasses in their homes.

This was my final design (fig.5.) which I created through the use of an online software called Tinkercad. As this was a product that I haven't created before there had been a lot of thought processes during the creation of the product. Thinking skills include creative, critical, and transfer skills. These skills were used in multiple stages of the product and this design helps imply the creative, critical and transfer skills that were used towards the creation of the product.



(Fig.5. The final design of the product (homemade indoor air purifier).

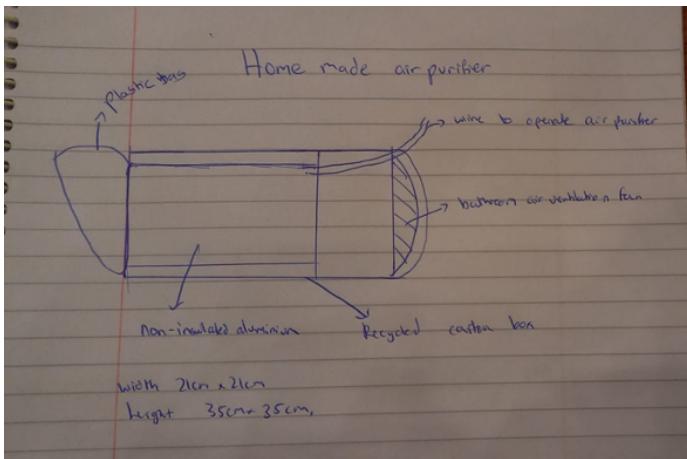
To begin with, at the bottom left corner of the design you can see the height and the width of the air purifier. To choose these sizes there had been critical thinking skills and transfer skills were used. Critical thinking skills were to analyze and evaluate the perfect size that would make it suitable for usage at homes. Transfer skills were used to transfer the skills of how to measure perfectly from mathematics with the units cm(centimeter) to get the perfect size of my indoor air purifier. Additionally, another part that portrays the thought process in the design is the arrangement of the materials. When I created a hole in the design for the wire of the indoor air purifier to come out, I had to utilize critical thinking skills and creative thinking skills. Creative thinking skills were used while coming up with the idea of creating a hole for the wire. Additionally, creative thinking skills were also utilized when generating ideas on the materials to use to create the product with the right functionality. For instance, I thought about non-insulated aluminum rings because it has the property to purify pollutants. Critical thinking skills were used to analyze and evaluate the perfect position for the whole, so that the wire can come out comfortably, without interrupting the functionality of the indoor air purifier, achieving my product goal. Moreover, while choosing the materials that are in the design I had to utilize critical thinking skills to analyze which product would fit best at each task.

Social skills (achieving my product goal)

As an indoor air purifier is a little complex project to do, I needed someone to work with me to help me do that. Consequently, I had called a mechanical engineer, I had shown the mechanical engineer the rough design (fig.7) that I had created and then, collaborated with him (fig .7) to create a new and an improved design (fig.5).



(fig.6 Evidence of a collaboration with an engineer considering my product.)



(fig.7. Sketch that was shown to the Engineer)

Firstly, after looking at my design and discussing it together we decided to remove the plastic bag I had at the back in the sketch (fig.6.). The plastic bag blocks the purified air from releasing and therefore we decided to remove it when creating the new design. Furthermore, through the discussion another thing that had been included in the interview was that the bathroom air ventilation fan usually consists of a wire to work, which was not showcased in the small sketch (fig.6) I had created it before, therefore, to have a perfect design for my indoor air purifier this needed to be changed. Consequently, this portrays that by working with the engineer effectively (collaboration skills) through an interview we were able to come up with an improved final design consisting of the indoor air purifier.

Reflecting

Explaining the impact of the project on myself

Throughout this project I was able to gain knowledge, develop skills, and evolve as an individual. To begin with, my learning goal was to learn about the causes and effects of indoor air pollution in the Gombe district of DRC, Kinshasa and its effects on the people. To achieve my learning goal, I had to go through a process of research which consists of primary and secondary research portrayed in fig .8. And fig.9. While conducting this primary and secondary research, I was able to obtain knowledge on the causes and effects of indoor air pollution in DRC. For example, it is human activities such as burning of wood and other litters that causes indoor air pollution, therefore helping me broaden and acquire knowledge about my community and the indoor air pollution.

