

A2 | Critical Reflection

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Critical Reflection Essay

This semester, I was fortunate enough to participate in a work integrated learning (WIL) placement with Australian based biotechnology start up *Eclipse*. Founded by Siobhan Coster and spun out of CSIRO, this experience offered a highly practical and insightful opportunity to apply all the entrepreneurial theory I have learnt throughout my degree to a real-world context. Over the semester, I met weekly with Siobhan via Microsoft Teams so our group could review progress, evaluate any of the group's findings and refine our direction. The project cantered on exploring customer attitudes towards the implementation of Lactoferrin in skincare, with a focus on identifying a minimum viable product (MVP) for Eclipse's entry into the cosmetics space. The experience offered me not only valuable insight into the technical side of innovation but also fostered significant personal and professional development by getting me out of my comfort zone and pushing me into new things.

Throughout my placement, I came to learn a lot about my own capabilities in a professional sense, in my working style and in areas where I can grow. I will be honest; in the beginning I underestimated just how challenging communication can be in a group environment. I feel that our team experienced periods of misalignment, where tasks were completed without any collaboration or critical review. Initially, this frustrated me and I was unsure how to address this issue diplomatically within the group. However, we got through it and I feel this situation taught me the importance of maintaining open lines of communication, accountability and structured coordination within group projects.

One of the most valuable aspects of the WIL experience to me was the opportunity to work directly with Siobhan whose passion, entrepreneurial mindset and drive provided authentic insight into the realities of being a founder. We caught up through weekly Microsoft Teams meetings on Mondays, where I gained valuable insight into the regulatory constraints and processes involved in bringing new ingredients to the cosmetic skincare market. Additionally, her willingness to share both the highs and the lows of her journey inspired me to view this career path as something attainable for me. By establishing this professional connection with Siobhan, it was not only motivating but also showed me an example of the resilience and adaptability required to succeed as a startup founder in biotech.

Prior to beginning this placement, I had developed the foundational understanding of innovation principles such as the lean startup and design thinking. However, I had only ever applied these frameworks theoretically. This experience allowed me to apply my knowledge and skills acquired over the last three years of my degree and apply them to a real-world project.

We used the design thinking process to guide our initial research, conducting over thirty customer interviews across diverse demographics from which we used the data to produce our empathy mapping. This gave us incredible insight into the minds of the consumer, what they want, how they feel, what do they need? It truly made the emotional and practical needs of each user group visible. We discovered that women 16+ typically prioritised hydration and gentle but effective products, men valued simplicity and affordability, and beauty professionals sought credibility and education. These findings allowed us to shape an understanding of Eclipse's target customer and clarified the company's competitive advantage

through positioning lactoferrin as a “science-backed, yet gentle skincare ingredient”. By applying design thinking in this way, it strengthened my ability to interpret human behaviour and identify genuine user needs.

The lean startup methodology became increasingly relevant as our project progressed. At first our team had considered developing a sunscreen as one of our MVPs, but after meeting with Siobhan we discovered that because of TGA regulations, the barriers to entry were just too high. This realisation prompted us to pivot towards a moisturiser or serum, a decision I now look back at and realise we were using the lean startup *Build-Measure-Learn* loop in real time. So, by refining our MVP based on evidence rather than assumption, we were able to demonstrate agility and resilience skills that will be invaluable in any future contexts. I also applied these principles when distributing surveys around campus and online to validate our value proposition and MVP. By testing this, I was able to gain customer feedback and learn how iterative testing can reduce uncertainty.

The concept of effectuation was also reflected in our groups approach. We had to work within the constraints of a small student team which required adaptability and creative problem solving. Additionally, Siobhan’s mentorship truly illustrated how entrepreneurs can build networks of shared value and co-create opportunities instead of waiting for the ideal conditions, because let’s be real...waiting won’t get you anywhere. This shifted my mindset from being overly cautious and somewhat risk avoidant, to being able to experiment strategically.

