

EXAMPLE 1

Molecular Gastronomy

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Investigating

Topic of Interest

From an early age I was passionate about everything avant-garde and cutting edge, especially food. Cooking has always been a prominent interest in my life, influenced by my older brother, a sous-chef. I'd entered several baking competitions since I was young, and adopted experimental cooking (molecular gastronomy) as my hobby with my family since I was thirteen years old. At home, ever so often, I'd struggle to make chocolate spaghetti or strawberry spheres, however it was just for fun, without any professional knowledge or awareness of what I was specifically doing. In this project, I wanted to work independently, gaining a new understanding of food, exploring the basic mechanisms occurring during cooking. Also, food science is a potential major that I might pursue in college, and this topic is an excellent precursor to that.

Global Context

The global context I'm using as a focus is Scientific and Technical Innovation. It would allow me to focus on the technical part of molecular gastronomy. After considering all of the global contexts, I realized it corresponds and resonates best with my topic of interest, as I can explore the impact of technological advances on food. Applying this context allows me to explore and investigate food technology, modernization of food, molecular techniques behind molecular gastronomy, and the revolution of food through the lens of Scientific and Technical Innovation. I'll focus on the science and technology behind creating my recipes, and understanding the reasons behind their chemical reactions to be able to show the same to others through my product.

Goal

My goal is to educate myself and others about what molecular gastronomy is, widening their perspectives about food through my product- an exhibition of three dishes:

chocolate spheres with sprinkles, blue cheese in fig confiture, and honey-glazed gorgonzola with honey pearls. When first choosing my goal, I made sure it was *SMART*: specific and clear, measurable, achievable, relevant and time-bound. The IB values taking risks and being open-minded, thus I decided to take on my goal, even if it seemed overwhelming. It's a highly challenging goal, since there's a lot of work and researching to do on a topic that's not very accessible or currently popular. Molecular gastronomy is a relatively new discipline, and not much information is easily available online. It's an unfamiliar and foreign topic to most people, creating confusion and skepticism, which can be daunting for me to try to explain, and give the first (and the most crucial) impression of what molecular gastronomy is. It's also a personally intimidating goal, since it requires for me to go out of my comfort zone by organising the event, and communicating with others, which doesn't come easily to me. One of my biggest fears is presenting and displaying things to others; I'll have to overcome it to realise my goal, no matter how difficult it might be.

Prior Learning and Subject Specific Knowledge

My subject specific knowledge came from last year at school, when in Science class we had a unit on "Science and Food". We examined how they're connected, learned how technology affected food, and molecular gastronomy came into play. That unit prepared me for this by thinking of food and technology in a linear fashion, step by step. We examined capabilities of food based on chemical properties under certain circumstances during applying extreme heat and cold - pushing the limits of how food can be manipulated. In analyzing its contribution to my project, it was very useful, since it increased my knowledge of the correlation and interdependence between food and technology.

This particular topic came about as I was in eighth grade, and took part in a month long cooking class outside of school with my dad, called "Modern Food", which was about certain recipes and techniques from molecular gastronomy, further sparking my interest. The seminars have prepared me, helping me embark on this project by providing a

structured process to carry out my explorations with food. It was very helpful, especially in terms of understanding how to prepare food that would convey my cooking style. In analyzing its contribution, it prepared me for issues that arose throughout the project, where I could find answers regarding the technical challenges, laying an important introductory foundation; a basis from which I could grow.

Research

Research Process:

To be able to successfully create my products, I gathered extensive knowledge of my topic of interest. I started research with a question: “How can I investigate molecular gastronomy in order to show it to others?” It covered everything I needed to know in order to have a successful product. I designed a very practical plan (**Appendix 1**) that allowed me not only to collect research using guiding questions, but also to sum up the gathered information, analyzing its implications for my product. Most of all, it helped me prioritise information based on immediate importance and relevance of the elements that needed to be researched.

Summary of Research:

My initial research started out very broad. I began with ordering, and reading the book “Molecular Gastronomy: Exploring the Science of Flavor” (Herve, 2007) for gaining all of the basal knowledge on the subject, forming key takeaways. Afterwards, I needed to gather sources for finding information about chemicals, gastronomy kits, molecular cooking techniques, and finding appropriate recipes. My guiding questions in the research plan were very helpful in terms of narrowing the search down, and focusing on the mere vitals. I used an extensive and varied range of both primary and secondary sources, including a Skype-interview with an expert (Tertiy, 2017), a blog and subject-specific answer platform for submitting my questions regarding molecular chemicals and recommendations on cooking (Lersch, 2017), a podcast “How Molecular Gastronomy Works” (Bryant, 2011), websites (Logsdon, 2017), a book about sensory

and scientific properties of food (Birch & Parker, 1977), videos and video-recipes (Millbourne, 2017), and hands-on experience from my time spent at the cooking class.

As for my research analysis, I effectively evaluated and verified all seventeen sources using the CARRDS evaluation system (**Appendix 2**), allowing me to determine which sources were the most valid and dependable for research, and being confident in using them.

Planning

Product Criteria

I created seven rigorous criteria (**Appendix 3**) informed by research to evaluate my product. They covered what I wanted to achieve, and how I would know that I'd achieved it well. I developed relevant success indicators that were both qualitative and quantitative, so that I could easily measure them. Specifically they were: visual appearance, cooking techniques, shape, education, safety, size and quantity. I applied findings from my research to write the criteria: for example, when reading "Sensory properties of foods" (Birch & Parker, 1977), there were four chapters about the impact visual appearance of food has on people, and I used it to write one of my criteria. I also justified each criteria to make them as relevant and specific to my product as possible. The standards, even though challenging, were attainable. For coherence, I made them as exact and detailed as I could, separating each criteria into many strands, and adding examples for clarification. I chose these specific criteria, as they would ensure the success of my product by describing the standards I must reach for the best outcome, guiding me to reach my goal.

Planning and Recording the Process

My process journal played a large role in assisting me with being a platform where I could write the details about creating my product, and collect resources in one united place (**Appendix 4**). I recorded all my accomplishments, thereby documenting the

process I was undergoing, using a tailored system of writing each post (**Appendix 5**). I created a living document as a timeline that guided me, with both short-term and long-term deadlines that I set myself. It was very useful for reminding myself of approaching deadlines (**Appendix 6**). The timeline helped me stay organised by prioritizing assignments based on their importance and due dates, and adding any modifications to the project. I set goals that would challenge me; if they would be too difficult, I would re-scale, adding a longer time-frame. From the August to mid-October time frame I compiled research. My initial product was to take part in the largest food festival in [REDACTED] showcasing my molecular gastronomy dishes. Through contacting the admission director and conducting a degustation, they admitted me. However, soon afterwards, I realized it was too difficult for me (I would've had to make four hundred portions and build a food stand). Thus, through efficient planning and self-management skills, I was able to quickly refocus my product. In mid-November, I rescaled the magnitude, coming up with a new idea of creating an exhibition at school. If not for my organization in the journal and project plan, I wouldn't have been able to 'bounce back' as quickly without being scattered.

Self-Management Skills

Balancing Personal Project with other school work and extracurricular activities was challenging at times; the hardest part for me was staying on task. Before attempting my project, I knew that self-management skills were my weak points, and that procrastination was simply not an option in this endeavor. Thus, I tried to divide my time in small chunks: two to three times a week I worked on my product and did research, writing everything in my journal, and rearranging my timeline. During the project, I started actively using google calendar in order to arrange, and remind me about meetings with my supervisor and coordinator. My supervisor was a great help in dealing with the stress of the personal project, as I systematically attended a weekly 5-10 minute conference, where we discussed approaching deadlines, examining my progress (**Appendix 7**). In addition to that, every week I routinely attended Personal

Project Clinic (a club where I received help from teachers on personal project). Whenever I'd get too overwhelmed with the amount of work and information, I would practice positive thinking techniques and mindfulness to help with my focus span and overall concentration. Also, I'd do simple breathing exercises to release any stress: these affective skills were highly useful in helping me maintain a more calm and forward outlook, staying positively focused at all times.

Taking Action

My Product

My final product was an exhibition of three molecular gastronomy dishes, with flyers and a poster to educate people about what molecular gastronomy is, explaining and showing the cooking techniques and methods I used. The specific dishes (honey-glazed blue cheese with honey caviar, chocolate spheres, and gorgonzola in fig confiture) demonstrated the three respective molecular techniques: gelification, reverse spherification and spherification. I was very pleased with the end outcome; not just because the majority of people were impressed with the food, but because I accomplished what I'd set in mind. The criteria guided my product's format. As I was developing my outcome, I made sure it met my set criteria so that it would be the highest quality. I paid close attention to it when assembling ingredients and preparing food for my product. Thus, the exhibition was a direct outcome of the criteria: I attained a consistent, high quality product due to the standards I'd established for myself. My initial goal was to educate people about what molecular gastronomy is, and I'd successfully done that through the exhibition. More than forty people tried my food, and at the start only a handful knew what it was. My product reflected the goal in giving others a glimpse into the world of experimental cuisine, helping expand their knowledge and pre-set notions of what food should look like. My product relates to the context Scientific and Technical Innovation, because in order to make it, I used molecular mechanisms and techniques. I worked with different apparatuses (such as pipettes,

syringes, silicone tubes, high-precision scales), and chemicals (namely agaragar, sodium alginate and calcium chloride) to induce certain reactions in food. The context's impact on my product is visible, since it took me in a very technological and methodical direction. It was a lense that allowed me to narrow down on the science behind creating and manipulating food, guiding me to accomplish the most fitting product.

Thinking Skills

Everything I learned from research I applied to my product, combining both gained knowledge through research and a conceptual understanding of molecular cookery. **An example of transfer of information was when I planned to recreate recipes, and was able to transfer my research knowledge by choosing appropriate recipes from reading the recipe book by Jozef Youssef (Youssef, 2009) which helped me find and cook two of the three dishes.** Also, I was able to deduce ideas based on research I did (**Appendix 1**). My original plan was to participate in a food festival; the knowledge I gained about preparing and assembling dishes made it clear I wouldn't have enough time to prepare 400 samples of it. I demonstrated creative **thinking skills when I faced an obstacle, and had to be flexible to solve it.** During the 'Taking Action' stage, I couldn't perform one of the techniques (spherification) properly, and no online information helped me, since I needed specific advice and clearer instructions. I applied creative thinking when I came up with an alternative solution: **I found a master-class on foams and spherification in a culinary academy in [REDACTED], and signed up for two sessions thanks to which I visually saw the process, understanding my mistake.** I used effective problem solving skills when I quickly decided upon another venue for my product, since the first option (the festival) was too demanding. At first I was lost; however, I recuperated swiftly by coming up with a new idea of showcasing my exhibition at school. I developed critical thinking skills when I used reason to solve a problem I faced when creating the dishes. When I started cooking them, I realized I didn't have enough agaragar for creating the gorgonzola coated in confiture. Instead, I applied my logic reasoning, approaching this problem

from a scientific perspective, and figured out a way to substitute agar-agar for gelatin powder, resulting in a high quality outcome.

Communication and Social Skills

Overall, I demonstrated excellent communication, collaboration and social skills. The ATL skill I exhibited was Communication Skills; I cooperated and interacted with teachers and a molecular gastronomy expert using a variety of media. Initially, interacting with people was one of my weakest skills; however, throughout the Personal Project I developed more patience, empathy and an understanding of how to communicate effectively with fellow students and adults. I showed my product to parents and students, and conferred ideas with peers. I had a meeting with my supervisor every Thursday; whenever I had questions or concerns, I contacted the coordinator. Oftentimes, I sought the librarian's help with gaining secondary sources in the Destiny Catalogue. I used communication skills with the school administration to make plans to arrange and organise my exhibition, deciding upon the specific dishes I'll present (**Appendix 8**). I asked a molecular gastronomy chef in [REDACTED] for feedback, and visited two of his master-class sessions. Also, I made an appointment with a panel of festival marketing chiefs for admittance into the biggest festival in [REDACTED], learning how to liaise and respectfully negotiate with adults. I communicated with peers by creating a Facebook group (**Appendix 9**), which was our support system. There, I reminded classmates of deadlines, giving and receiving feedback, and sending helpful information in the group, encouraging them to keep working, thereby helping us all succeed.

Reflecting

Product Evaluation

To evaluate the extent to which my product's criteria have been met, I compared the final outcome to each of established criteria specifications. I've included strengths and weaknesses of the product based on the criteria, and possible improvements and their

potential impact. Overall, I met my goal of showing people about what molecular gastronomy is through an exhibition.

