

Stage 2 Research Project A – 2014

External Assessment Cover Sheet

Assessment Type 3: Review

SACE Registration Number:

--	--	--	--	--	--	--	--

Research Question: What are the key design features of surfboards that cater for different body shapes, surfing styles and surfing conditions? _____

_____ **word count** _____

This **evaluation** is assessed using the following specific features:

Synthesis	Evaluation
S3	E1
	E2
	E3

Research Project A

Assessment Type 3: Review

What are the key design features of surfboards that cater for different body shapes, surfing styles and surfing conditions?

Summary of the research question and research outcome

For my research question I looked at the way to select a surfboard that works best for my height, weight, surfing style and the conditions I surf in. I focused on surfboard design and how design features can be fitted to work in different ways. I also researched the history of surfboard design, which gave me some information on how surfboards have changed over time to improve the performance and to suit the style of individual surfers. In terms of ethics, I explored the environmental and health issues involved with production and disposal of fiberglass surfboards and the other options of wooden surfboards. I used various sources including books, magazines, the internet, telephone calls, documentaries, interviews and my own testing of boards in the water. I presented my outcome in a report that expands on my key findings.

140 words

Review

Through my research project I discovered a lot of knowledge specific to my own surfing style and board choice. Researching the history of surfboard design led me to understand that many improvements in design have happened and often they come from assessing the advantages, disadvantages and suitability of a particular board for different surfers in different conditions. I was able to compare my current board to a range of other boards, which helped me to form an understanding of how appropriate it was to my surfing style, conditions and individual needs. In speaking to other surfers and my experts I managed to learn a lot about my own surfing style and how I can work my body to take advantage of the design features that different boards are made with. Firstly, board length and width is critical, and as I am an accomplished surfer I should favour a shorter board as it will allow me to manoeuvre easier and perform radical moves. Whereas a squid starting off should go for a longer board as they are easier to paddle and catch waves with. Although this wasn't too surprising, I did not consider nose and tail width which also impact on performance - the wider the easier, the narrower the harder but gives more control.

One aspect I never considered was surfboard bottom, this was very complex and difficult to understand. I discovered that there are four main contours (vee, flat, single concave and double concave) and that when shaping a personalised board most shapers use a combination to get the best results. I also learned about fins and the way they help surfers to steer, most boards have a tri-fin, but some still prefer one fin which is old-school, but new technology are looking into 5 fins. This discovery was very useful as surfboard bottom and fins are particularly critically depending on which conditions you are surfing in.

As I was doing my research I found out that surfboard design has many other issues related to it that I did not consider. Early on I decided that I would not be able to shape my own fibreglass surfboard (which was my original plan), but more interestingly that there are serious environmental and health effects linked to making fibreglass surfboards. At one stage I made the decision to move my focus into this new area as I'm quite interested in the environment and sustainability, however my teacher said that I had gone too far down my surfboard design path and it was going to be difficult to begin again looking specifically at the environmental effects of fiberglass in surfboard design.

What I did find that was surprising was that much of the specific information I found on the internet and in books about surfboard design was related to male body types and physique. This was a challenge that frustrated me at first, but got me more motivated. So I turned to current surf magazines and websites that were targeted at a female audience and compared this info with some I gathered through talking to other local female surfers. Through this approach, I was able to compare different opinions, including male and female perspectives, and also obtain a broad variety of information.

As I mentioned earlier a significant challenge in my research was that my original aim of building my own fiberglass surfboard would be impossible. In the beginning I wanted to find a surfboard design that best suits my height, weight and surfing style, and to make or design this surfboard with the help of a shaper. After contacting surfboard shaper, D_____ G_____, I had to change my idea of making my own board because he said that it is a difficult tasks that requires alot of time and experience. However I had a chance to meet local board shapers down at the try-out day in _____. This couple had been making boards for 25 years and this meeting got me thinking about the option of wooden surfboards.

Alot of the information I found to examine how a surfboard works in the sea and how different designs and body types effect its working were all about physics. I have never studied pysics and much of the information was very complex. It slowed me down alot and I was becoming frustrated with trying to read through and understand alot of the technical information that was needed. My librarian put me on to some other books, some even for primary school students, and the main difference was that they had alot of diagrams. The use of diagrams and photos was helpful in explaining some of the more difficult information related to surfboard design and features. So that even if I could not make my own board, I at least understood the basics of how they worked.

I had the opportunity to organise some formal interviews with local champion surfers and board makers. I decided to give the experts the choice of doing an email interview or a phone interview if they did not have the time to meet me in person. Luckily the three experts I interviewd accepted to do face-to-face interviews. The one on one interviews were a good decision as I was able to get specific information and also ask further questions if I didn't understand something. It was also helpful to actually see the person talking, particularly when one of the surfers was describing a certain surfboard feature, such as concave or vee, with their hands. In this way, interviews were much more useful than if I had had telephone conversations.

The practical side of research was one of the most important skills to test out surfboard design theories to gain a better understanding of them. One of the challenges I had was how to rate each board and assess which feature was better in different conditions. Before starting my board test, I had to work out the best way in which to set out my observation sheet. I decided to conduct a board test at G_____ Beach and put together a sheet to record the performance and suitability of each board. I tested six boards in total and tried to pick ones that had different design features so that I was able to make comparisons between them. I used the same template for each test and tried to catch three waves on each board in order to make the test as fair as possible. Although I was making good progress there were many different variables affecting my assessment of the boards' performance. Some of these included the incoming tide, the changes in wind direction, the amount of surf wax on each board and I was growing more tired as the day went on. It was difficult to reach a definite conclusion, although some boards certainly worked better than others on the day. In the end I think the test supported my earlier research that a shorter board with a narrow nose and tail were best for my body and style. All the boards I tested had three fins and I did not get a chance to use a single fin or new 5-fin board. This test was an important learning experience and improved my understanding that professionals need more than one board for varying surfing conditions.

The report I produced was very informative and well researched. I am happy that I managed to convey the different aspects of the design features of a surfboard; such as height, width, tail and nose size and surfboard bottom, and explain to those interested what to look for when thinking about buying a new surfboard. The main aim of the research was improve my own surfing by selecting the best board to suit me. I believe that I now have a good understanding of surfboard design and the type of board best suited to me was a _____, but the reality I didn't consider was price. This board cost \$899 to buy new and is way out of my price range. Although I feel my report was quite detailed and informative, I did realise that surfboard technology is moving very fast so board manufacturers are always trying to improve performance by changing design features.

What I was pleased with about my report that I didn't originally plan was the environmental awareness aspects of surfing. I did add a section in my report about the health and environment issues related to production of fibreglass boards and discussed other environmentally friendly options. I would now like to work towards shaping my own surfboard. I may get the opportunity to do this soon, as L_____ B_____, a local surfboard shaper in M_____, has offered to help me shape a board. I am aware of reducing my impact on the environment as much as possible, so it would be great if my board was wooden and made using natural materials. I think this is an amazing opportunity, and I really like the idea of creating a board unique to me that takes into account everything I have learned in my research and will be able to enjoy for a long time.

1522 words