



THE TRURO SCHOOL EXTENDED PROJECT QUALIFICATION SHOWCASE EVENING

MARCH 9TH 2021

The Extended Project Qualification at Truro School is an established A-Level programme that equips students with a range of professional, academic and personal skills. From researching to referencing; discussing to creating; each student's project is a unique venture into a personalised area of interest. Students select one project from an option of four (artefact, dissertation, investigation and performance) and delves into a defined area of enquiry. After completing their projects, they are finally required to present their work to a non-specialist audience. The following abstracts are from the 2021 cohort who are presenting this evening so please take a moment to have a read. You play an important part in this evening as you will be able to ask the students questions about their projects using the virtual Q&A via the Live Event.

MONTY- DISSERTATION

How do we need to respond to the geological reality of Near-Earth-Asteroids in order to develop a workable space economy?

Asteroid exploitation is already in the planning stages with many large companies actively investigating their options, building on government research stretching back to the 1960s. Whether as an investment opportunity, as a heroic leap forward for humanity or for a combination of reasons, asteroid mining is seen by many as an inevitable future step forward in global economic development. However, much of this speculation is based on how asteroids behave as geological objects; a series of factors that this dissertation attempts to survey.

First, the geology of asteroids is considered in terms of their physical content. This includes the process of differentiation: how metals move within asteroids when they are heated. Next, the chemical reality of these objects is considered, including what methods we use to detect and classify the chemical differences between asteroids. A brief overview of technological innovations in the sector is given, before moving on to an analysis of the exploitation of metallic and water resources, both in terms of selecting appropriate objects to mine and how to locate such objects.

The conclusions drawn by this paper are essentially that high concentration metal objects should be targeted to get the highest yield possible, while water should be made an initial extraction priority due to its utility in the spacefaring endeavour. A process of narrowing down objects with remote sensing in order to reduce prospecting costs is proposed, as is the suggestion of compromising on metal yields in order to reach essential water in more convenient locations

ALFIE- ARTEFACT

To compose a piece of stress-relief music using the musical elements to improve the listener's mood

This project explores the fundamentals of stress relief music and how it is written via appropriately adjusting the musical elements. The aim for the project was to compose and produce a more interesting piece of stress relief music as opposed to what is easily accessible on the market today. To understand the aspects of this genre I researched the topic of music and emotion and then how 9 musical elements can be altered to match the desired emotions. I split the piece into 3 different sections, each had their own genre. I wanted to write stress relief music to provide a resource of relaxation to all adults, and to improve my production and compositional skills.

PHOEBE- INVESTIGATION

An investigation into the effect of colour on image memorisation.

This experiment tested whether the colour of an image affected recall of it. Research based on the Levels of Processing theory has indicated that deeper processing (semantic) leads to better recall than shallow (structural) processing. One way of achieving deep processing may be via an emotional response to stimuli. Previous research has shown that colours can lead to an emotional response. This study examined whether images shown in colours linked to an emotional response would therefore be recalled better than those processed simply as a piece of information. The colour red was used as a colour that elicited an emotional response (e.g., linked to danger) and was compared to other colours (green, yellow, and blue) and plain black & white. The impact on recall of all colours versus black & white was also investigated.

The research was carried out remotely using a timed PowerPoint that was emailed to participants (due to lockdown restrictions). They saw a grid of 25 images, 5 in each of the five colour conditions (red, green, blue, yellow and black & white). Participants were given two minutes to memorise the grid before it was hidden and a further 2 minutes to write down the images they remembered. Results were somewhat unexpected, in that red images were not recalled significantly better than other images, and black & white images were recalled significantly better than coloured images ($p < 0.01$). Both alternative hypotheses were therefore rejected. The results of the current study suggest that black & white images aid in memorisation, although the cause of this is uncertain. Areas for further research are discussed along with the implications and limitations of the research.

There will be a 5-minute break at this point to allow you to enjoy the music produced by Alfie and have a go at Phoebes survey.

AMBER- DISSERTATION

To What Extent Does Unemployment Affect the Spread of HIV in Kenya?

This project aimed to evaluate the extent to which unemployment plays a role in the spread of HIV throughout Kenya, by examining both the various factors, and the wider implications, that they bring with them. The project investigated the aspects of unemployment that drive the spread of HIV as well as looking specifically at the country of Kenya and the aspects of the country itself that aided HIV to spread. Based on the review of the central arguments the author concludes that unemployment is not an isolated factor and is not the only component that drives an increase in the number of HIV cases within a country and in particular the case study country of Kenya. There are other factors involved acting as third-party influences working alongside the unemployment rate which collectively led to a spread in HIV. Other factors such as the environment and socio-dynamics of the country were researched, and how they collectively play a part in the spread of HIV in Kenya. It is difficult to decisively conclude the extent to which unemployment spreads the disease, but it can be concluded that it plays a pivotal role. The wider implications of low unemployment in Kenya, not only affect Kenya but also the rest of Africa and the world. Countries are tied together on a global economic scale. In the conclusion it was stated that in order to reduce the spread of HIV, resulting from unemployment, a progressive taxation system should be put installed, allowing the wealth to be spread more evenly and for people living in rural areas to gain the ability to seek medical help even if they are unemployed or have a low income job.



JENNY- DISSERTATION

Republishing Pernkopf's Atlas

Eduard Pernkopf died on the 7th April 1955, leaving behind his life's work in the form of a seven volume atlas entitled 'Atlas of Topographical and Applied Human Anatomy'. The atlas is renowned for its remarkable illustrations which demonstrate a regional stratigraphic approach ranging from superficial to deep layers of anatomy. These qualities have proved invaluable to countless surgeons since the publication of the first volume in 1937. The utility of the atlas was deemed so great that it was translated from German into five different languages.

However, scholars and academics in the late 1980's uncovered the hidden Nazi origins of Pernkopf's masterpiece. After a formal investigation by the University of Vienna (where Pernkopf was President) it was reported that at least 1,377 bodies of executed persons were delivered to the Institute at the time of the atlas's creation. It is thought that up to half of the 800 plates depicted in the atlas may have come from these victims of the Nazi regime.

Pernkopf's work in many ways optimises the horrors of the Nazi regime, it has been categorised as an indictment of objectionable science, an abomination, a masterpiece and an invaluable source for surgeons even today. Now that the true origins of the atlas are known surgeons are left with a moral dilemma. Is it ethical for them to use the atlas as a teaching mechanism, source of study or guide for surgery given its direct affiliation with Nazism?

JOE- ARTEFACT

To create a 3D animation on health and safety in the DT workshop

This project shows the process of creating a 3D animation from initial designs to final video. It uses the key principles of animation to produce an easy-to-watch, educational video that aims to enhance the education of health and safety for first and second years in the DT workshops. By pursuing this project, I wanted to improve my skills in drawing, 3D modelling and animation.

I would like to thank you all for your participation in this years EPQ showcase evening. It is a wonderful opportunity for our students to experience public speaking and will support them later on in their future endeavours. This years showcase has given them exceptional skills to go into an ever changing environment I would also like to thank Mrs Stone for her wonderful continued support to our students as well as to all the supervisors who go above and beyond to support the students in realising their potential.