1. The dishes were visually attractive, and possessed 'eye appeal'. They drew individuals to venture closer to sample. I graded myself down, giving a 5 out of 6, since the dishes I selected were difficult to arrange neatly on the serving tray, detracting somewhat from the overall appeal of the product. A potential improvement could be using a larger serving tray to allow for a more artistic array of the food.
2. I used three modern molecular gastronomy techniques, and their accuracy reflected in my dishes. I gave myself a 6, because the chocolate spheres were spherical, had a thin membrane; the honey caviar didn't turn to liquid; the glazed cheese stayed coated in confiture as one.
3. I ensured the shape of all the dishes was consistent by inspecting each dish separately. I awarded myself a 6, because all the chocolate spheres had a round and bulbous shape; each glazed cheese had a cubic shape, and every pearl was plump.
4. I produced detailed flyers for visitors with factual information about the techniques used. More than half (22) of the provided flyers were taken by the visitors. I'd answered each question asked by the audience in a courteous and detailed manner. I gave myself a 5 out of 6, because I put too much information on the flyers. The poster was too difficult to understand, and scattered. Next time, it could be more structured and simple.
5. I awarded myself a 6 on 'Safety', since I was meticulous regarding hygiene in handling food. The only improvement could be using a second refrigerator to keep more of my product away from the family food in our refrigerator; not that it was unsanitary, but just as an additional safety precaution.
6. I allotted myself a 6 on 'Size', even though it was a tough criteria to follow precisely. I measured each serving size to ensure there were no deviations from my set standard. Using a ruler, I measured the dimensions of the fig-glazed

cheese, ensuring it was 2 x 5 cm. I weighed each chocolate sphere, and it was a range of 20-23 grams, securing they were equal. I counted each honey pearl, making sure there were ten in each dune.

7. In total, I ensured exactly 100 appetizers. Out of 50 people that came to the event, only 42 have tried my food, thus I graded myself down to a 5. I could've improved this by advertising my event more, thus attracting more visitors.

My product was very successful according to the criteria, because it hit the highest levels in all aspects (5-6), and I was personally satisfied with the outcome.

Reflection: Topic and Global Context

Over the course of this project, my knowledge increased regarding both my topic of interest and the global context Scientific and Technical Innovation. Prior to the project, I had little idea of what this global context meant. Now, I have a clearer understanding of its impact on my project. Focusing it from the standpoint of molecular gastronomy, I understand that it's about the impact of scientific and technological advances on food; it's about human ingenuity in food, and its significant modernization. **Thanks to the context, I investigated the advancement and progress humans made in food due to scientific principles. It allowed me to explore the chemistry behind creating food, and center my product in a technical way. My knowledge of molecular gastronomy has increased, specifically as I learned about specific cooking techniques: spherification, gelification, reverse spherification; and saw how chemical reactions transform food when you add a chemical or use a tool (a caviar maker for pearls, for example).** My experience changed my views of molecular gastronomy extremely; in the beginning, I thought it was something only high-end, experienced chefs could do, however now I understand that any person could try experimental cooking at home, provided he has the right tools and materials. Now, thanks to this project, I can see myself having a future as a food scientist or a food technologist.

Reflection: An IB Learner

I'd greatly developed as an IB learner, exhibiting two particular learner profiles: Reflective and Risk Taker. I was reflective and cognitive, **since I had to keep a process journal, writing reflections (Appendix 5)**, and evaluate my product in order to recognize my strengths and weaknesses, fixing them. I demonstrated my willingness of taking risks, overcoming my fear of presenting by showing my food to a room full of people. I took myself out of my comfort zone, having to be fine with being judged by others. I was a risk taker by taking on this particular topic from the beginning: it was rather an unpredictable project, and I had to be ready for my plans to change a lot. I've become more internationally minded by making real-world connections with the topic of interest; accepting hardships that came my way, and dealing with them by putting myself in somebody else's shoes. Looking back, personal project was a culminating experience of tenth grade, preparing me for the challenges of DP, and life after school.

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Appendices:

Appendix 1: Research Plan

Research Question How can I investigate molecular gastronomy in order to show it to others?		
Priority	Guiding Questions (What needs to be researched?)	Source(s):
1 (8.09)	What is molecular gastronomy? What is molecular cuisine? When and how did it originate? Who is the 'founder'? Where is it most commonly used? How is molecular gastronomy a 'biological revolution'?	Book: "Molecular Gastronomy: Exploring The Science Of Flavour" by Herve This
Information Gathered: The book discusses the physiology of flavor and explores how the brain perceives tastes, how chewing affects food, and how the tongue reacts to various stimuli. Also, the author examines the molecular properties of different foods, and the book analyzes what happens (the chemical reactions) as they are baked, cured, cooked or chilled. There was a chapter on art & food (and how molecular gastronomy embodied both). Most of the book is just about cooking food scientifically (f.e., cooking in a vacuum/ playing with texture/ methods and processes/ teleolfaction). There's also a glossary at the end that's very educational, because it has every single word and term related to cooking.		
Implications for my project: This book is a perfect introduction to molecular gastronomy (written by the 'Father' of molecular gastronomy, Herve This); I accumulated a lot of basics and information that I'll need to know in order to educate others through my product and cook my dishes; this book allows me to know the science behind both eating and cooking, and base my product(s) off that knowledge.		
2 (12.09)	What are the specific chemicals involved? What are processes & techniques of molecular cookery? Is it ethical? Are the chemicals involved harmful?	Podcast: " How Molecular Gastronomy Works " & Report: " Introduction to Molecular Gastronomy "
Information Gathered: The podcast helped me grasp together everything I read from the book, and put it into a more modern perspective; it helped consolidate everything I read into something more solid and immediate (specific to molecular gastronomy). The chemicals (i.e., agar-agar, sodium chloride, calcic) were mentioned, and their ethics were discussed; apparently, since every chemical is nature-based and has no dangerous additives (when used in little quantities), the chemicals are considered ethical. Molecular gastronomy looks dangerous for some people, simply because they don't know what it is (uncharted territory); however it is completely safe for consumption. The report outlined four specific techniques (gelification, spherification, emulsification and siphon whipping), and the recipes that are used in those techniques.		
Implications for my project: I will use the information from the podcast to conceptually understand that M.G. is completely safe, and know more about the chemicals used in molecular gastronomy in order to induce specific reactions in different foods (more at 6:00-8:20 sec.). The information from the report allows me to read the techniques used in molecular gastronomy, and choose recipes from the corresponding techniques (for practice & better understanding of how to cook by myself).		
3 (14.0)	Where can I buy molecular gastronomy cooking kits? What are all of the chemicals used and their breakdowns?	Blog & question-answer platform: " Khymos "

9)	How can a beginner cook successfully?	
Information Gathered: Khymos is a great resource, mainly because it has everything I need that's related to molecular gastronomy: not only is it a blog, it's also a question platform, where I can ask experts, getting valuable answers from trusted people. I submitted only four questions, most of them correlating with my guiding questions. For "How can a beginner cook successfully?", I was told that "following the exact rules of a cookbook, and not experimenting with the measurements is a must; going with the flow, yet also staying organized". When I submitted a question "Where can I buy the best cooking kits for a set price?", I was given lots of links to ordering kits online--most of them being the same one--on Amazon. And, for asking the question "What are the most commonly used chemicals in MG?", the most apprehensive answer was "We don't like the term 'chemicals'...it sets the public off. The general break-down is three groups: stabilizers, emulsifiers and gelifiers. Most of them are inorganic or chemical compounds, made from an extract of seaweed or soy bean plants<...>All of them are natural, and completely harmless"		
Implications for my project: Khymos allowed me to ask experts questions that will help me with the development of my product. For example, asking the best option for a cooking kit will direct me in getting the best kit in their opinions. Their advice for cooking as a relative beginner are very comforting and helpful; I will remember them when creating my product and/or practicing cooking. Their answers about chemicals was mostly a repeat from what I already knew based on previous research, although I never realised where they are derived from.		

Appendix 2: CARRDS Source Analysis

	Source: Khymos (Lersch, 2017)
C	The author and creator of this blog is Martin Lersch; he has his biography and email address clearly written at the beginning of the blog's homepage. I trust him, because he has a PhD in organometallic chemistry. His involvement with molecular gastronomy dates to the late 1990s; and in 2004 he attended the "International Workshop on Molecular Gastronomy" in Sicily. This source is credible, since Martin Lersch has a lot of professional expertise about molecular gastronomy.
A	Based on my previous knowledge, all of the articles from this blog seem correct. When comparing facts from this source, they are all valid (for example, when checking the stated fact that "emulsification is defined as the process of turning liquids into light foams that will liberate and intensify flavors", other sources confirmed that statement). None of the facts conflict with each other, and they all make common sense. There are little grammar mistakes here and there, however that doesn't discount the overall informational accuracy.
R	This source is completely reliable, since it's unbiased: the purpose of this blog is to simply inform people about molecular gastronomy, not to sell the author's products, or push any opinions on the readers. Martin Lersch clearly states his opinion, which is "to inform people". I understand the opinion, and it's fine for my research.
R	This source is one of the most relevant resources I've found, because it is so multidimensional: it answers a lot of my research guiding questions, and has new information that I wasn't able to find in other places (like recipes). The level of information that's given here is perhaps a little bit too in-depth and the tone is too scientific at points, thereby making it more difficult for me to nit-pick (and comprehend) things I need to find, however if I were to rate it, I'd give it 9/10.
D	This blog was copyrighted in 2017; the latest article that was written was published and updated in November 8, 2017. Since I am researching about a scientific and technical-laden topic, date matters; and this source is completely and fully up to date.
S	Although I couldn't find a "Works Cited" list anywhere, I noticed there are many links in the body of the blogs; and when pressed,

they are all active. Sometimes, there are sources that are referred to in the blogs, which proves that the research is justified and backed-up by other sources.

Appendix 3: Product Criteria

What will my outcome or product look like? My finished product will be an exhibition of three different molecular gastronomy appetizers at our school's auditorium opening. Specifically, the dishes will be: chocolate spheres with sprinkles, blue cheese in fig confiture, and honey-glazed gorgonzola with honey caviar (pearls). There will be 33 of each, making 99 dishes total. The food will be presented well, with proper cutlery and utensils.

What techniques will I use? I will use three popular molecular gastronomy techniques: spherification, gelification and reverse spherification.

How will I present the information? I will have information about each dish, how it was made, the ingredients, and the specific technique used. I will also explain what molecular gastronomy is and whether it's safe due to the chemicals present. I'll have leaflets and flyers for each dish, and a poster with a background about molecular gastronomy: origins, my process of discovery, etc. When people will come around to ask me questions about what my dishes are & the idea behind them, I will be there to explain personally, as well as with the help of my poster.

Who is the audience? I didn't intend for a specific audience, however since my dishes include acquired tastes, such as blue cheese and honey, kids aged 12 and less weren't my target audience. Parents, teachers and older students, grade 8 and above, was what I had in mind.

Crit eria	Criteria Break-Down (6 being highest)	Justification	Research
Visu al App eara nce	<p>5-6:</p> <ul style="list-style-type: none"> i.The food's color, aroma, gloss, translucency, the uniformity and general appearance look very visually attractive and aesthetically pleasing. ii.The regularity of surface and gross textural and consistency properties look excellent. iii.The dishes are excellently well presented (i.e., cutlery such as dunes and decorative toothpicks are provided), and nothing is falling apart. iv.The dishes look exactly as they do in the recipe book. 	<p>The visual appearance of the food is crucial to molecular gastronomy. The purpose of molecular gastronomy is combining scientific and artistic principles to create a avant-garde version of foods. Art plays a crucial role in molecular gastronomy; appearance of food is what this science tries to manipulate. My main goal is to demonstrate to people what molecular gastronomy dishes look like, and they should be aesthetically pleasing, and look just as the recipes I took from, intended them to look like.</p>	<p>The science of food appearance has attracted consistent attention over the last twenty years. The physical specification of appearance and optical properties are vital to any type of gastronomy; especially molecular gastronomy. Based on the book "Sensory properties of foods" pages 166-205, I'd realised that appearance was crucial to my product, and that it guides people's flavor expectations, classification and perception.</p>
	<p>3-4:</p> <ul style="list-style-type: none"> i.The food's color, aroma, gloss, translucency, the uniformity and general appearance look visually attractive and aesthetically pleasing. ii.The regularity of surface and gross textural and consistency properties look fine. iii.The dishes are weakly presented (i.e., improper dunes are presented and/or decorative toothpicks aren't provided), and some things are falling apart. iv.The dishes look somewhat similar to the recipe book. 	<p>Also, the first impression of a food is usually visual, and a major part of our</p>	