Additionally, besides gaining knowledge I was able to develop my research skills (*ATL skill*) while researching on the learning goal, which includes the searching, collecting, recording and presenting the data. For instance, presenting the primary data collected through a survey illustrated in fig.8.) While using secondary research and looking out for information, I had to also interpret the content in the sources to help acquire details on the learning goal. The usage of research skills has provided me with methods on how to present data in a better way using graphs and other diagrams. Additionally, the interpretation of content would help build my analytical skills in terms of better extracting information and assessing the information received. These skills in the future could be used during the creation of another report where research and the gaining of information is required.



(fig.8. Primary research done)

Research Plan to Achieve Learning Goal

Research Question
What are the causes of indoor air pollution in DRC?

Justification of Research question to Learning goal
This research question will help me achieve my learning goal, because it addresses the first part of the Learning goal which is to learn about the causes of indoor air pollution in DRC. Therefore, this research question will help me achieve the learning goal.

Sources of Information
For sources of information I will be using the secondary sources to help provide information on causes of indoor air pollution in DRC. These sources of information will include

- Websites
- Articles

Method of Data Collection
As I will be using secondary sources to collect data, the method of data collection I will be using will be content analysis and internet research. To begin with, internet research will be used to find secondary sources of information which will help me gain knowledge to answer my research question. Secondly, content analysis will be utilized to extract information from secondary sources that will help answer my research question. These are the 2 method of data collection that will be used.

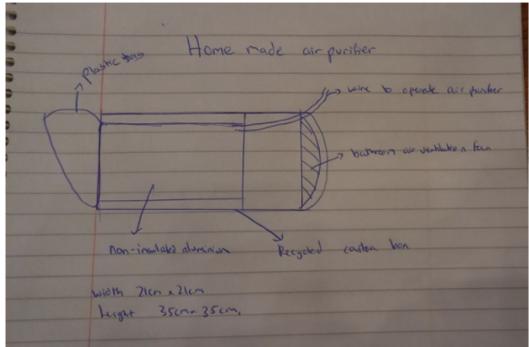
Annotated bibliography

Source	Use of the source
Source 1 <i>Pollution / Democratic Republic of the Congo.</i> (2022, February). Interactive Country Fact Sheet. https://idc.uneepgrid.ch/democratic-republic-congo/pollutressources	Source 1 is a website called "Pollution / Democratic Republic of Congo." Source 1 through it's graphs and information goes deep into all types of pollution faced in the DRC such as water pollution, indoor air pollution and air pollution. For instance, it highlights that since most of the rural population uses wood biomass for cooking, the indoor air pollution reaches dangerous levels in DRC. Therefore, the website would be useful to extract information on the causes of indoor air pollution in DRC and relate it to the community I am focusing on..
Source 2 National Library of Medicine. (n.d.). Household air pollution is associated with chronic cough but not hemoptysis in tuberculosis treatment in adults, rural eastern Democratic Republic of Congo. PubMed Central [PMC]. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6265859	Source 2 is an article called "Household Air Pollution in Rural Eastern Democratic Republic of Congo." This source focuses on the causes and the effects of household air pollution on indoor air pollution. This source would help me achieve my research question, because I would be able to identify and learn about the causes of indoor air pollution or Household Air Pollution in DRC and relate it to the community I am focusing on.

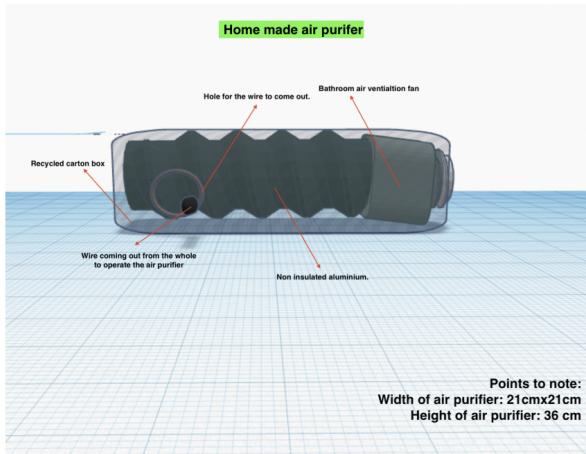
(fig.9. Secondary research done)

Moreover, as a result of this project, I was able to enhance the reflective IB learner profile. Firstly, during the creation of my product I created a sketch of how the indoor air purifier would look and this is highlighted in fig.10. I was able to reflect on the first sketch I created by understanding the strengths and weaknesses of the air purifier. For instance, the plastic bag at the end of the indoor air purifier will restrict the indoor air purifier from producing purified air. As a result, after reflecting on the strengths and weaknesses, I was able to create an even better design of the indoor air purifier with developed functionality and it was created as a 3d model showcased in fig.11. As a consequence, reflecting on the strengths and weaknesses in the project helped evolve the reflective IB learner profile as this experience would make it easier for me to understand the strengths and weaknesses. Consequently, helping me reflect better and enhancing the reflective IB learner profile. Going forward, the development in the reflective IB learner profile would help me evaluate products and projects better to help improve the same.

