

## Genetics Student Devised Assessment Explanation

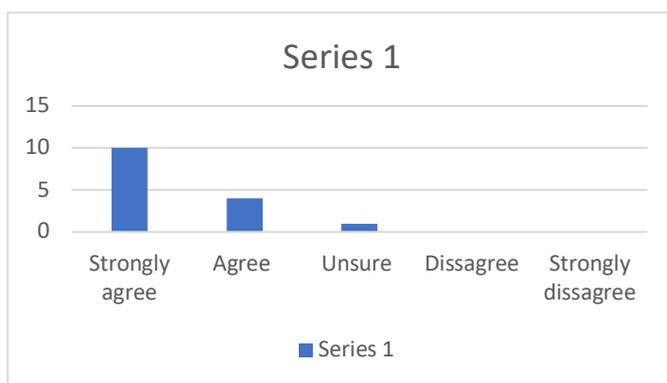
For my devised assessment I designed and created a website called “Genetics, Science & Society.” My inspiration for creating a website was due to my experience in the module. Coming from a philosophical background meant that during the initial weeks that were spent covering scientific material, I was at times confused. The terms were new to me and I had to review the lecture slides again afterwards to ensure I had gained a thorough understanding. As a result, I thought it would be a good idea to create a website that was a simple introduction to the field of genetics that explained basic concepts in an easy to understand way. It was meant not as a comprehensive study guide but rather for new comers to the subject area, perhaps students who could read the website in advance of studying it in school or just anyone with an interest in learning simple explanations about it. While I struggled with some of the material in the initial weeks, I discovered that my peers who came from scientific backgrounds also dealt with some confusion in later weeks with lectures that covered ethical issues. Consequently, I made the decision for the website to be an introduction into not only scientific information surrounding genetics, but also the way it impacts society. So, I created pages that also gave an insight into the ethical issues that surround the topic, it’s portrayal in film, and current news in the genetic world.

In the creative process the most time-consuming decision was the target audience. I decided that my website would be most useful for students currently in education, who like me were interested in the subject and wanted to learn about it but had no scientific background as such. Therefore, the specific age group my website was intended for got narrowed down to 14 to 21-year olds, this covered students from the beginning of their GCSE’s to the end of University. Despite aiming it more at people within that target age who are in education, I didn’t want to exclude people who may have left school but still had an interest in learning about the subject area. To accommodate for this, I made sure that on pages, such as the get involved page, ways for people to get their workplace and community involved are also discussed. There were several other aspects of my website that were designed with the target audience in mind, namely the “look” of it. When reading key literature such as Fletcher’s (2012) Genetics book, it was extremely text heavy with no colour and very scientific terms used. To avoid this, I tried where possible to break up the text into bullet points and intersperse colour and pictures throughout to retain the attention of people reading the pages. I additionally went to the school section of the library and looked at books such as Donnellan’s (1998) book that was used as a genetic textbook in schools for a number of years. I examined the type of language used and emulated it in my own website, ensuring the information was not too complicated but equally not dumbed down.

I also took great care when considering what topics from the module to include. For the scientific pages, I included information on what DNA is, the structure of DNA, what genes are, the human genome project, genetic engineering, CRISPR, cloning, and genetic disorders. These were all topics that for the most part we studied in the first three weeks of term. The history of DNA was an area that Professor Moffat covered in detail but wasn’t included in my website. I made the decision to leave the history of genetics out because as my audience was new to the topic I felt that the more relevant information to them would be what’s currently happening in the world of genetics as opposed to what happened 100 years ago. Given the time restraints I chose to prioritise modern day examples and information, however, if I was to continue on making more of my website I think I would like to include a small timeline that gives some key dates and names important to the field of genetics. For the ethics page I aimed at making it as interdisciplinary as possible, like our module, by including viewpoints and

arguments from many different perspectives. These perspectives include religious ethics, psychological ethics (nature / nurture debate), philosophical ethics (autonomy objection), and socio-economic problems. I felt the way this module had been designed offered a really valuable insight into the subject area as you got to view from genetics from all angles. I tried to also have my website, especially the ethics pages, feel similar to this. I was also careful to present the arguments to my reader in a way that gave them all the information but didn't say whether they were correct or not. It is my hope that after reading the website, they come away with their own opinion of what discipline they most agree with.

After completing my website, I sent out an online survey to 10 University students and 5 A level students who had not extensively studied science or genetics. I asked them 5 questions: what is the best part of the website, what needs improving, write one thing you learned from the website, and as someone from a non – scientific background do you think this is a useful website to give you an introduction to the subject area. In answer to what the best part of the website was, the majority of the people complemented the visual design and the way it looked. In answer to what could have been improved some people commented that I could have given more information on different genetic disorders. I was aware of this in the creation process and unfortunately due to time constraints I could only include four genetic disorders. If I had the opportunity to do the website again or if I had more time I would like to have given information on at least 5 more disorders. In answer to what they learned from the website there were two very popular answers: CRISPR is a kind of technology that could potentially allow us to eradicate diseases, and that there's a programme that pays teenage girls not to get pregnant. Firstly, I was happy that students were able to list anything that they had learned as it meant that my website had fulfilled its educational goal. Secondly, I was pleased that it had been from real world examples. In the creation stage I was unsure whether to have information that was strictly educational information that told you about something, or to include examples such as the Denver Dollar a Day Programme. I hypothesised that while the strictly educational material was necessary and important, the other examples would be memorable and engage with readers. Not only that but I believe these examples can be educational as well as they put the information being talked about into context. The results from the last question can be seen below:



When asked if they thought my website had been a useful tool to introduce genetics to someone from a non – scientific background, twelve students answered strongly agree, two answered agree, and one answered unsure. I am pleased with these results, I think it reflects the work and time I put into the project. I understand that there are some areas that may have needed

improvement, such as the genetic disorders page, which had it been different could of resulted in everyone answering strongly agree.

There were multiple reasons why I chose to create a website above other forms, such as a painting or a story. As already touched upon earlier, I wanted an educational tool that I could have used when I began studying the module. No doubt, educational tools come in many different formats and I did initially brainstorm an informational video instead of a website. The deciding factors were ultimately that I had the best chance of fitting more information on a website, through dedicated learning pages as I did, than in a video. Additionally, it was important that this project be as realistic as possible; had I continued on and created an even fuller version of my website, I would want to be able to update it accordingly with new genetic related information that comes out. The issue with a story or a video is that given how fast new technologies and research is being developed in the area, information can easily become outdated. By having a website, it could be something that gets edited every time new and important information or research is made public. Furthermore, this ties in with my motivations for having the “genetics daily” online newspaper page. The page is programmed to automatically update itself with new articles that have come from anywhere in the world that are related to genetics, genetic engineering, or cloning. Not only does it provide the most up to date information, but it also has a twitter feed as well. Considering the age of my target audience, I thought it appropriate to have a social media aspect intertwined in at least one place because this generation is known for valuing connectivity.

## References

Donnellan, C. (1998) *The Ethics of Genetic Engineering*. Cambridge: Independence.

Fletcher, H. & Hickey, I. & Winter, P. (2012) *Instant Notes in Genetics*, 3rd ed. London, GBR: Taylor and Francis. Pages 1 – 52, 75 – 134, 295 – 305.