	<p>1-2:</p> <ul style="list-style-type: none"> i.The food's color, aroma, gloss, translucency, the uniformity and general appearance do not look visually attractive or aesthetically pleasing. ii.The regularity of surface and gross textural and consistency properties look poor. iii.The dishes are very poorly presented (i.e., no proper cutlery is provided), and most things are falling apart. iv.The dishes look nothing at all as they do in the recipe book. 	willingness to accept a food depends on its appearance (optical properties).	
Cooking Techniques	<p>5-6:</p> <ul style="list-style-type: none"> i.A large range (three or more) of the most well-known modern molecular gastronomy techniques are used in the dishes. ii.The cooking techniques are used and presented perfectly (i.e., the chocolate spheres are <i>spherical</i> and have a <i>thin membrane</i>; the honey caviar <i>doesn't turn to liquid</i>; the glazed cheese <i>stays coated in confiture as one</i>). 	Molecular gastronomy uses scientific techniques and principles to recreate foods; the revolution of technology is the entire idea behind it. Thus, I must use a range of techniques in order to explore as many of them as I can for my own knowledge and personal understanding, for attaining my global context of 'Scientific and Technical Innovation', and most importantly, to show people what are the specific technical techniques that are present in molecular cooking.	According to (Gourmet FoodWorld.com, 2017), molecular cuisine takes advantage of many technical innovations from the scientific discipline, and the top five most popular molecular gastronomy techniques are: spherification, gelification, sous- vide, emulsification, and reverse spherification.
	<p>3-4:</p> <ul style="list-style-type: none"> i.A sufficient range (two or more) of the most well-known modern molecular gastronomy techniques are used in the dishes. ii.The cooking techniques are used and presented adequately, with some mistakes (i.e., the chocolate spheres are <i>wobbly</i> and <i>not all of them have a thin membrane</i>; some honey caviar <i>turns to liquid</i>; the confiture <i>melts off</i> the cheese, becoming separate entities). 		
	<p>1-2:</p> <ul style="list-style-type: none"> i.A sufficient range (two or more) of the most well-known modern molecular gastronomy techniques are used in the dishes. ii.The cooking techniques are used and presented adequately, with some mistakes (i.e., the chocolate spheres are <i>wobbly</i> and <i>not all of them have a thin membrane</i>; some honey caviar <i>turns to liquid</i>; the confiture <i>melts off</i> the cheese, becoming separate entities). 		
Shape	<p>5-6:</p> <ul style="list-style-type: none"> i.The shape of each dish is completely even, symmetrical and consistent throughout all the samples. -The chocolate spheres have a <i>round and bulbous shape</i>; the glazed cheese has a <i>cubic, square shape</i>; the pearls are <i>plump</i>. 	Shape of each dish has to be symmetrical and regular throughout all of the samples. Since my topic of interest is molecular gastronomy, and not a lot of people are aware what it is, they don't know what, for instance, a chocolate sphere shape should look like. Thus, the shape will be the first thing that draws people's attention: I must have a	Based on (Khymos, 2017), "the shape of particles not only affects the mouth-feel and taste of food. It is vital that food manufacturers have a greater understanding of the influence of both particle shape and size on ingredient properties he bulk density, compressibility and flowability of raw materials; the enjoyment of food are highly dependent on particle
	<p>3-4:</p> <ul style="list-style-type: none"> I.The shape of some dishes is uneven and asymmetrical throughout the samples. Some of the dishes are askew. -The spheres have a <i>spherical semblance</i>; the cheese is <i>somewhat rectangular</i>, the pearls are <i>irregularly shaped</i>, somewhat as a circle. 		
	<p>1-2</p> <p>None of the shapes of dishes are even, symmetrical or consistent. All of the dishes look dismembered.</p>		

	-The spheres look <i>flat</i> and/or <i>squished</i> spheres; the cheese looks like a <i>blob</i> , the pearls have turned to a <i>mush</i> .	well-formed, regular shape for each dish.	shape”
Education	5-6: i.All of the processes, techniques, ingredients and chemicals will be explained step by step in the according flyers. Pictures support the information well. ii.An additional overview about molecular gastronomy will be provided in a poster that offers strong, relevant information. iii.Every question is answered with detail and competence .	The goal of this project was to “educate people about what molecular gastronomy is through an exhibition”. Educating people simply through a demonstration of molecular dishes is not enough; providing information through the means of flyers and a poster is crucial.	Based on (Birch & Parker, 1977), the best ways to inform an audience is through a combination of verbal and non-verbal information. The top-five ways of best received non-verbal information are: posters,flyers, a memo, a video, and an article; I will use the flyers and posters. Through verbal communication (answering the people’s questions, and politely engaging in educational conversation, I will have successfully combined the verbal and non-verbal information giver.
	3-4: i.The flyers are not detailed, however they offer a general overview . The pictures do not aid the information. ii.A poster is hung up, but fails to deliver apprehensive information. iii.Answers are briefly explained , and I have trouble elaborating .		
	1-2: i. The flyers do not offer any relevant information whatsoever. ii.The poster is not informative or pertinent to the product. No images are present. ii. None of the questions are answered correctly (or at all) .		
Safety	5-6: i.All of the ingredients are purchased and prepared in no more than three days until the exhibition date. ii. All of the ingredients and technical equipment are bought from reliable places. iii.Food objects are stored in a cold and safe environment. vi. Standard hygiene rules are followed (disinfecting hands/tying hair/washing dishes). v. I will cook and serve in a clean environment. iv. No chemical agents except for soy lecithin, agar agar, sodium alginate and calcium chloride are used. Every chemical and ingredient is explicitly listed on the flyers.	This is, perhaps, the most important criteria for my success, as it directly affects the immediate health and wellbeing of approximately fifty people (which I am solely responsible for). Safety, proper sanitation and hygiene are all important for my product, since if I won’t follow my criteria for ‘Safety’, I might spread bacteria around a kitchen by cross contamination, thus endangering people who will eat my food. To prevent any cross contamination, my criteria strands are vital for the safety of my food.	Based on (Global Food Safety Resource, 2017), food safety has a lot to do with how the chef (me) handles food, stores food, cleans the kitchen surfaces and cutlery that comes in contact with food, and maintains personal hygiene when cooking, which I have included all in my criteria strands. After consulting the Codex Alimentarius Commission (Fao.org, 2017)which is a collection of standards, guidelines and codes of practice adopted to protect consumer health and promote fair practices in food trade, I knew that the specific strands for the criteria I’d created cover everything needed for my food to be safe for general consumption.
	3-4: i.All of the ingredients are purchased and prepared in three to five days until the exhibition date. ii. The majority of the ingredients and technical equipment are bought from reliable places. iii.Food objects aren't stored in a cold and safe environment. vi. Not all standard hygiene rules are followed (no hand/dishes are washed poorly/hear isn't tied). v. I will cook and serve in an unsanitary environment. iv. Some chemical agents except for soy lecithin, agar agar, sodium alginate and calcium chloride are used. Some of the chemicals and ingredients are unclearly listed on the flyers.		
	1-2: i.All of the ingredients are purchased and prepared in a week or more until the exhibition date.		

	<p>ii. None of the ingredients and technical equipment are bought from reliable places.</p> <p>iii. Food objects are stored in an inappropriate & dirty environment.</p> <p>vi. No hygiene rules are followed (hands are dirty/the dishes aren't washed/the surfaces and cutlery aren't disinfected).</p> <p>v. I will cook and serve in a insanitary environment.</p> <p>iv. A lot of chemical agents except for soy lecithin, agar agar, sodium alginate and calcium chloride are used. No chemical or ingredient is listed on the flyers (or stated).</p>		
Size	<p>5-6:</p> <p>i. The size of each individual dish type is perfectly uniform and regular throughout all the samples.</p> <p>-The chocolate spheres <i>entirely</i> fit on their dunes, and weigh 20 grams each; the fig-glazed cheese is <i>each</i> 2 cm wide and 5 cm long; for the honey pearls, in each dune, there will be <i>exactly</i> 10 honey pearls.</p>	<p>Size is an important criteria, since similarly to shape, for the appetizers to look professional and appealing, the size must be regular throughout all the samples. Each specific dish will have each own specification for size, so that there would be no deviations from the set standard.</p>	<p>Based on (Gaard, 2017), the auditorium opening will be more of an appetizer-serving event, meaning that the size of a single serving should be small, easy-to- take and eat on the go. Thus, the specifications of the each dish are based solely on the fact that they should be hor-d'oeuvre like. I will research the recipes from websites and cookbooks, however I will modify them for my situation.</p>
	<p>3-4:</p> <p>i. The size of each individual dish type is adequately consistent and unvaried throughout all the samples.</p> <p>-<i>Not all</i> chocolate spheres fit on their dunes; the fig-glazed cheese is <i>roughly</i> 2 cm wide and 5 cm long; for the honey pearls, in each dune, there is <i>approximately</i> 10 honey pearls.</p>		
	<p>1-2:</p> <p>i. The size of each individual dish type is not uniform and irregular.</p> <p>-The chocolate spheres <i>either</i> are <i>too large or too small</i> for their dunes; <i>none</i> of the fig-glazed cheese are 2 cm wide and 5 cm long; in each dune, there are <i>no</i> pearls present.</p>		
Quantity	<p>5-6:</p> <p>i. In total, exactly hundred (100) appetizers are present.</p> <p>ii. Fifty (50+) or more people have tried the food.</p>	<p>Accounting for an appropriate quantity of the product is essential, as I don't want there to be any leftovers (an overage looks negatively to the audience), yet at the same time, I want there to be exactly enough appetizers for everybody. Thus, quantity must be considered thoroughly.</p>	<p>According to (Gaard, 2017), no more than 100 portions will be required, since there will be approximately 50 people at the auditorium opening. Since I am making 3 separate dishes, 33 of each will total to ninety-nine dishes.</p>
	<p>3-4:</p> <p>i. In total, less than one hundred appetizers (99-70) are present.</p> <p>ii. Less than fifty (49-30) people have tried my food.</p>		
	<p>1-2:</p> <p>i. In total, less than seventy (70 and less) appetizers are present.</p> <p>ii. Less than thirty (30 and less) people have tried my food.</p>		

Appendix 4: Annotated Blog Excerpt

Compiled Resources & Completed Research		
Very helpful in terms of understanding "what is molecular", and talking about the set-up of my exhibition.	Herve This: "Molecular Gastronomy: Exploring The Science of Flavour" Book (hard copy)	✓ → Has tips on cooking "a la sous vide", and intro to molecular gastronomy. Very good resource & reliable, written by the instigator of molecular gastronomy.
The best blog I have seen so far with over 1500 followers. Who ask very similar questions to mine. Very useful & everything I need is on there.	Interview with [REDACTED]	✓
I had trouble with finding recipes using spherification, and this website has hundreds. Yay!	Skype-interview with [REDACTED] 17PM, Jan. 12	X → Scheduled for January 10th @ 4pm. He works at the culinary academy in Paris and knows EVERYTHING about molecular cuisine.
The first video that shows the science of reactions, not just recipes.	Khymos: Molecular Gastronomy = Blog	✓
Desperately needed this source to find information on properly serving & assembling foods for others. My hygiene does all vital.	"Sensory Properties of Food" Book = (pdf) X	X → Haven't read it yet, but supposedly a good book.
	"How Molecular Gastronomy Works" = Podcast	✓ → Amazing podcast! It's fun to hear actual experts talk about the origins of M.G.
	Molecular Recipes in Spherification=	✓ → Haven't read it yet.
	Molecular Gastronomy Techniques = (pdf) X	X → Haven't read it yet.
	"Deconstructing Molecular Gastronomy" = (pdf)	✓ → This report is like everything I'd learned summarized into one.
	"Scientific Cooking Techniques Explained" = Video	✓ → Exactly like "Deconstructing Molecular Gastronomy", but in a visual way.
	"Episode 11: Molecular Gastronomy" = Video	✓ → Haven't read it yet.
	"Molecular Gastronomy at Home: Taking Culinary Physics Out of the Lab and into Your Kitchen" Book= (pdf) X	X
	"Global Food Safety Resource" = web	✓ → A website with lots of info, chemicals and techniques explained.
	"Gourmet Food World"= web	✓
	"Modernist Techniques" = Video	✓
+ This perfect! A video that shows all molecular gastronomy techniques in just 7 minutes.		

Appendix 5: Blog Excerpt



Overview Of Work: I'm preparing for my mini-presentation with Miss [REDACTED] to ensure that the food selection is appropriate and suitable for the auditorium opening event (she's the main organiser). I did the three dishes over the weekend (2 of each), and will pack them up & bring her these on Monday at school. So far so good, I have finished my research analysis, and still have to edit some of the product criteria.

Specific Work Completed: On Saturday I made gorgonzola in fig confiture, chocolate spheres, and mozzarella in tomato coating...I don't like the tomato cheese, because it's very bland and tasteless. I'll ask Miss [REDACTED] if she likes all of the food, and if she thinks I could change something, I will.

Resources: I've talked to Miss [REDACTED] as a primary source about the logistics of the auditorium. Then, I used the recipe book pdf for creating all the food, and a youtube video about how to make a sodium alginate bath for reverse spherification (Episode 11: Molecular Gastronomy show).

Challenges: It was VERY difficult for me to find and order the dunes online...I was worried, because I didn't have any other alternative for putting the chocolate spheres in.

My Questions & Worries: The chocolate spheres have a very strange, slimy, transparent membrane....I should talk to o [REDACTED] about them, because he knows how to make grapefruit spheres (I hope that's the same thing)

Dates: consult with my [Project Plan](#) (preparing for auditorium opening= cooking & gathering things; finish up with 'Planning' section of report + finish PRODUCT CRITERIA!)