Additionally, it will help my thinking skills therefore allowing me to brainstorm even better ideas. Moreover, it would allow me to learn individually or self-learn. In order for me to improve the sketch and understand the strengths and weaknesses, I had to collaborate with an engineer who is an expert and work with him, in order for me to develop the product sketch. For example, after discussion one of the points to develop the sketch was to create a hole on the bottom corner to prevent the plug from getting ruined. As a consequence, this experience of collaboration with the engineer helped improve and enhance collaboration skills by providing a situation to do so. This will be used to understand and process information faster when provided by others. Lastly, this could be used to collaborate with other individuals or groups to help gain knowledge or achieve something.



(fig 10. Sketch of product)



(fig. 11 final design of product.)

Lastly, this project enhanced my organizational skills. Before the start of the creation of my product which was the creation of 2 indoor air purifiers. I had to make sure I schedule myself based on the creation of my product. Through fig .12. There is an example of the scheduling on the project that is done in accordance to dates and the activity performed. One example from the scheduling is that on June 25th 2022, I had to create the final design of my product. Furthermore, the product required the buying of materials and that required the cost. Therefore, in order to plan myself on the amount of money needed to buy these materials I created a table (fig.13.) which included the material and the expected price through the use of research, therefore helping me plan the costs for the project. These examples portray the planning and scheduling of the project, as a result being able to stay organized. Therefore, this developed my organizational skills in terms of the strategies used to plan and organize myself (*i.e. creating better tables, scheduling the work*). In the future these improved organizational skills could come in handy while taking over big projects that require a lot of scheduling and planning to do, to complete the project. Additionally, the enhancement in skills will help me prioritize my work, therefore aiding in producing quality tasks.

Strand 3: Create a plan for creating and completing your product.

Dates	Task	To Do	Relevant success criteria	Progress notes
June 25 th 2022	Create a final design on how my product will look like.	-Use an online software called Tinker cad and create exactly how the product will look like.	Size: The size of the air purifier will be considered while creating the final design.	
June 27 th 2022	Create a table to fit in all the costs of materials, being used to create my product.	- Investigate the value of materials. - Create a table and add the predicted values. - Go and buy the materials and fill in the actual values.	Cost: Cost is related as this step includes the aspect of managing the money used through a table.	
June 28 th 2022	Interview an engineer for advices on my air purifier.	- Prepare some questions for an interview on the functionality of my product with an engineer. - Through my dad I will call and interview an engineer.	Function: As I interview an engineer on my air purifier, I will get better ideas on how to improve it.	

Costs table of a single air purifier.

June 28 th 2022	Create the exterior layout of my first air purifier.	- Resizing the carton box by cutting its top sides.	Environmental considerations in relation to material: In this step I am using a recycled carton box which benefits the environment.	
July 1 st	Attach the air ventilation fan with non-insulated aluminum.	- Attach the non-insulated aluminum behind the air ventilation fan through a circular aluminum ring that comes with the non-insulated aluminum.	N/A	
July 2 nd	With the help of an engineer create a plug for my air purifier and drill the hole for the plug.	- Tape the wire that comes with the bathroom air ventilation fan. - Add an extension to the wire that has a plug attached to it. - Dig a hole through a drill in the air purifier for the wire to come out of the air purifier.	Function: This step here will help my air purifier work.	
July 5 th 8 th	Create the 2 nd air purifier.	Repeat steps 3,4,5 and 6 to create the 2 nd air purifier.	N/A	
July 10 th	Evaluate the functionality of the air purifiers	-Get a piece of paper and light it on fire. -Evaluate if the air purifier is able to suck in the smoke from burning paper and filter it.	Function: Function is related as this step will help evaluate how successful is my air purifier in terms of filtering the air.	
July 15 th	Providing the products to 2 members after a thorough survey.	-Through the interview done on google forms (fig.3.) sent through WhatsApp groups to a variety of people based on their issue on indoor air pollution. Chose 2 people who you think are facing issues and provide them the air purifier.	Audience: This step is in relation to audience because this step permits me to choose the people I am giving the air purifier to.	

