

Plan Outline – Submit for Part A

SHE Task – Report Plan Outline

1. Introduction

[≈ 200 words] –

- Kinesthetics – study of body motion and perception (conscious and unconscious) of one’s own body motions
- Proprioception – sense of the relative position of one’s own body parts and the strength of effort being employed
- Context – need/development
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2. Relevant Biology (not main focus)

[≈ 200 words] –

- a) homeostasis and the body – stimulus response
- b) feedback – making this work anew
- c) agonist-antagonist groups to recreate proprioception
- d) surgery – regenerative muscles to nerves
- e) blurring lines between machine/human interaction

3. How the focus (Bionics) Illustrates SHE (interaction between science and society)

[≈ 600 words] –

- a) Development of prosthetics over time – dependence on steps before
- b) Current breakthroughs: surgical techniques, miniaturization of tech, computing
- c) Collaboration between many fields in science
- d)

SHE:

- How main focus(s) is demonstrated; what info is still needed; draw conclusions about how human ingenuity + need has enabled the current technology and will drive it into the future
- Communication and collaboration – different fields
- Development – wide range of fields up until now; new tech – improve ability of decoding nerve messages and sending
- Development – previous amputations done poorly in retrospect; but new tech dev can mean we go back and revise them!

Commented [TaKBI]: I made this after I had done quite a bit of research and I knew where I was going. Doing this helped me eliminate some things and fill in others that I suddenly realized were missing or 'light on'. You may deviate from this plan in your final report, but it should contain the general plan you will follow.

4. Potential Impact

[≈ 300 words] –

- a) Future development – where to for this?
- b) Machine/human interaction
- c) Benefit for Amputees (aspects: social, mental, physical)
- d) Problem of cost and aim for future – more available.

SHE:

- Further collaboration
- Development – wide range
- Influence – acceptance influenced by costs!

5. Conclusion

[≈ 200 words] –

****Key – don't forget:**

- Must make judgments and justified conclusions about what you are analysing – this isn't JUST a report, but your analysis of it!! So you analyse how it shows SHE and explain/justify it... not just getting quotes that say it. Eg. 'So, with these observations from the current state of the technology we can see that it is dependent on...'
- Use 'interaction between science (development) and society'

SHE for this Report

Development [major]

The current bionic sensing prosthetics would not be possible without the previously developed standard prosthetics in the past.

Even recent studies have been improved on – from pressure to texture

The current bionic sensing prosthetics would not be possible without the development of current state of the art surgical procedures that built on previous and 'crude' surgeries. – non-invasive, connecting nerves to muscles and computer electronics

The current ability to be portable is only a recent development of miniaturization of technology so patients can take it out of the lab.

Current possible acceptance will increase from what it has been before due to being able to control it with the mind and feel it with normal feedback processes in the body.

Future Development

Clara Sabhel (née Fryburger)

Race is on to make it more cost effective and practical (smaller)