Appendix 6: Project Plan

Appendix 6: Project Timeline & Plan

Task	Pri ori ty	Due Date	Notes & Modifications
Brainstorm of Topic/Global Context/potential product	1	31/05	*Enter largest festival in Kiev with my molecular gastronomy dishes (molecular spaghetti) to inform people about molecular gastronomy
Complete Proposal Form	1	10/06	*Idea approved (might be too challenging)
Research over the summer	2	-----	
Gather all necessary materials & products for cooking	1	24/08	*Order chemicals (agar-agar, lecithin and soy) from Amazon; get special tubes for spaghetti squeezing

First Meeting with supervisor	1	1/09	*Every Thursday after school 5-10 min sessions
Conduct research plan; start gathering primary and secondary sources	1	8/09-1/10	*Order Herve's "Exploring The Science of Flavour" book from Amazon
Finish Draft of Section I	2	27/10	
Sign up for meeting with festival degustateurs Phone: +380665143218 (██████) Contact Sheet: Here : "Street Food Festival" *Their website (+rules of participation!)	2	1/11	1.Find a venue of the festival 2.Call the admission director & ask about my potential participation (teenager/not adult) 3.Figure out a cohesive thematic of dishes: 3 molecular spaghetti (chocolate/spinach/tomato) with toppings 4.Fill out form, assemble a team of five people, print out-shirts,designed a menu with photographs and appropriate prices 5.Have a degustation and Q&A session for 10 people 6.Make 10 portions of each dish & pack EVERYTHING to go
Product Criteria Due	1	3/11	Example of P.C.
Start festival preparations (agree upon three dishes & size & pricing)	1	5/11	1.Send them my FESTIVAL PROPOSAL form 2. Call & ask if it's okay that I'm underage (will have adults-my parents in team).
Make 10 dishes of each and bring to festival site	1	9/11	*One dish=150 grams (with toppings); cost=35 grn.
Festival Approval Grant-- DEGUSTATION DAY Their Address: ██████████ (Metro Lisova)	1	10/11	Grant received (they wrote me back)! Was accepted, but I did not accept due to not being able to make 600 portions of food/ making a billboard. *Send an apology & refusal:(
Modification: scale back. Figure out new idea with supervisor's help & modify parts of research plan	1	13/11	* New Idea= scaled back from original to auditorium opening *Agreed upon with both coordinator and supervisor
Primary & Secondary research analysis	1	18/11	Use the CARRDS template
Finish Draft of Section II	2	20/11	
Send email to Miss █████ & Miss █████ for permission to serve molecular gastronomy dishes at the auditorium opening	1	21/11	Present idea to Miss █████/write to Miss █████ 1. Find suitable recipes that would encapsulate at least 3 different techniques 2.Ask about details (how many people will come, where will my space be) 3.Make a list of things to buy
Auditorium opening - ask Miss █████ for logistics	1	23/11	* About a hundred total dishes, meaning 33 for 3 types
Choose three suitable dishes & buy appropriate cutlery	1	24/11	* Must be in appetizer form with cutlery 1.Order 3 trays & 35 dunes

Mini-presentation of my chosen dishes for Miss [REDACTED] to see whether it's suitable @ 15:00	2	25/11	1.Prepare & bring them to school for Miss [REDACTED] to try and decide whether yes or no for auditorium opening *Miss [REDACTED] approved everything; tried & liked it
Redo product criteria tailored to new product	1	26/11	
Buy all ingredients & objects necessary	2	26/11	*Consult my Things To Buy sheet
Design & print 3 flyers and poster; prepare to answer questions communicate with people	1	27.11 -28.1 1	*Print approximately 20 flyers at school *Poster must include background information
Prepare 33 dishes for each course the day before (making 100 total); gather all things.	1	28/11	• Make sure everything fits my product criteria highest strands!!!
Auditorium Opening! (Good Luck)	1	29/11	!Done with my product!
Two master classes on foams & spherification	1	1-14. 12	Address: [REDACTED]
Finish Draft of section III	2	20/01	
Send pictures of product to supervisor	1	26/01	*No more than 5 pictures
Evaluation of product against my criteria & Skype interview with molecular gastronomy chef	1	2/02	Molecular gastronomy chef Skype (at 17:00)--[REDACTED]
Finish Draft of section IV	2	9/02	
Choose 10 appendices	1	16/02	*No more than 10 pages total
Finalise report (check with criteria)	1	2/03	
Final meeting with supervisor	1	10/03	*Send report to coordinator & supervisor to look through
Final Report Deadline	1	16/03	Submitted with resources + 10 appendices before 15:00

Appendix 7: Supervisor Meetings Recording Template

Date of Meeting 1/09/2017	
Points to be completed before the meeting: - Create a PP Folder in Drive - Make a copy of 'supervisor meetings record temp late' and put it in said folder - Email supervisor about meeting her at 15:00 after school & introduce topic of interest - First Journal Entry!	Notes from the meeting: Chose a Global Context-- Scientific and Technical Innovation" & how it links to my TOI & with product Research and collecting information Begin research (where to find information); primary vs. secondary sources, 'a range'. Research cycle & academic honesty

The importance of my process journal

Action:

Write a **journal entry!** about my goal (in one sentence). Then, create a research plan that has my research question--- it all has to link back to the Global Context(!) Format a suitable research plan & use a varied range of primary AND secondary sources (use books/journals/ interviews/google scholar). The most important thing: write in journal & collect ALL research in a united place for later bibliography.

Next Meeting: **7/09** at Library ([Research Plan!](#))

Appendix 8: Communication with school administration

Appendix 8: Communication with School Administration

Good Afternoon,

As part of my personal project, I am participating in an event with molecular gastronomy dishes. I was wondering whether I can get permission to make about 90 little molecular gastronomy hors d'oeuvres (appetizers) that would go well with the cheese & wine at the Auditorium Opening on the 29th of November. This would entail me coming a bit earlier with the prepared food and the serving dishes-- it would be easy to eat on the go. I would need one table to lay it all out on and have an informative bulletin with a brief explanation of what are the dishes and how I prepared them. Please let me know if this could work out, and any additional questions I can answer.

REPLY:

Hi, [REDACTED] --

Sounds like Ms [REDACTED] has already approved. Glad you've found a good event to do this. Looking forward to trying some of them! Miss [REDACTED]

Appendix 9: Communication With Peers (Facebook Group)

Just now

Hey guys! How you doing with your reports? I'm almost done!

Just a small reminder: the appendices MUST be a maximum of 10 pages long, 11 point Arial. No more than 10 appendices allowed. All of the personalised names & specific places SHOULD be crossed out (just highlight it in black) for privacy. Both in the report, and in the appendices. Also: please don't forget to come with me to the Personal Project Club on this Tuesday, because it's really helpful. I've emailed the librarian, and set up a meeting with her, so that she could read my report, and leave some comments & suggestions. I recommend you do that with me. Come along! The more help the better!

Note-- she also has a session on how to format your resources & bibliography in Harvard on Thursday at lunch. I'm coming, cuz I need some help with citing my interviews. Tag along please.

FINAL REMINDER: The reports MUST be submitted in the folder by 16 March, 15:00 PM ET.

Btw, bellow's a link: I found all of the criteria, broken down for us to understand easier--read it carefully.

EXAMPLE 2

A Complete History of the Ukrainian Conflict

Year: 2017-2018

Word Count: 3497

School: 001124

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Investigating

Topic of Interest

My topic of interest is the conflict currently occurring in Eastern Ukraine. This includes the social, political and economic causes of the conflict, as well as the development of the conflict. I have chosen this for my Personal Project because I have personal connections to Ukraine, having lived here for most of my life, and because both of my parents' careers involve the conflict and it is a topic of discussion at home. As a result of this, Ukraine is more of a home to me than my native countries, and I wanted to make more of an effort to know it better.

Furthermore, as an expat I often get questions in my home countries that demonstrate the lack of awareness of the general public. I hope to learn more about Ukraine and how the nation functions, and why the conflict started and what repercussions it has had. I hope to gain different perspectives on life in Ukraine, both local and international, and to be able to increase public awareness of the conflict. I have been interested in this since the occurrence of the Euromaidan. My interest in the conflict increased when I moved back to Ukraine in 2015, and realised how inaccurate the media portrayal was.

Global Context

My Global Context is Fairness and Development. Applying this Global Context allowed me to focus on the development of Ukraine as a nation through the social, political and economic progress they have made, linking this to access to equal opportunities because of the imbalance in Ukraine's governing systems. I also explored the development of the conflict and relationships between different communities, both within Ukraine and internationally, through the lens of the relationship between communities. The lens of community was particularly important as it gave me the opportunity to look at the conflict both from the lens of the internal community (that is to say, the different communities in Ukraine and how they interact, as well as Ukraine as a whole community in and of itself), but also from the lens of external communities. This allowed me to also look into Ukraine's place in Europe and even the world, and explore international relations with Ukraine and individual relationships with world powers such as Russia or the USA, to learn more about how the international community assisted in the development of the conflict, and to learn more about how they are helping to solve the problem.

A Highly Challenging Goal

My goal is to inform Ukrainian-resident adults and teens about the conflict in Eastern Ukraine, including the political, economic and social reasons for its occurrence. My product will help me meet my goal because by creating a website I will be able to get the information out to more people, hence informing them. This is a highly challenging goal to meet particularly in the research portion of the project, as it will require me to spend a lot more time on one particular subject or task than I ever have previously. This goal is further made challenging by the fact that I will need to take my work much further than I normally do. The completion of this goal will test my critical thinking skills, a set of skills which I find challenging. This project will also test my social skills as I will have to go further afield to seek out experts to interview. Furthermore, it will be very difficult to be unbiased, particularly because of my personal connection to this region having lived here so long and my judgmental character. This will pose difficulties during the product creation stages, and will require careful planning and both self and expert review. This goal is highly specific, as it gives me a strict set of limits to work within (only things which are relevant to the conflict in Ukraine). It is also achievable, as I will have achieved my goal if I manage to create a public platform on which all of my research is shown, in order to allow people to read it and inform themselves. Finally, my goal is relevant, as the conflict, unbeknownst to many, affects millions, and despite the lack of media attention, is still ongoing.

Prior Learning and Subject Specific Knowledge

The MYP programme (I&S in particular) has given me some prior knowledge into this topic. I have had I&S units in Human Rights, Economic Development, Humanitarian Aid, and Migration. This prior learning has helped me in my Personal Project because the unit on Human Rights has given me some knowledge concerning the basic social rights of people, while the Economic Development unit gave me the vocabulary to better understand the economic development of Ukraine and economic factors affecting the conflict. The unit on Humanitarian Aid taught me about how NGOs and governments operate when giving humanitarian or development aid, which is essential to understanding the international roles played in the conflict, while the unit on Migration taught me about IDPs and Refugees, and the political, social and economic motivations which lie behind them. This gives me direct knowledge of the aid necessary for IDPs and other such related issues. Outside of school, I have participated in two Yale-run MUN conferences. In analysing the contributions of these conferences, I believe they have given me some political knowledge in different fields ranging from energy (which is relevant to Ukraine-Russia relations) to migration (which is relevant to the ongoing IDP crisis). The conferences' European focus has also allowed me to better understand politics of individual nations, the EU and Europe as a whole.

Research

For my research, I have used a variety of different source types, including both primary sources in the form of interviews and talks, as well as secondary sources such as documentaries and

newspapers. I also used an extensive range of different sources within each category, including government and NGO databases, newspapers, documentaries, published novels, official reports, and live interviews. I used Media Literacy ATL Skills during my research, by looking at a wide range of perspectives on the conflict, from EU and other International Organisations to Ukrainian government papers and even Russian news articles on the subjects. I also demonstrated my Information Literacy Skills by collecting and recording over 15 pages of information (in my own handwritten notebook) as well as looking at and verifying over 25 different sources. When starting my research, I began with some light background reading (a OHCHR report which touched on some of the conflict's causes). I learned that the conflict had in part been caused by "significantly deteriorated levels of social cohesion, trust, and cooperation throughout the country" (UNDP, 2015). From this I learned that I needed to look into Ukraine's development as a nation, as well as its economic development and the social structure of Ukrainian society. I also learned about Ukraine's issues with a national identity from *Borderland: A Journey Through the History of the Ukraine*, which made me realise how much of a national focus I had to have in my project. I used this to create a Research Plan (see Appendix 1), in which I could figure out what I needed to research, and by when. Using this, I did my research on the various topics I had, and recorded all the information, listing which source all of the information had been obtained from. After completing research, I went back through the notes and discarded what I didn't need. I then went back and evaluated all of my sources using the CARRDSS evaluation system. This allowed me to decide which would be most useful for my project, and which I could disregard. See Appendix 2 for CARRDSS evaluations.

Planning

Product Criteria

I chose to divide my Product Criteria in a way very similar to the Design Specifications used in Design. I created a set of multi-dimensional criteria, divided into categories based on the materials I would use, the information I needed to include, the formatting of the product, the visuals I would include, and the audience that I was creating my product for. To develop rigorous criteria, I applied the findings of my research. Creating specific criteria based on my research also allowed me to use my research (where possible) to justify the importance of the criterion. I created my product criteria in the form of a rubric, which would later make it easier for myself to evaluate my work. For product criteria (and the criteria justifications), please see Appendix 3.