(fig.12. Scheduling of the project)**(fig.13. Managing the costs of the product)****Evaluating the product against the success criteria (refer to planning)****1st Success criteria Audience Level 7-8: The indoor air purifier will at least be given to 2 people through an investigation person to protect them from indoor air pollution.**

This criteria as mentioned above was achieved on the level 7-8 in the project. The level 7-8 required me to give the indoor air purifier to at least 2 different individuals after a thorough investigation. While creating the products, I was successfully able to create 2 indoor air purifiers and then give it to 2 different individuals in the Gombe district of DRC, therefore achieving the first part of the success criteria. This is also portrayed through fig.14. And fig.15. As evidence. The second part of the criteria focused on investigating the individuals to make sure they suffer from indoor air pollution. Through the survey given out which is portrayed in fig.8. I was able to understand the individuals and pick 2 of them who suffer through indoor air pollution and this counted as the investigation done before providing the indoor air purifier. Therefore this portrays the success criteria which is fully met.

Materials	Quantity needed	Predicted costs (CDF) Congolese francs	Actual costs(CDF) Congolese francs
Non insulated aluminum	1(1 meter in length)	800.40 ("Non-insulated aluminum flexible ventilation air duct," n.d.)	1250
Bathroom air ventilation fan	2	44635.76("Universal waterproof premium bathroom extractor fan Ducting 4" For kitchen toilet," n.d.)	40,355
Carton box	2	Recycled	Recycled
hole cutting drillbit	1	12,416.34 ("Uptodate tools 2 Pcs 28mm HSS drill bit hole saw Cutter for metal alloy wood - 28mm,2Pcs price In India - Buy uptodate tools 2 Pcs 28mm HSS drill bit hole saw Cutter for metal alloy wood - 28mm,2Pcs online at Flipkart.com," n.d.)	10,000
Drilling machine	1	Borrowed	Borrowed



(fig.14. Providing the indoor air purifier) (fig.15. Providing the indoor air purifier)

2nd success criteria Cost: level 7-8 *The costs of the product will be excellently planned (have a table with each material and the cheapest price for the material) to minimize the overall cost of the product.*

This success criteria was achieved on to the level 7-8 as stated above. To begin with, the costs of the products were managed through a table which included the expected price of each material and the price that it was actually bought for with the quantity. So for example in fig.13. You are able to see the material Non insulated aluminum with the quantity that is 1(1 meter long) with the predicted cost of 800.40 congoese francs and the actual cost of 1250 frances. Additionally, the predicted cost is seen through intext citation as there was intensive research done in order to obtain the cost and this also meets the strand of it being excellently planned. Therefore the table consisting of the predicted cost with intext citation, the quantity and the actual cost showcases the costs being well planned in order to buy materials of the lowest cost minimizing the cost of the product.

Costs table of a single air purifier.

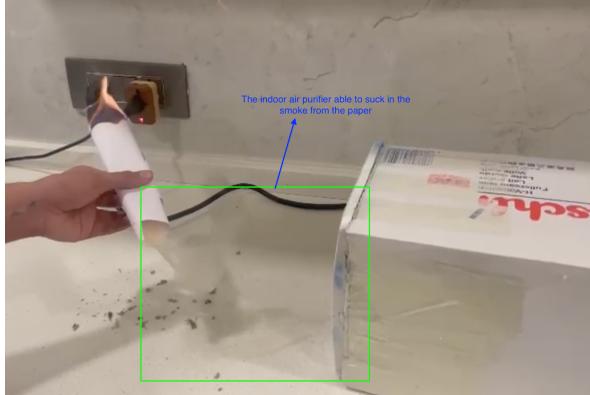
Materials	Quantity needed	Predicted costs (CDF) Congolese francs	Actual costs(CDF) Congolese francs
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Carton box	2	Recycled	Recycled
hole cutting drillbit.	1	12,416.34 ("Uptodatetools 2 Pcs 28mm HSS drill bit hole saw Cutter for metal alloy wood - 28mm,2Pcs price in India - Buy uptodatetools 2 Pcs 28mm HSS drill bit hole saw Cutter for metal alloy wood - 28mm,2Pcs online at Flipkart.com," n.d.)	10,000
Drilling machine	1	Borrowed	Borrowed

