Genetics and Society SDA explaining piece

Youtube Video link: https://www.youtube.com/watch?v=acajlriaoQs&feature=youtu.be

About my SDA

I have created a video for my student advised piece. The topic on my SDA is about genome editing. I choose this topic because I think genome editing is one of the most important field in genetics. It is a very fascinating topic due to the fact that this piece of technology is a major breakthrough in recent medical field, but at the same time it is a very controversial issue[1]. As in the module "Genetics & Society" we have always covered the nature of genetics as well as those ethical issues accompanying. I think this topic can best represent what I have gained from the module. The aim of the video is to inform people about facts and some related issues on genome editing since people in the public might not have a clear perspective on what actually this piece of technology is. My target audience for the video is basically everyone in the public. As a life science student in Warwick for the past few years, I have always been told to give a presentation on really specific scientific topic, for example like how does a particular enzyme work and all the deep science behind. In this SDA I have decided on challenging myself, whether than making a video that is really scientific based (which I am trained well for), I want to communicate myself to the public about what genome editing is. I find this is a really good topic for me to do so because in genome editing there are many aspects that I can discuss apart from the nature of science behind it. I can talk about the ethical concerns such as creation of "designer babies" or some safety issues around it[2]. As these issues have already been discussed in the module so I can relate myself in showing my knowledge towards the course.

Why do I choose video as the presentation of my SDA?

Before I have started planning my SDA I have looked at the past cohort's work trying to gain some inspirations from them. I found out that some of my course mates in the past year have also done topics regarding on genome editing. For example, there are one poster on the general science behind genome editing and one about the technique of CRISPR Cas 9 which is the most recent genetic editing system[3]. Although poster is often regarded as a tool to convey ideas effectively, as all the relevant information can be gathered into a piece of paper. It is also really presentable to the public as well. When I reflected upon on my studies in the past years, I have always been told to created a poster when I am giving a presentation because I think it is the best way for scientist to display all their findings, graphs, result etc. Therefore, I have decided to step out my comfort zone by doing something that I have been rarely involved. Which the first thing that comes into my mind is to do a PowerPoint presentation. However, as I have discussed that my aim is to show my work to the public, you can only do a PowerPoint presentation in a specific location which this will greatly limits my audience. As a result, I have come upon to the idea in creating a short video on genome editing. I have used video scribe to present my video because video scribe has a very unique way on how they present the content. Instead of just showing content on the screen, every information is appeared in a drawing manner. I think that by presenting in this way, it greatly enhances the visual effects to the audience and it will also draw a lot of attentions. Using video scribe makes the whole presentation more interesting and less dull comparing to a poster.

My approaches to the video

Since I have mentioned that this a video to be presented to all the members in the public, so I have decided not to go in really deep into the hard science of the topic. I have tried to keep the video simple and short because I want to keep my ideas and points concise rather than having a long and boring video. Therefore, I have decided to limit my video in around five minutes which is enough for me to briefly discuss the issues related to the topic and provide insights of what genome editing is to the public. The course of my video can be dissected down into several parts. Firstly, I have started off my video with some basic scientific explanations of what is DNA[4]. The first part of the video contained some scientific terms about DNA such as "nucleotides", "cytosine" etc. Although I have mentioned not to go really deep into the scientific theory, but I feel like one could not explore this topic without provide some basic knowledge of what a genome is. Such as in this module we have DR. Kevin Moffat to start off with explaining what DNA is. I think this can aid the audience to have a better perspective on what genome editing is. I have tried to keep the science as simple as possible, therefore I have included animated drawings of the double stranded DNA instead of those diagrams we found in the scientific text book. In the second section of my video, I have talked about the potential application of genome editing such as in treating cystic fibrosis[5] as well as some basis of how does this technology work[6]. After that I have moved onto discussing the ethical part relating to this technology. The ethical issue arising from genome editing constitutes the major part of my video. I have raised hot debated issue on such as "human germline editing" will cause the modified gene passed to the next generation[7]. I have also included the perspective from professionals on this field such as bioethicists and researches[8], this greatly increase the credibility and validity of my argument. I have trying to link my video to this module by including something that we have discussed in our lesson, such the theme discussed in the movie "Gattaca" and designer babies. At the end, I have ended the video by simply making a "joke" by saying we will be living in a world full of "super humans". I think this will make the ending more entertaining and to a certain degree leading the audience to reflect on what our future society will become if genome editing becomes available to everyone in the society.

Throughout the video I have only used a few scientific diagrams for example in explaining how does genome editing work and when I talked about the recent editing technology "CRISPR Cas 9". I feel like some sort of scientific illustrations has to be attached when discussing in these areas. Apart from that I have tried to keep the presentation and language simple which will be understandable for the majority. In the rest of my video, I have only used simple picture illustrations or words that shows up in order to express my ideas. For example, when I am talking about designer babies, I have found an image with a baby and words such as "high IQ", "no disease', these terms are all the desirable traits for human being. By using these illustrations, it helps me to convey my ideas much easier and also make my video more presentable.

Conclusion

In conclusion, I think this SDA has given me the opportunities to explore something that I have never tried before. After completing the video although I think that some of the concept discussed is hard to understand for the majority such as some of the scientific part of the video when I am trying to explain some of the basis regarding to genome editing. To the audience

that have some sort of scientific background, I think they will certainly understand what this video is about. However, I think I have tried my best to inform some facts and information about the topic.

Reference:

[1] PhD, Yella. "The Ethics Of Gene Editing." Medical News Today. N.p., 2018. Web. 31 Mar. 2018.

[2] "Ethics Of Designer Babies | The Embryo Project Encyclopedia." Embryo.asu.edu. N.p., 2018. Web. 31 Mar. 2018.

[3] What Is Genome Editing?." Yourgenome.org. N.p., 2018. Web. 31 Mar. 2018.

[4] Reference, Genetics. "What Is DNA?." Genetics Home Reference. N.p., 2018. Web. 31 Mar. 2018.

[5] "Genome Editing Faqs." Cysticfibrosis.org.uk. N.p., 2018. Web. 31 Mar. 2018.

[6] Gray, Kate. "What Is Genome Editing And How Does It Work?." Wellcome Trust Blog. N.p., 2018. Web. 31 Mar. 2018.

[7] "What Are The Ethical Concerns About Genome Editing?." National Human Genome Research Institute (NHGRI). N.p., 2018. Web. 31 Mar. 2018.

[8] National Academies of Sciences, E., Medicine,. (2017). Human Genome Editing: Science, Ethics, and Governance. Washington, DC: The National Academies Press.

Other References that I have used to create my video:

CRISPR: Emerging Applications For Genome Editing Technology." Genomics Research from Technology Networks. N.p., 2018. Web. 31 Mar. 2018.

Editor, B. (2018). How Genome Editing Could Enter Mainstream Medicine - Genomics Education Programme. [online] Genomicseducation.hee.nhs.uk.

Miah, Andy. "The Ethics Of Human Enhancement." MIT Technology Review. N.p., 2018. Web. 31 Mar. 2018.