Planning and Recording the Process

At the beginning of the project, I created a highly-specific plan for the project. This included both short-term due dates specific to my project, as well as the long-term due dates of the project designated to me by the school. This plan can be seen in Appendix 4. I broke my work down into manageable steps, designating myself from August to early November to get the secondary research (everything but the interviews) finished. From early November to early January I would then concentrate on doing my product, completing my Interviews by early January as well. From early January to the final due date, I would then be working on my Personal Project Report. I decided to give my research a lot of time because of the sheer amount of research that this project would need. I then made use of my Christmas Holidays to get the product done, seeing as I would have plenty of time while I was out of school. This also allowed me to spend almost two months on my report afterwards, making sure that it was as perfect as possible before

handing it in. Along the way, I had bi-weekly meetings with my Personal Project supervisor, which started in early September and continued on until the final week of Personal Project. I used these meetings to keep myself on track and honest, while also updating my supervisor.

Self-Management Skills

I used a wide range of self-management ATL skills. My use of Organisational Skills was highly effective, and I demonstrated my skills by planning my short and long-term assignments and working towards those deadlines. Another strength in this ATL department was that I used my Process Journal to keep an organised system for all of my information, so that I could have it on hand if and when I needed to refer to it. I also showed my strengths in Reflective Skills by considering my own personal learning strategies, particularly when trying to absorb new information. For instance, because I know that I have a hard time remembering things when I type them, I first did all of my research written out by hand in my own words. This allowed me to better remember information later on, when I began working on my product. My weaknesses fell more in the Affective Skills category, as I am a very high-strung and emotional person, and tend to get very easily carried away and induce stress and anxiety on my own. However, I practiced my Affective Skills and although it was difficult, I managed my stress by enrolling in various After-School activities such as sports and Drama. This allowed me to release stress through action or self-expression, and to think about something else for a while and take my mind off of things, thereby allowing me to return to the Personal Project with a more positive and relaxed mindset.

Taking Action

My Product

My final product was a website. This product helps me meet my goal, because as a public site, it allows me to “inform Ukrainian-resident adults and teens”, and reach a maximum of people in an easy way. The medium of a website is also easily accessed and navigated, and has the capacity to provide information in an interesting and engaging manner. My product was shaped by my Global Context of Fairness and Development, because throughout my product, I concentrated heavily on the relationships between different communities in Ukraine and their impact on the conflict. For instance, in one section of my website, entitled “International Players”, I discussed Ukraine’s relationships with a variety of important International Powers, including Russia, the EU, NATO, etc., and explained how their joint history with Ukraine led to the development of today’s conflict. When I developed my product, I did it considering my product criteria, and I feel like it was very successful. I met all of my criteria to a high standard, and completed a product that I was proud of and that I felt was a true culmination of my research and work. I also asked other people (including some of the experts to whom I had spoken) to evaluate it, and they agreed with me. My product was high quality, because the information on the website includes graphs, and both interactive timelines and maps to appeal to a variety of learning types. It was visually engaging and easy to navigate, and had a varied and interesting combination of images and text.

Thinking Skills

I used a variety of critical and creative thinking skills. Some of the critical thinking skills that I used included recognising unstated bias and assumptions, which I did throughout the research process, especially when looking at media sources such as Russian or Ukrainian documentaries and newspapers. I also analysed complex concepts (such as Ukraine’s IDP issue) and broke it down historically, then synthesized it back into my product to create a new understanding for future readers. I also applied my creative skills effectively, such as when I created visual diagrams and mind maps to map out my information and learning, to figure out what I needed and what could be discarded. This mind map can be found in Appendices 5-6. Another example of my creative skills is the flexible thinking that can be seen in my product, particularly where I discussed Ukraine’s issue with systemic corruption. Here, I used available information and research materials to create a series of complimentary arguments for the existence of corruption in Ukraine, as well as its origins and its continued existence. Another good example of my thinking skills occurred during the interview stage of my project, whereby I was reading a financial report which said “The mining industry, which depends on demand for inputs from metallurgy, lost 20% yoy.” (Segura, Edilberto, et al., 2009). Upon reading about this and Eastern Ukraine’s other financial problems, I realised that the conflict was largely internal, rather than an external or historical event. This made me realise that Ukraine’s involvement in the USSR was of a much lesser importance than the state of the nation within its borders. I was then able to transfer this knowledge from my research to develop more questions about the

state of Ukraine's interior affairs, as opposed to its history. This changed my product by making it more focused on Ukraine's inner communities and how they interact, as opposed to the world's impact on Ukraine.

Communication and Social Skills

Upon analysis of my communication skills, I was able to communicate with variety of different people to create a product which I can be proud of. Throughout my project, communication with my supervisor was essential. We communicated through bi-weekly meetings in which I would update them on my progress, and get any comments on my work that were necessary. We also communicated extensively through email (for an example, see Appendix 7). With my supervisor watching, I felt more of a need to do my work on time and get it done to a high standard, which was very helpful. During my research process, I ran up against some economic terms that I was unfamiliar with. However, I used my communication skills to find the answer, and worked with the Economics Teacher, to figure out what the terms meant and what the ramifications of the information were. My communication skills outside of school were also highly effective, as I spoke to experts on the subject to find out more about the impact and presence of International Organisations in the conflict in Eastern Ukraine. For a full transcript of an interview, see Appendix 8. I conducted live interviews with various people, all with different nationalities, and this allowed me to use my intercultural understanding to interpret what they were saying and filter out their biases and assumptions. For instance, a Ukrainian expert might be a lot more open and opinionated than an international or foreign worker, but on the other hand, their views might be stronger or more radical, which could impact the reliability of the information. One final way in which I demonstrated my social and communication skills was through communication with other students in IB schools across the world. For instance, in talking to a friend from Dubai about our personal projects, I was able to get a sense of what students were doing around the world for their Personal Projects, and what standards looked like.

Reflecting

Product Evaluation

All in all, I met all of my product criteria. I reformatted my criteria into questions and surveyed some of the topic experts that I had previously spoken with, asking them to evaluate the product if possible. The responses that I received were very positive. My product was highly effective because I created an easily-accessible platform discussing the economic, social and political events which brought about the conflict in Eastern Ukraine. I used a variety of different forms of media, as well as a blend of text and image. My product was also interactive, and was created with a specific target audience in mind (politically/international relations-interested adults and older teens), which appears to fit as well. The product has a large volume of information, encompassing all of Ukraine's history as an independent nation. It discusses events which occurred within Ukraine, and their importance in the conflict. The website also includes information on important organisations and nations related to Ukraine, and discusses their history with Ukraine and their impact on the conflict. Lastly, the website includes opinions and stories of real-life people in the form of verbatim interviews, which is aimed at giving the general public a better idea of what is going on and what it is actually like to live in Ukraine and experience the conflict. For a full evaluation of the product, see Appendix 9.

Reflection: Topic and Global Context

Through my exploration of Eastern Ukraine's conflict, I have learned more about my country of residence and its current affairs. Through my research, I learned about the national and global events that have occurred and how they have affected Ukraine and the conflict. I also learned about the effects that Ukraine's conflict has had both on its people and internationally, and I have learned about how both Ukraine's and other nations' governments/organisations are trying to solve the conflict. My opinions on governments and people have certainly changed, although unfortunately for the worse. I have less confidence in Ukrainian governance, and a much less idealistic view of international politics, which is more realistic, albeit depressing. Nevertheless, I am motivated to help change the problems I have identified in the country through my work, and look forward to being able to do that next year in the CAS programme. I am glad that I used the Global Context that I did, because it allowed me to look really closely at the events which have occurred and how they have affected different communities, within Ukraine and globally. Through my project, I have expanded my knowledge of the "Fairness and Development" global context. I learned about the Fairness aspect by learning more about governance and how individuals and entities use their power (such as Yanukovych), and learned more about the Development aspect by learning about how democratic and political processes and civil society help in conflict management and in the promotion of peace.

Reflection: An IB Learner

Looking back at the process, I have realised that I was a Risk-Taker and Open-Minded. One way in which I demonstrated my Risk-Taking abilities was through the interviews I conducted during the project. I was able to walk into rooms with people who knew a lot more than I did and ask them questions to be able to find out more, as well as later have them judge my work. I also demonstrated my Risk-Taking abilities by taking on such a large and all-encompassing topic. The time, dedication and difficulties that I faced (such as unreliable or censored information), as well as the lengths I went to to get the information I needed (sending emails to dozens of strangers, and travelling across town and sometimes even out of town to get interviews done), made the task daunting. I demonstrated my Open-Mindedness during the research process, by looking through and listening to the opinions of people I normally wouldn't (such as news outlets like Russia Today), as well as through the consideration of all of the different perspectives and possible answers that there were to any given problem. In this way, I demonstrated that I am internationally-minded, by looking at not only that which I knew and the cultures that I understood (such as my own, and that of Ukraine), but also working to understand the cultures of others, (in particular Ukrainian and Russian culture, and their connections to Europe). Particularly in political terms, I learned about global connectivity, and how we depend on one another. I understand now how the skills I learned in the MYP helped me in my Personal Project, because without the learning of global citizenship, analytical, creative, communication and social skills that I have learned in the MYP, I would not have been able to learn about the world, and Ukraine, in the way that I have in the past few months.

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Appendix 1: Research Plan

Topic	Source Types (Where to Start?)	Completion Date (At the LATEST)
History: USSR	Library: History Books History Teacher/Librarian to Advise	Aug. 31
History: Independence	Borderland: A Journey Through the History of Ukraine - Anna Reid	Sept. 7
History: Kuchma	Online Sources (History Websites?)	Sept. 14
History: Orange Revolution	Kyiv Post Archived News(?)	Sept. 14
History: Yushchenko	Online News Sources Archives	Sept. 26
History: Global Financial Crisis	Financial Reports (IMF, EU, World Bank)	Oct. 9
History: Yanukovych	Online Websites, BBC, Encyclopaedia Britannica	Oct. 16
History: Euromaidan	Winter on Fire Documentary, OHCHR Reports, Kyiv Post Articles	Oct. 23
Conflict: Important Battles	Ukraine Crisis Media Centre	Nov. 3
Conflict: Deaths and Injuries	OHCHR Civilian Casualty Reports, Ukraine Crisis Media Centre	Nov. 3
Conflict: Contact Line Development	OSCE Thematic Reports	Nov. 3
Conflict: IDP Figures	IOM, OHCHR Reports	Nov. 3
International Players (NATO, EU, Russia, US, IMF)	NATO website, EU websites, CIA.gov, IMF website, News websites	Nov. 10
Interviews (Int. Org. Workers)	EU contacts	Jan. 19
Interviews (IDPs)	Int. Org. Workers/EU Contacts	Jan. 19

Appendix 2: CARRDSS Evaluations

Ukrainian History Before Conflict 1991-2013		
Borderland: A Journey Through the History of Ukraine - Anna Reid	Information	
<p>Project Purpose/Implications: This source had a lot of information on the first 5 years of Ukraine's existence as an independent state. As such, it highlighted Ukraine's initial successes and failures as a budding nation. It also discussed issues that Ukraine continued to have in future and gave me an excellent view of a newly-independent Ukraine, as well as what the political systems, economy and social climate of the nation were. This directly ties in with my final product, as it will allow me to examine Ukraine's progress as a nation, and can be used for comparison to a more modern Ukraine in order to find places in which Ukraine has maybe worsened as well.</p>		

CARRDSS:Credibility-

Ms. Reid has a degree in Russian history and reform economics from London University, and was also the Kyiv correspondent for the Economist from 1993-1995. Hence, she knows much about the history of the USSR and as such, Ukraine's development and role. Furthermore, she actually resided in Ukraine and was as such able to experience the occurrences she writes about firsthand.

Accuracy-

The information presented in this text fit with research from the General Background reading that I did earlier. Furthermore, upon investigating some of the sources found in the footnotes of the text I found more credible sources (gov. institutions, NGOs, etc.) which backed up the text's information.

Reliability-

The reliability of the source may be put slightly into question, as it does include interviews from unreliable people, however this gives the "other side's" opinion, if you will. Furthermore, there are several biased terms and phrases/words used to describe situations which also indicate a bias towards the West's view of Ukraine and a firm dislike of Communism, which muddles Ukraine's early history. This means that I need to be careful when using this source.

Relevance-

(See Project Purpose/Implications)

Date-

Published in 1997. This is fine, as I only needed the book to cover the first 5 (1991-1996) years of Ukraine's existence, before the rise to power of Leonid Kuchma, as I would need to do a lot more research on that next segment of Ukrainian history.

Source-

The book cites several experts in the footnotes and at the end of the book, and the author also uses several interviews from different political figures/government officials of the time for comparison and to give a better sense of the "Ukrainian perspective". Not all of these sources are credible, but this has been taken into account.

