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# INITIAL PLAN – INVESTIGATION INTO THE IMPACT OF REMOTE LEARNING ON PHYSICAL AND MENTAL WELLBEING

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Worth 40 credits

## Project Description

Since the onset of the COVID-19 virus, there has been an increasing pressure on schools and universities to provide remote learning in order to ensure the safety of all involved. While this certainly helps to prevent the spread of the virus, it is not yet clear whether this remote learning has unknown effects on the wellbeing of students. Generally, remote learning entails increased computer use as well as reduced contact with others. These have long been linked to reduced physical and mental wellbeing respectively. I intend to study the impact of remote learning on students, in regards to their physical and mental wellbeing. Then, produce models to predict how this will affect students partaking in remote learning moving forward.

While remote learning provides an effective immediate solution to the problems we are facing as a society, in the long term they may be more harmful than helpful. There are many potential wellbeing risks associated with remote learning and the increased screen time it brings. For example, prolonged computer usage has long been linked with back and neck pain. These risks to wellbeing may have a prolonged and substantial effect on a great deal of people in the future. Not only this, but the isolation can also have an effect on mental wellbeing with drastic consequences.

Due to a lack of research on the subject, the extent of this issue is not known. Therefore, I have decided to perform a study into remote learning and all the potential effects it may have on wellbeing. Through this investigation I intend to gather evidence of the problem space to map causality as well as potential mitigating factors. Once suitable research/data collection has been completed, I will begin designing a model to map the problem out and apply simulations of differing circumstances to determine issues and solutions to the problem. Finally, these results can be analysed, evaluated and ultimately discussed.

I predict that the main challenges of this project will be within the collection of data needed to properly discover the impacts of home learning on wellbeing. At present, I do not have complete knowledge on how this can be done and this will require sensitive data that requires ethical approval. Therefore, I shall complete the ethics course offered by the University. This may also be challenging as I will need to research methods of data collection, which are most effective and weaknesses of each.

The final step of this project is to produce an in depth report on my findings that can be used by the appropriate parties in order to make an informed decision on governmental policy. In order to achieve this, I will need my supervisor's support to point me in the right direction on how to proceed.

## Aims and Objectives

While the details of this investigation are subject to change, the key aims and objectives will not. They are as follows:

- Perform research into the subject using a variety of strategies to gather a complete understanding of the subject. For my research I will be using:
  - Surveys
  - Existing publications and studies
  - Any other methods discovered during my research
- Distribute the data gathered into clear and concise categories that can be used when designing the model. For this stage, I will need to determine the:
  - Causes

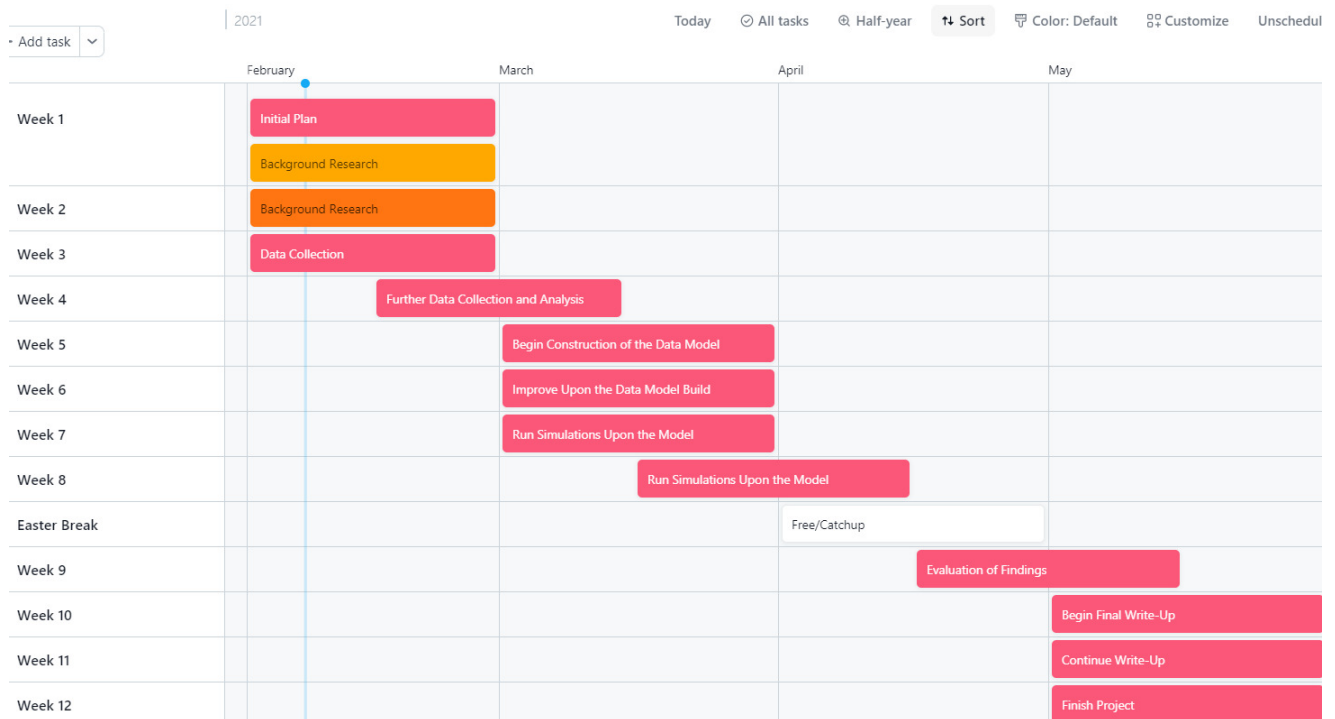
- Effects
  - Mitigating Factors
  - Links between them
- Take the information I gather and use it to produce a model that represents the problem as a whole as well as correctly displaying all of the information above. For this model, I will be using the standard practices of systems modelling so that it can be easily understood and reproduced if necessary.
- Run simulations on the model to test a variety of theoretical situations. This will be used to identify:
  - How much each cause relates to an effect
  - How effective potential mitigating factors would be
  - The likelihoods of different effects
- Use the information gathered throughout the project to produce a report detailing what impact remote learning may have, how to limit this impact and potential alternatives to remote learning.
- Deliver my findings to the appropriate authority so that they can be meaningfully used.