(fig.13. Managing the costs of the product)

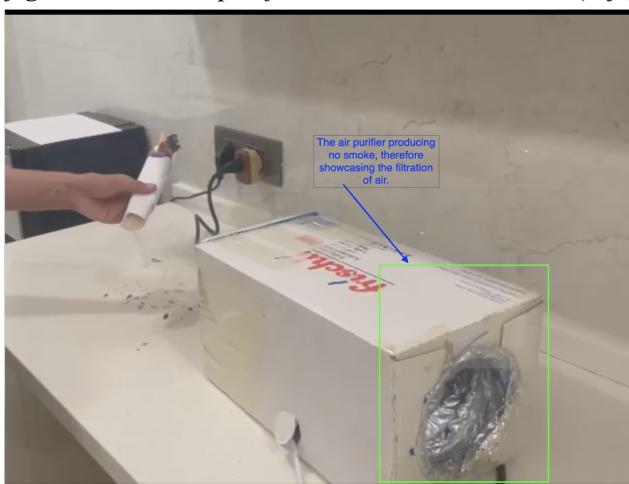
3rd success criteria Function: Level 7-8 *The product excellently filters the polluted air that comes out from burning paper.*

This specification focused on the function of the product. The indoor air purifier being able to purify the smoke acting as polluted air from the paper into clean air portrays its effective functionality. Regarding my product, when the indoor air purifier was not switched on through fig.16. It is visible that the indoor air purifier was not able to purify the air. The smoke would not get sucked in by the indoor air purifier. In fig.17. Through the image it is visible such that all the smoke from the paper gets sucked by the indoor air purifier and in fig.18. This showcases the excellent filtering that the indoor air purifier is able to produce no smoke from the behind therefore showcasing it is able to filter the smoke that comes out from the paper. This is a representation of the

smoke from the paper acting as the polluted air that enters the house and how the indoor air purifier will be efficient enough to purify the air. As a consequence meeting the success criteria to a level 7-8.



(fig.16. Indoor air purifier when not switched on.) (fig.17 Indoor air purifier when switched on.)



(fig.18 Indoor air purifier producing purified air.)

4th Success criteria Environmental consideration: *Level 3-4: My product will include at least 1 material which is required to help protect the environment.*

This was the fourth success criteria of the product and this success criteria was met towards level 3-4 where my product only showcased one recycled material. This recycled material that my product was able to portray was the milk carton box that was recycled and used in the product illustrated in fig.19. Initially, the plan was to recycle the non-insulated aluminum and also add a plastic bag to it therefore meeting the level 7-8 success criteria which portrays the use of 3 recycled materials. As a result modifications were made in which the non-insulated aluminum and the recycle bag was removed. Firstly, it was due to the interaction with the expert. The expert advised me to remove the plastic bag as it was preventing the purified air from releasing. The non-insulated aluminum could not be recycled because no other used aluminum would be able to create the ring shape that was needed in the indoor air purifier.



(fig.19. Showcasing the recycled milk carton box.)

5th Success criteria size: Level 7-8 The width (21cm x 21cm) and the height (36cm) of the product allows the air purifier to function at an excellent level with no issues caused by the size.

After research on old indoor air purifiers the size mentioned in the success criteria was the most suitable, however regarding the size, the indoor air purifier consisted of the sizes 44 cm in height and 23x23cm for its width, which is different from the success criteria mentioned above. Although this was a modification made through the figures, fig.17. And fig.18 it portrays that the success criteria-function is at a level 7-8, therefore highlighting that the modification in size had no impact towards the functionality even though it was not the most suitable size(proved after research). As a result, still achieving the level 7-8 band in this success criteria.

Summarizing the success criteria evaluation

In Terms of the success criteria my product has been mostly successful as it was able to meet the level 7-8 on % of the success criterias, but there was 1 success criteria where the product achieved a level 3-4. Moving on, the modifications in the environmental consideration success criteria impacted the level it met at but the modification of the success criteria of size did not impact the level at which the success criteria was met, therefore showcasing that the product was mostly successful.

Conclusion

To conclude, this personal project journey has been full of skills and knowledge. There were skills applied during this journey, there were skills which were improved and a lot of knowledge gained. The product was a success as it was able to successfully purify the air pollution inside your house saving people from a variety of diseases. Lastly, as I was working in the Gombe district of DRC, through the learning goal I obtained knowledge on the topic of indoor air pollution in my community.