Scope-

The book takes a very scholarly approach to trying to explain Ukraine's position in the early 1990s. As such, it comprehensively explains all the information I need, including:

- Government systems
- Economic status
- Social Outlook
- Important Events/Figures
- Issues and Progress

General Background

Source 1
Ukraine Recovery and Peacebuilding Assessment

[Information](#)

Project Purpose/Implications:

This resource allowed me to read up on the history of the conflict, particularly in terms of knowing how Ukraine's national situation affected the attitudes of Ukrainians and how this fueled the divide between Eastern and Western Ukraine. This resource also gives a look into the Ukrainian financial crisis and political world.

Although not directly translating into much for the final product, this resource gave me a starting point from which to begin my research, as well as several avenues to pursue in doing so.

CARRDSS:Credibility-

Although no specific author is given, this report was co-written by the Delegation of the European Union, the United Nations, and the World Bank Group. All of these entities work specifically in Ukraine as NGOs, investors or both. The EU Delegation works, much of the time in correlation with the UN to boost Ukrainian development, often running projects with local government institutions or social development groups. The World Bank, on the other hand, invests in the Ukrainian economy, specifically in terms of international trade and energy. Hence, all three entities are very much

aware of the climate in Ukraine.

Accuracy-

I was able to verify all of the facts and figures mentioned in the report through other sources (Kyiv Post, BBC, University papers, etc.). Furthermore, the report includes footnotes and mentions other sources which corroborate the information.

Reliability-

This source is very much unbiased, as it aims to provide only facts and figures. However, it is important to mention that institutions such as the EU, UN and World Bank are very much pro-reform in Ukraine, so the information presented may be a little critical of past governments and hence be a little biased. However, this is quite easy to spot and avoid, as the language indicates the bias.

Relevance-

(See Project Purpose/Implications)

Date-

This report was published in 2015, which is towards the beginning of the conflict. Since this report covers the events and economic and socio-political factors that led to the conflict, this date is perfectly good for the information that I want to obtain from it.

Source-

All sources used by the authors of this report were cited fully in the footnotes and at the end of the report. To my knowledge, all of the sources are valid, as they are all well-known organisations or Ukrainian government institutions.

Scope-

This is a very comprehensive source to use for background/general information, as it explains several different causal factors for the conflict and the climate which led to the occurrences I am studying. It is a scholarly approach to the information.

Appendix 3: Product Criteria and Justifications

Presentation		
Grade	Criteria	Justification
1-2	<ul style="list-style-type: none">- The final project is not a website.- The website uses no images, maps or diagrams to aid the reader.- The website uses no interactive aids to improve the reader's understanding.	<p>In terms of medium- My product is a website, hence I will only be able to use web software to create my product.</p> <p>In terms of visuals- This too links to my research about information comprehension, as a paper from the University of Sussex stated that images and diagrams should be used whenever possible, in order to help people better understand information.</p> <p>In terms of presentation- As a good source is always as unbiased as possible, I will have full interviews for the sake of transparency and in order to give as unbiased a view as possible. The historical background and much of the information</p>
3-4	<ul style="list-style-type: none">- The final project is a website.- The website uses some images, maps or diagrams to aid the reader.- The website uses some interactive aids to improve the reader's understanding.	
5-6	<ul style="list-style-type: none">- The final project is a website.- The website uses a variety images, maps or diagrams to aid the reader.- The website uses a variety of interactive	

	aids to improve the reader's understanding.	will need to be presented in paragraphs, as much of it simply cannot be presented in any other way. I will present all other information with as many visual aids as possible, as my research about information comprehension led me to find a paper from the University of Sussex, which said that often information was more easily understood when represented in images or diagrams, and when people could interact with the information.
7-8	<ul style="list-style-type: none"> - The final project is a website. - The website consistently uses a variety of images, maps or diagrams to aid the reader. - The website consistently uses a variety of interactive aids to improve the reader's understanding. 	

Information/Content

Grade	Criteria	Justification
1-2	<ul style="list-style-type: none"> - Website does not include a variety of information about the conflict (e.g. History, Conflict Statistics, Interviews) - The information included is very limited in detail. - No images are cited. 	<p>In terms of Information-</p> <p>According to my research concerning the Euromaidan, part of the dissatisfaction with Yanukovych's regime was due to his movement towards Russia and away from NATO and the European Union, and as one of the catalysts of the Donbas conflict, this immediately implicates all of the above institutions and nations in the conflict. Furthermore, from my research about the economic recession of 2008 and how it affected Ukraine, it was clear that Eastern Ukraine's mining communities suffered more than the rest of the nation, spurring on the pre-existing regional divides, and causing tensions in regional politics. This demonstrates my need to examine Ukrainian development not just economically, but politically and socially too. Lastly, reading OHCHR reports I discovered that one of the largest issues Ukraine currently faces in relation with the conflict is the large numbers of IDPs fleeing the Donbas. This too has caused further regional tensions and strained the economy and social services, as the government struggles to cope and international institutions are forced to intervene in order to prevent a humanitarian crisis. This proves the necessity to perform interviews on IDPs, NGO workers and local residents in order to find out more about the IDP crisis as an add-on to the crisis. All of the above falls underneath historical background of Ukraine and the Donbas conflict, which is my final stipulation for the criteria.</p>
3-4	<ul style="list-style-type: none"> - Website includes some variety of information about the conflict (e.g. History, Conflict Statistics, Interviews) - The information included is somewhat limited in detail. - Some images are cited. 	
5-6	<ul style="list-style-type: none"> - Website includes a decent variety of information about the conflict (e.g. History, Conflict Statistics, Interviews) - The information included is somewhat detailed. - Most images are cited. 	
7-8	<ul style="list-style-type: none"> - Website includes an extensive variety of information about the conflict (e.g. History, Conflict Statistics, Interviews) - The information included is highly detailed. - All images are cited. 	<p>In terms of Copyright/Intellectual Property-</p> <p>I will explain the background of my interviewees as demanded by Ukrainian law, which says that there must be information on interviewees unless they ask to remain anonymous. I must cite my images as per</p>

		copyright law, as they will come from legitimate sources which are copyrighted. Furthermore, I am also following IB guidelines for the Personal Project, and as such believe that I should follow them to create my product too, and this means giving due credit to sources.
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Audience

Grade	Criteria	Justification
1-2	<ul style="list-style-type: none"> - Website content is not written for adults in mind. - Voice is not consistent. 	Many children and teens may not be able to comprehend some of the situations, particularly in relations to economics and politics, and they may not be entirely familiar with some of the terms used or be familiar with some of the institutions (such as NATO).
3-4	<ul style="list-style-type: none"> - Website content is partly written for adults in mind. - Voice is rarely consistent. 	
5-6	<ul style="list-style-type: none"> - Website content is mostly written for adults in mind. - Voice is somewhat consistent. 	
7-8	<ul style="list-style-type: none"> - Website content is entirely written for adults in mind. - Voice is completely consistent. 	

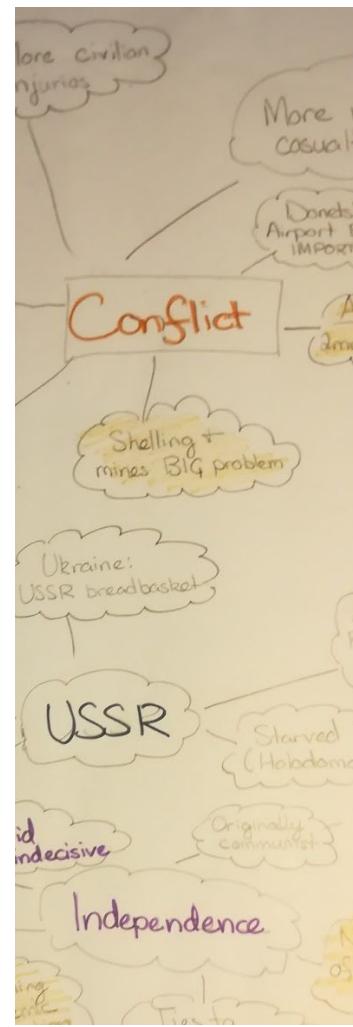
Appendix 4: Personal Project Plan/Timeline

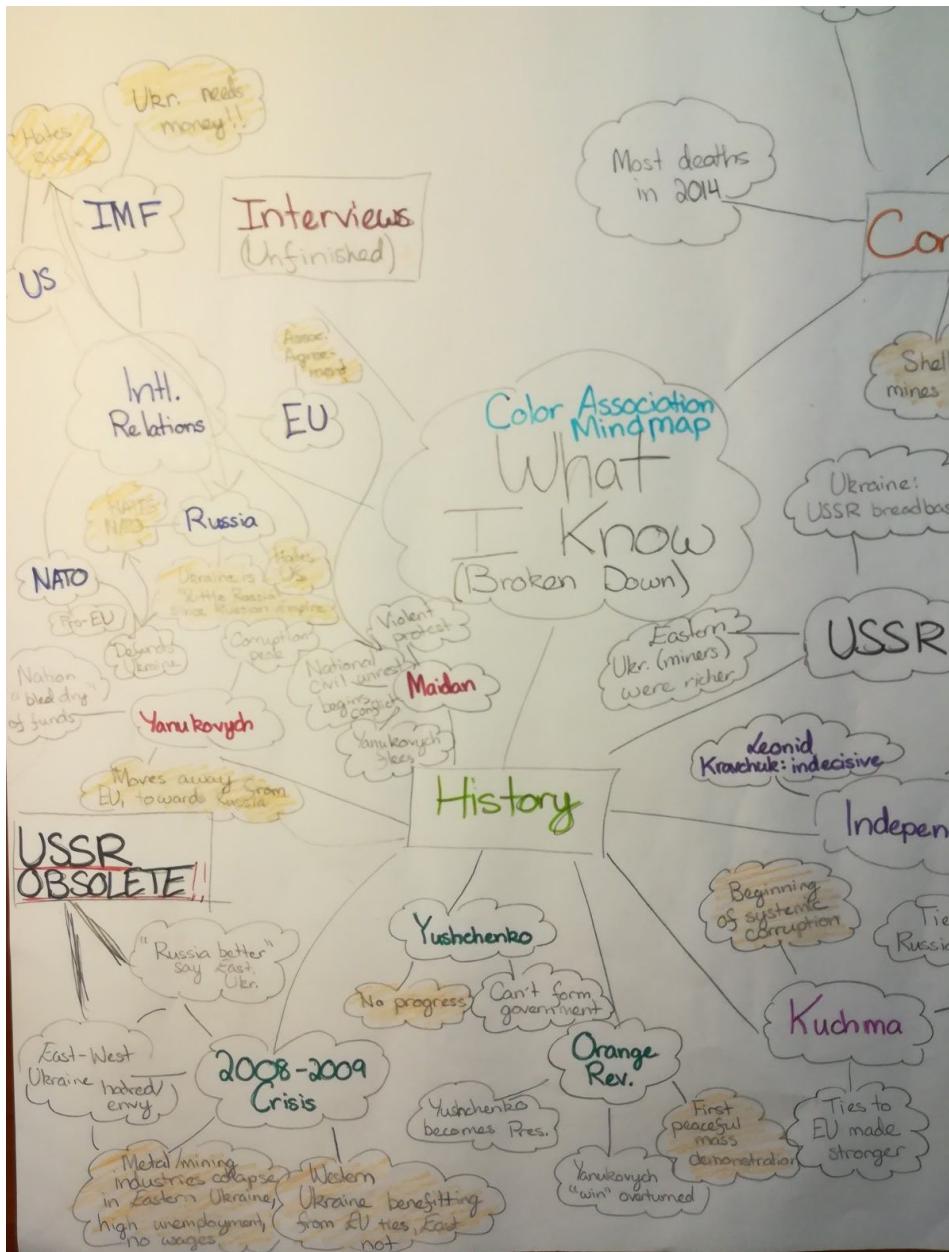
Section (Yellow Highlighted Represent School Deadlines)	Due Date	Completed	Date of Completion
Initial Meeting with Supervisor	Fri. Sept. 1		Aug. 31
Produce Research Plan	Fri. Sept. 8		Sept. 6
Complete General Background Research	Fri. Sept. 8		Sept. 6
Complete Research of Conflict History/Ukrainian History (1991-2004)	Mon. Sept. 14		Sept. 12
First Draft of Product Criteria	Fri. Sept. 15		Sept. 14
Finish Research and Analysis of Info.	Fri. Oct. 13	LATE	Oct. 24
Complete Research of Conflict History/Ukrainian History (2004-2014)	Mon. Oct. 23		Oct. 11
Finish First Draft of Section 1 of Report (Investigating)	Fri. Oct. 27		Oct. 26
Agree Final Product Criteria with Supervisor	Fri. Oct. 27		Oct. 26