These will serve as my milestones for the project as I will be doing them in this order. They are represented as different steps within my work plan.

## Work Plan

In order to achieve these goals, I have devised a work plan to map out the coming 12 weeks and the tasks I will need to complete. This will begin with week 1 starting on the 1<sup>st</sup> of February and last until the final submission date of the 14<sup>th</sup> of May. I have visualised this plan (screenshot below) as a Gantt chart that displays tasks on a weekly basis, as well as a monthly scale. For weeks that spanned between months, they have been represented by being placed at the middle point between the two months. Otherwise, tasks take up the whole slot for the month they take place in. This does not mean I will spend the whole month working on them, the time they take will correspond to the week slot they are in. I aim to spend 24 hours a week on the project, roughly 3 and a half hours a day. This is subject to change as the project advances, more time will need to be spent if I fall behind on the plan or less time if I am ahead of schedule. Supervisor meetings have not been listed in this chart as they are not a deliverable of the project. These meetings will be held weekly to review my progress and make suitable changes to the plan. This chart was created using the web tool Asana, link to the in browser version is available if requested.

Tasks that are coloured red are a direct part of my project or report. For example, the data I collect will be used within the created model. Yellow represents a task that will be completed given that there is enough time. Orange is a task that will help me complete the project. Finally, white is for the free time during the Easter break.



The first week of the project is where I will create the initial plan (this document) as well as perform the research necessary to complete it. This research will consist of a preliminary look on what goals I have and what must be done to achieve them. As a part of this, I have also completed the ethics course given by Cardiff University. Moving on, week two will mainly involve research into the data and tools that I will need in order to construct the model, as well as methods of data collection and how to efficiently process and use it. This will involve using various tools and equations in practise scenarios to familiarise myself with them and insure I can use them correctly. This will also help me fully develop the problem space as I grow more knowledgeable on the topic.

Weeks 3 and 4 will be used for the collection and then analysis of data. This data will be collected from a variety of sources, I will need to create and distribute surveys, review existing studies and any other collection methods I discover during my background research. Once I have gathered an appropriate amount of data, I will begin to analyse and organise it. I will explore causality as well as mitigating factors here to produce the knowledge base that will be used within the model. The structure of these two weeks may change as the collection and analysis may take different amounts of time to what I predict. However, by the end of week 4, the full collection of analysed data will be produced.

I can then start the construction of the model at the beginning of week 5. I intend to use the software Insight Maker to construct the models. This will fully visualise causes and effects as well as all the outcomes for the problem. This model will be my main deliverable for the project as my aim is for it to express what effects this remote learning will have, as well as likelihoods and how changes will effect it. During week 5, I will have finished an outline of this model which I can then improve upon during week 6. I will then spend the next two weeks altering variables in simulations to test a variety of hypotheses and determine the extent a cause influences an effect and what can be changed to improve upon the problem. Notations will be made and my findings recorded.

I have not scheduled anything during the three weeks of Easter as this is meant to be a twelve week project and I will need time to focus on my other module as well as take a break. However, if any of the prior goals has not been fully achieved by this time, I can use this time to catch-up and finish what needs to be done. Ultimately, I do not intend to use this time to work on the project but it serves as a safety net in case of any unforeseen circumstances.

Week 9 will be where I collect my notes from the simulations and use them to come to my conclusion. Then I will use this to prepare for the final report in terms of structure and content.

Finally, the last weeks of the project will be spent writing the report. This will contain my findings as well as conclusions backed up by the data and simulation results. I will be following the structure made during week 9 and will include everything I have gathered and made up until this point. From there, I will submit the project by the final deadline. I will also be sending my report/findings for use externally.