Complete Research on Conflict	Fri. Nov. 3	LATE	Nov. 6
Create & Evaluate Draft Ideas for Product	Mon. Nov. 9		Nov. 8
Complete Research on NATO relations, EU involvement, any other org. involved	Fri. Nov. 10		Nov. 8
Finalise Info Application & Start Work on Product	Fri. Nov. 10		Nov. 9
Finalise Interview Questions	Mon. Nov. 20		Nov. 20
Finish Written Work for Product (Written Portions)	Fri. Nov. 24	LATE	Jan. 12
Finish First Draft of Section 2 of Report (Planning)	Fri. Dec. 1		Nov. 30
Finish Interactive Sections of Product (Maps, Diagrams, etc.)	Fri. Dec. 22	LATE	Jan. 17
Finish Conducting Interviews	Fri. Jan. 19	LATE	Jan. 24
Translate and Upload Interviews to Product	Mon. Jan 22	LATE	Jan. 24
Send Final Emails to Interviewees Concerning Product Feedback	Mon. Jan. 22	LATE	Jan. 24
Finish Product and Submit to Supervisor	Fri. Jan. 26		Jan. 26
Receive Feedback from Interviewees Concerning Product	Fri. Jan. 26		Jan. 25
Finish First Draft of Section 3 of Report (Taking Action)	Mon. Jan. 29		Jan. 25
Finish Evaluation of Product Against Criteria	Fri. Feb. 2		Jan. 31
Meet with Supervisor to Discuss First 3 Report Sections	Thurs. Feb. 8		Feb. 8
Finish Reflection on Learning and Development as a Learner	Fri. Feb. 9		Feb. 9
Complete Final Section First Draft	Mon. Feb 12		Feb. 9
Meet with Supervisor to Discuss Final Report Section	Thurs. Feb. 15		Feb. 8
10 Extracts from Process Journal Selected for Report	Fri. Feb. 16		Feb. 14
First Draft of Final Report to Supervisor	Fri. Mar. 2		Mar. 1
Schedule Final Report Meeting with Supervisor	Fri. Mar. 9		Mar. 1

Finish Revisions of Report	Wed. Mar. 14		Mar. 14
Deadline for Final Report	Fri. Mar. 16		Mar. 16

Appendices 5-6: Mind Map





Appendix 7: Supervisor Emails

Rachael Huddleston

10 Feb



to me ▾

This message has been deleted. [Restore message](#)

Hi Lara,

I thought we were meeting Feb. 1 and then time got away from me. So sorry for my delayed response! I read over your final report, which is clear and well-written, but I need to look back over it with the marking criteria before giving any specific comments. Are you still working on the Appendix? I believe it has a later due date but I was just interested in looking through it at some point.

I've learned a lot from your product proof (you have really interesting data) and your final product/website.

Minor issues, *just for you*, regarding your site:

-Could all pages open in a new tab? Some pages do...this helps people stay on your site longer (if they accidentally close the one tab, they may not try to find the site again).
-I asked a few people (including 2 Ukrainians) to glance at your site and they all thought that it is informative and put together very well. Both Ukrainians mention "The Ukrainian Nation" as not starting in 1991 and seemed a bit bothered by less history. I did clarify multiple reasons *why* you have focused on recent history and why 1991 is a logical start date. I think the title of the tab, and then seeing a brief history was a surprise. Not sure if there is a simple solution, or if it matters in the context on your work, but I thought you may want know what was quickly noticed by two Ukrainians.

Nice work!

Will be in touch again soon.

-Ms. Huddleston

Appendix 8: Interview Transcript (Excerpt)

Question: What role does the organisation that you work for play in the Conflict in Eastern Ukraine?

Interviewee: I am a project coordinator for media development in [Organisation Name Redacted], and what we do now in Ukraine, including from conflict affected regions, in production skills. We provide field support, so we train them how to film, how to shoot, how to edit better to tell human stories.

Q: What are the greatest hurdles that your organisation faces in relation to the conflict in Eastern Ukraine?

I: So for us, it's access to the Donetsk and Luhansk regions. I don't mean the non-government controlled area, but the government controlled area, which is problematic for us as well, because we are a British charity, like we listen to FCO travel advisors, and the embassy here advises against travel to the Donetsk and Luhansk regions, so for us it's difficult to find affordable insurance, so that we can send our consultants to the conflict-affected region. So it's access.

Q: What is life like for civilians living in the NGCAs?

I: That's a great question. There's this video clip from one of our grantees, the information agency "Vchasno", or "Timely" in English and so they produced a short story for social media about a person who went fishing and was kidnapped by the LNR. So he's a fisherman, but he was taken for a spy looking out for military positions, and this is what life in the grey zone. Ordinary lives, people can't just go on living they have to be aware that even if they stay inside the house the house might be shelled or if they go out they might be in trouble. Breaking routine may have very negative consequences.

Q: What are the main dangers of living in the NGCAs?

Even doing ordinary things is dangerous. Most of our media in the GCAs, apart from, lets say, "Hromatske", "Radio Free Liberty", and just a couple others, they don't really speak about people living on the other side of the contact line. They speak about separatists or some other militias, but it feels like there are no normal people, but there are, and I feel like this is something that's lacking in Ukrainian media coverage, that they don't speak about Ukrainian citizens who live on the other side as citizens anymore. They're like labeling them as traitors, separatists, but not just people.

Q: What opinion, in general, do civilians living in the NGCAs have about the conflict?

I: I basically think that no one has the full picture, or there is no understanding about the drivers of the conflict. So basically, for instance, when the conflict started, like the President of Ukraine was saying "we will end this"- basically, I think the main issue is that

this is not recognised as a war, it's an Anti-Terrorist Operation (ATO). And then it has all these implications, for example if a person's house or roof has been shelled and now has holes in it and it's -20 degree (Celsius) soon. This person, even if they have access to justice, there is no one, you can't file this case against the Russian Federation, because this is not recognised as a war, so you're filing it against Ukraine. I believe this is one of the misconceptions about the conflict. I am in touch with a lot of journalists living near the contact line. And with time, they are getting used to it, but you are just, all security matters like how to cross checkpoints are problematic, and as to the geopolitical, no one knows when this conflict is going to end or how the peace process goes. There is very limited information on what is going on and what's further on the agenda.

Q: What is the greatest/most important conflict-related issue that Ukraine and/or its people on either side of the contact line must face in order to approach a solution to the conflict?

I: I think certainly, more communication is necessary because, we don't know. First we heard about the Minsk Process, and we were going to have the reintegration of the Donbass. Now, nobody talks about the reintegration of the Donbass. Since the blockade happened, we basically cut all connections with the other side, and now, I think it's all heavily politicised. And now, the top leaders of this country, they wait until elections 2018, and it feels like nothing will be done until this election. Which means that the people who live in the NGCAs, they cannot vote. And then, past 2019, it seems might be back on the agenda, but as far as all this information and all the media circulate, the reintegration of the Donbass is no longer on the agenda so there is no political will to have this happen.

Appendix 9: Product Criteria Evaluation

Presentation		
Grade	Criteria	Justification
1-2	<ul style="list-style-type: none"> - The final project is not a website. - The website uses no images, maps or diagrams to aid the reader. - The website uses no interactive aids to improve the reader's understanding. 	<ul style="list-style-type: none"> - The final project was a website made entirely using the website software maker Weebly. - The website included images (2 or more) in all information sections of the website. This excludes interactive pages, as well as interviews. Of the images used, 4 were maps, and a further 3 were diagrams. Photographs numbered around 6.
3-4	<ul style="list-style-type: none"> - The final project is a website. - The website uses some images, maps or diagrams to aid the reader. - The website uses some interactive aids to improve the reader's understanding. 	<ul style="list-style-type: none"> - The website included an interactive timeline, an interactive map of the city of Kyiv (to look at the events of Euromaidan) and an interactive map of Eastern Ukraine
5-6	<ul style="list-style-type: none"> - The final project is a website. 	

	<ul style="list-style-type: none"> - The website uses a variety images, maps or diagrams to aid the reader. - The website uses a variety of interactive aids to improve the reader's understanding. 	(to look at contact line development and the location of various battles). Furthermore, a slideshow was included about the various international organisations involved in Ukraine's conflict. All of this together constitutes a variety of interactive aids.
7-8	<ul style="list-style-type: none"> - The final project is a website. - The website consistently uses a variety of images, maps or diagrams to aid the reader. - The website consistently uses a variety of interactive aids to improve the reader's understanding. 	

Information/Content

Grade	Criteria	Justification
1-2	<ul style="list-style-type: none"> - Website does not include a variety of information about the conflict (e.g. History, Conflict Statistics, Interviews) - The information included is very limited in detail. - No images are cited. 	<ul style="list-style-type: none"> - The information contained in the website includes history of the nation dating back to Independence, as well as thorough explanations of recent goings on, including the Euromaidan and important events in the last 4 years of conflict. Furthermore, information is included about the various international parties concerned with the conflict, as well as the international organisations working in Ukraine (some of the workers of which have been interviewed, and the interviews too can be viewed on the website).
3-4	<ul style="list-style-type: none"> - Website includes some variety of information about the conflict (e.g. History, Conflict Statistics, Interviews) - The information included is somewhat limited in detail. - Some images are cited. 	<ul style="list-style-type: none"> - This is debatable, but considering the time frame I had, I think that I managed to include plenty of information into the website. Over 12,000 words of text can be found there, not including interviews, interactive timelines, etc.
5-6	<ul style="list-style-type: none"> - Website includes a decent variety of information about the conflict (e.g. History, Conflict Statistics, Interviews) - The information included is somewhat detailed. - Most images are cited. 	<ul style="list-style-type: none"> - All images (including those in interactive pages) have been credited with the appropriate photographer/corporation.
7-8	<ul style="list-style-type: none"> - Website includes an extensive variety of information about the conflict (e.g. History, Conflict Statistics, Interviews) - The information included is highly detailed. - All images are cited. 	

Audience

Grade	Criteria	Justification
1-2	<ul style="list-style-type: none"> - Website content is not written for adults in mind. - Voice is not consistent. 	<ul style="list-style-type: none"> - According to responses from some of the international organisation workers that I interviewed, the website is very well written and clear to all adults. However, due to some of the economic and political terminology used, it would most likely be difficult for children to read.
3-4	<ul style="list-style-type: none"> - Website content is partly written for adults in mind. - Voice is rarely consistent. 	<ul style="list-style-type: none"> - Throughout the website the voice is
5-6	<ul style="list-style-type: none"> - Website content is mostly written for adults in 	

	<p>mind.</p> <ul style="list-style-type: none"> - Voice is somewhat consistent. 	
7-8	<ul style="list-style-type: none"> - Website content is entirely written for adults in mind. - Voice is completely consistent. 	formal and topic-appropriate, using correct grammatical structures and vocabulary, as well as subject-appropriate terminology.

EXAMPLE 3

Theatre Production

Word Count: 3495

Candidate: gfr464(001124-0006)

2017/18

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Investigating

Topic of Interest

My first time on stage was at four years old, and I've loved theatre and performance art ever since. Whenever I am on stage, time stops and I feel like I belong there. To this day, I have participated in school plays, Shakespeare Competitions, taken drama as an arts class, and this year played Lillian in *I Hate Hamlet*. However, I have never been involved in the process behind the stage. My topic of interest is theatre production, which I chose because of this personal, passionate connection to theatre. I wanted to gain a deep understanding and experience of the process behind bringing a play to the stage. I wanted to develop my creativity, my experience as a director, my understanding of self-expression, and my social and organizational skills in the overall process.

Global Context

My global context was "Personal and Cultural Expression". When I applied this global context to my topic of interest it led me to an exploration of how theatre communicates personal and cultural beliefs, values and messages. This Global Context shapes theatre by highlighting how ideas, feelings, messages and relevant issues are creatively shared with the audience, which I was extremely interested in. Theatre exists to convey all types of messages to society, and choosing another Global Context, such as "Identities and Relationships", would minimize my perspective by analysing just one goal of creative expression. By focusing on "Personal and Cultural Expression" instead, I felt that I'll gain a broader and more personally relevant understanding of self-expression.

Goal

My goal was to gain a detailed understanding of the process of bringing a play to stage by producing my own play. Producing my own play would give me more first-hand experience and relevant knowledge than just research. This was highly challenging for me because I've never written nor directed my own play. It was an extremely challenging amount of work, as I had to write the script, direct, design the set, organize casting, rehearsal times, props, lighting and the final performance by myself. It was highly challenging for me in terms of cooperation communication and empathy. During this project I had to actively and effectively talk to others, work with them, instruct them, give relevant feedback and understand other's emotions. I was not good at communication, cooperation and fair teamwork, because that is not something that comes to me naturally. My goal was highly challenging because I had to complete and organize a huge amount of work and overcome personal communication barriers.

Prior Learning and Subject Specific Knowledge

I've been on stage frequently, leading to a vast amount of experience. I already had great understanding of theatre fundamentals: Positioning on stage, levels, audience sightlines and setting, which helped prepare me for this project. I knew that stage placement and setting are ways to tell a story; for example, a character turning their back to the audience is often perceived as disinterested. I knew a lot about exaggerating movements so that the audience can see them due to my experience dancing onstage, and I had gained a 'gut feeling' for the effects lighting and sound have on viewers.

My subject specific knowledge also came from Drama class. My understanding of stage directions and script layouts came from everyday usage in the classroom. Specifically, my knowledge of an actor's method of preparation came from this year's unit, which was Stanislavski Theatre. I encountered literary devices every day during English

classes, often during text analysis. These classes and my previous experience prepared me for tackling theatre production by giving me a basis. I possessed a basic understanding which I broadened through research.

Research

Research Process:

I began the research process by identifying existing knowledge and deciding what I needed to research in order to broaden my understanding. I used a large variety of sources to gain a range of perspective, as is evident in my bibliography. This includes websites, which I chose for their accessible and relevant content, blogs of professionals and experts, which I chose for their highly informed opinion, and interviews with professionals whom I could ask directly.

I used a detailed timeline (**Appendix 10**) to organize my research, which I split into two parts: Research for the script and research for directing. I set myself short- and long-term goals. I collected research using a research outline (**Appendix 3**). There, I cited my source, explained why I chose it, recorded information it contained and its implications for my product. I consistently made sure that I was using excellent research skills to produce high-quality research that was appropriate to my goal.

Summary of Research:

When researching playwriting, I asked myself research questions like: “What literary tools are used in plays and to what purpose?” and “How is convincing dialogue written in plays?”. By using primary and secondary sources, I found out that literary devices can be straight-forward and used in text, such as anagnorisis (Editors of Encyclopaedia Britannica, 2016), or more visual, like color symbolism and rhetoric (Karg, 2016). I discovered that convincing dialogue is almost realistic, while being understandable for the audience (Sawyer, 1996). Dialogue should have a purpose, rhythm and flow of tension (Ferry, 2016).

When researching the directing process, I asked myself: “What are the suggested components of directing a play?”, and investigated stage directions, castings, cooperation with actors and acting methods. I discovered that open auditions work the best for finding new talent (Christopher, 2016), directing must be adjusted to an individual actor (Ferry, 2016), and stage directions must be consistent and concise (Haugen, 2016).

Evaluating Research:

I evaluated and verified all of my sources using the CARRDS (Credibility, Accuracy, Reliability, Relevance, Date, Sources) method. This helped me use reliable sources that offered either unbiased or professionally well-informed opinions and were highly relevant to my research. In my appendix, there are 3 examples (**Appendix 2**). I always justified why I chose a source, which was important since I often needed professional opinions. For example, the website of John Summons (2013) was a very reliable and relevant source because it showed the highly informed professional opinion of a successful playwright, and it was unbiased. It informed me about writing convincing dialogue, making it a valuable part of my research. Sources like this made my research relevant, informational and educational.

Planning

Criteria

I created rigorous criteria (**expanded in Appendix 4**) to ensure that I developed in the right direction to reach my goal, used my gained knowledge and produced a high-quality product. This is my criteria informed by research:

1. *The script must be written in the official Stage Play format, with no formatting errors.* According to Australian Script Centre (2004) this format is used for official

plays. It dictates that the character's names is capitalized, the stage directions are in italics, the dialogue is on the same line as the speaker's name and everything is left-aligned (Carless, 2004).

2. *The performance is entirely appropriate for grade 6 and up in terms of language and themes.* This is because plays aimed at teenagers and adults can develop their own voice, contrary to children's plays. Contemporary plays often tackle complex themes (political / social issues, etc.), which are hard to understand for children. They often deal with topics unsuited for young children: Tragedy, bias, double standards, etc. Contemporary plays appeal to more mature audiences who can delve deeper into what they see on stage.
3. *The script and the performance must be in the style of Realism.* Realism is a contemporary theatre style that aims to replicate realistic events, scenery and characters (Cash, 2014). Realism seeks to give the sense of life likeness; encourages its audience to think (McGraw-Hill Global Education Holdings, LLC, 2016). It incorporates realistic dialogue (Cash, 2014), which was a big part of my research. Making the play realistic was going to guide me towards a professional product that brings across the intended message and properly utilizes my research.
4. *The play must be performed in 2 acts.* The play had to be in two acts in order to allow a complete change in scenery, but also to give the audience a break in between. According to Toscan (2012), most produced plays follow this structure. Plays with 3 acts or more tend to be longer and require borrowing the stage for long time, which would have been inconvenient because my play was performed at school.
5. *The final performance must include costumes, props and light effects entirely appropriate to the play.* Costumes and props indicate setting and light effects are necessary to communicate mood and punctuate moments of drama, as well as obviously affect the visibility of the stage (Vincent Lighting Systems, 2016). They can indicate setting, time of day and replace a curtain if none is present.

Costumes, props and light demonstrate professionalism and sophistication in a production, which I strove for.

6. *The performance must be professional, meaning that it is performed in a sophisticated manner in front of an audience.* This way I learned the most about theatre production, since in a sophisticated performance all its aspects, -props, costumes, etc.- emulate a real play. Presenting it to an audience helped me evaluate it against my criteria.
7. *The play must have a socially relevant message.* According to Ferry (2016), Realism addresses a modern issue. That is why my play, in order to be professional and in the style of realism, had to have a personal socially relevant message.

Planning and Recording the Process

I used my process journal (**Appendix 1**) to record the development process of my Personal Project. I mainly posted updated timelines and short reflections of my work, such as my meetings with the supervisor (**Appendix 7**), comments on how and why I changed certain parts of my timeline and reflections on how the rehearsals of my play went day-by-day (**Appendix 5**). My timeline, which I used to plan my actions, consisted of long-term goals, for which I created a separate, day-by-day timeline of short-term goals. Beside each goal I put a link to the completed work, which was an excellent way of organizing myself since everything was always accessible through the timeline. I began my research in September, wrote my script in October and directed from November until mid January. In between these steps I wrote the corresponding drafts of my report. Since I'll leave for CEESA on March 8th, I handed in my Personal Project on March 7th. When looking at my process journal, one can immediately see the progress and development of my project on a physical level, since all of my timelines and reflections were posted there. However, one can also see how the project developed on a deeper level. Types of posts like **Appendix 5/7** show how much of the project I

understood, how deep my enthusiasm was for what I was doing and what happened ‘behind the scenes’ of my work. They accurately show my detailed understanding and emotional development that went beyond completing deadlines.

Self-Management Skills

Throughout this project I demonstrated excellent organization, affective and reflective self-management skills. I demonstrated my organization skills by creating an overall timeline (**Appendix 6**) that I also used as my organization method. I split it into more detailed, separate timelines where I set myself challenging yet realistic long- and short-term goals. I demonstrated reflective self-management skills by extensively using my blog as a Personal Project journal to record reflections in (**Appendix 1**). I set myself realistic but challenging goals that included more work on the weekends when I could balance Personal Project and class work better. I demonstrated affective skills by completing goals on time and meeting deadlines consistently because I knew that I would be very stressed otherwise. I made lists and broke the workload down: This relaxed me by showing that what seems overwhelming is comprised of a lot of small steps. I reduced stress strategically by staying alert, active and rested. I participated in school sports and made sure I slept at least 7 hours every day, which helped me be more physically balanced and concentrated. My organizational and affective self-management skills allowed me to be rested and motivated on top of getting rid of undue stress, which made my whole project easier and enabled me to complete it on a high level of quality.

Taking Action

Product

In response to my goal, global context and product criteria, I created a product that consisted of two parts: A script and the performance of the play. Most plays use a script as the basis of their performance, and by writing the script I explored this part of theatre. I directed a selected group of actors, which honed my communication skills. My script and my directing process were how I expressed my ideas and creativity, which made my product extremely relevant to the Global Context “Personal and Cultural Expression”. I focused on channeling my creative thinking into the project and communicating its cultural message to the audience: Fame is not as glorious as most people think. This message criticises today’s pop culture, and thus allowed me to express myself and my opinion of modern culture. I paid close attention to my criteria during the process of creating my product so that it would meet the goals I’ve set for myself, which it has fully. I think that my product was of very high quality because the outcome was a very sophisticated, professional performance, and I reached my goal thanks to it.

Thinking Skills

My product demonstrated me applying all my learned knowledge and thinking skills to write my script and direct my play. I used excellent transfer and critical thinking skills to direct my play with the directing techniques I learned (**Appendix 5**). I evaluated the arguments of actors, considered their point of view, and decided on the most appropriate approach to help them, for example with read-throughs if they forgot their lines, or analyzing and developing their character by putting them in an unfamiliar situation. My research showed that letting actors improvise a scene in character is very helpful for getting into character (Ferry, 2016). I applied this by challenging the actors to improvise when they did not know their lines, which resulted in them becoming more familiar with the text.

While directing I came across the issue of scene-specific stage directions that were not in the script. I solved this issue by adding hand-written stage directions on the hard copy

of the script. My research showed that stage directions should be very clear, concise and utilize stage vocabulary (Haugen, 2016), which I applied by making my handwritten stage directions clear, direct and specific. This helped my cast improve their acting and lead to a more natural performance. Another issue I came across was having a small stage. I used my creative thinking skills to solve this problem by designing a set that gives the idea of a large space while allowing the actors to move around and act. This added professionalism to my product and ensured its success.

Communication and Social Skills

Creating my product required excellent communication and social skills on my part. I communicated with my Supervisor, whom I met with him once a week (**Appendix 7**), and we discussed time management and progress. I communicated with the P.P. coordinator (**Appendix 9**), who helped me write my report by proof-reading, giving feedback, and answering general questions I had about Personal Project. I also discussed Personal Project with my peers using a Facebook group our class created, where I, for example, reminded my peers to fill out the audience survey I sent them regarding my product. I needed to communicate with the actors in my play. As their director, I had to exercise leadership and take responsibility for decision-making (**Appendix 5**). This required high social skills because I had to make fair decision and practice empathy. Additionally, I communicated with different professionals of the drama and language department while doing research. Interviewing them gave me information, helped me progress in my research and gain vital knowledge. Lastly, I demonstrated excellent communication and social skills while scheduling rehearsals. I booked the drama room during lunch and after school as a result of talking to the secretary and the head of the drama department. Without reserving a room I doubt I would have made any significant progress in terms of directing. My skills enabled me to work regularly and attentively on my product, resulting in it being of excellent quality.

Reflecting

Quality of the Product

I sent out a questionnaire to audience members (**Appendix 8**), which helped me evaluate the quality of my product against the criteria. This is why my product hit the $\frac{7}{8}$ rubric for my criteria (**Appendix 4**):

1. It was correctly written in the Stage Play format throughout the entire process, without any errors in format.
2. It contained no language or themes that a 6th grader could not deal with. When audience members were asked whether the play hit this criteria, 100% responded with "Yes".
3. It featured a story and a style of performance that was realistic. The setting emulated real life, and when asked 100% of the audience responded that the performance reflected real life.
4. It had 2 acts, both with 2 scenes.
5. When asked whether the props and light effects were sophisticated, and allowed to choose between Yes/No/Mostly/Somewhat, 83% of the audience chose "Yes", but 17% chose "Mostly", which meant that my product hit the criteria but barely. I would improve this by taking more time to review light effects and props, and get professional feedback before the performance.
6. 100% of the audience responded in the questionnaire that my play was professional and sophisticated.
7. In the questionnaire the audience said that the message was clear and evident to them.

My product was extremely successful according to my criteria, because it hit the highest level in all aspects. I was very satisfied with this result. If I were to improve something, I

would ask for professional feedback for the effect of stage setup and lighting on the play, as that would provide me with a viewer's opinion.

Topic and Global Context

I extended my knowledge and understanding of Theatre production greatly throughout this project. I learned more about script writing, such as saying dialogue out loud to check if it is logical and purposeful. I learned more about holding auditions, for example that it is important to see how well an actor does with stage directions to evaluate their acting ability. I became more knowledgeable in stage management, as evident by me knowing how to design a set and use lighting to the desired effect. I learned about directing techniques during the directing period: For example, I learned that my cast needed time to relax in between rehearsals so they could refocus afterwards. In addition, when the cast struggled through their lines I either announced a read-through to remind them of their text, or I forbid them to call lines and let them figure out what to do under pressure. This always proved helpful; I could see immediate improvement in their lines and their improvisation.

I also extended my knowledge and understanding of the Global Context "Personal and Cultural Expression". This project helped me hone my personal expression skills, but also taught me about contemporary theatre culture. Looking at Personal and Cultural Expression from a theatre standpoint, I realised that it is all about expressing a culturally applicable opinion or idea through your own creativity and the theatre style that fits it best.

I am already applying my gained experience in theatre by co-directing a scene for Kiev's upcoming Shakespeare Competition. Needless to say, my new expertise is going to be very useful for the rest of my life and upcoming involvement in theatre.

IB Learner

I developed greatly as an IB learner throughout my project. I became more caring and a better risk taker. Personal Project has helped me become a risk taker because I chose to investigate an area which I was very unfamiliar with. Producing an entire play by myself was an enormously challenging task, which taught me to become a better risk taker. I also became much more caring as I learned to cooperate effectively and empathetically with the cast and stage crew when directing my play. At the end of my project, I was friends with the entire cast, and I still talk to them frequently. I learned how to encourage my cast members when they were having a hard time acting and how to give constructive feedback. I learned that caring for others is all about being empathetic and communicating concisely in a respectful manner. Personal Project made me a greater risk taker, far more caring and a more well-rounded person. This will be useful in my future, specifically in the DP, by making new challenges seem less impossible and cooperation easier.

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