I can say overall, this experience has profoundly influenced my career aspirations. Before working with Siobhan and Eclipse, I viewed entrepreneurship as something

distant and uncertain. However, since being given the opportunity to engage directly with a founder, contribute to real market research, and learn how to navigate ambiguity firsthand, I've built my confidence to pursue innovation driven roles in my future. I now see startups as a dynamic learning environment that foster creativity and can accelerate professional growth. This experience solidified my interest in pursuing a career in innovation management or venture development, where I can apply the theory and principles to bring new ideas to market. I also feel a stronger sense of self-efficacy and believe that with the right mindset and network, I could one day launch my own venture.

Overall, I found the WIL experience to be engaging and relevant, particularly the emphasis on being able to apply theory to a real-world setting. Working with a startup offered an authentic insight into the complexity of innovating outside of just the classroom. However, I believe some improvements can be made to enhance the learning experience of future cohorts.

First, establishing clear team communication protocols at the beginning of the semester would help prevent early confusion. By providing a brief 'ways of working' session could help set initial expectations surrounding accountability, task ownership and decision making. Secondly, the implementation of a peer review system could prove beneficial to provide insight into the dynamics of certain groups and validate any issues or complaints made throughout the semester. Finally, I would suggest offering students a more diverse mix of startups to work with and the opportunity to do more background research before having to choose. I do understand that it was difficult to secure startups to work with this semester however I feel it would be beneficial to future cohorts.

Reflecting on my WIL experience with Eclipse, I can confidently say I have not only gained professional skills but also a deeper understanding of how entrepreneurial theory translates into practice. The challenges our team faced around communication, iterative design and managing uncertainty became powerful opportunities for growth. Through empathy mapping, MVP testing and collaboration with Siobhan, I developed the confidence to think critically and adapt strategically to problems. The combination of design thinking, lean startup and effectuation provided a guide that was both structured yet flexible, that I can apply to future innovation projects. However, most importantly this experience reinforced my belief that successful entrepreneurship stems from continuous learning, collaboration and the courage to make change.

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Reflective Diary Entries

Diary Entry 1 – 01/09/2025 - Beginning of Placement

My first meeting with Siobhan really set the tone for the semester. I was immediately inspired by her story, and it really made me think to myself, *'hey I think I can actually do this myself one day.'* My initial tasks focused on developing our project scope and outlining some clear short- and long-term objectives including a BMC and how we were going to turn those insights into interview questions. It is still early stages yet, so I am still trying to fully understand the company and what Siobhan wants and needs from us. I'm excited to see where this journey takes us and am enthusiastic about the potential uses for this precision fermentation process to produce other ingredients.

Lessons from this week: Proactive communication and planning are key! This will enable us to stay on task and adhere to our proposed timeline.

Diary Entry 2 – 15/09/2025 – Meeting with Siobhan

I was the only team member able to attend our scheduled meeting today with Siobhan. The session proved to be very valuable and insightful with Siobhan emphasising that our interview participants needed to align more closely with some target demographics, so we decided to each interview three women aged 16+, two men who do not typically use skincare, one male who uses skincare and one representative from the beauty industry. We need to do this instead of just relying on contact contacts within our personal networks. She also encouraged us to being our B2B outreach, targeting companies such as Mecca and Sephora to understand how established beauty retailers evaluate and adopt new cosmetic ingredients into their products.

During the meeting I also asked a technical question about how long lactoferrin needs to remain on the skin to penetrate the dermis (the middle, tough layer of skin) because this would tell me if we needed to focus our MVP into leave on products or if it could be in wash off products. Siobhan explained she would liaise with the Mater's research team currently investigating this and share any insights she finds.

Lessons from this week: By attending the meeting alone, I feel I developed my confidence in representing the team and gained further clarity around the scientific and commercial validation processes for skincare.

Diary Entry 3 – 29/09/2025 - Interviews

During this stage we are well into conducting our interviews. I focused on coordinating and conducting several in-depth interviews. I really enjoyed getting to interview my sister who runs her own business in the skincare industry and sees clients everyday – it was cool to learn more about what she does and have crossover with our two career pathways. Her insights highlighted that clients increasingly prioritise science and evidence-based efficacy over marketing claims. It really resonated with me when she said, “we don't want an influencer who was paid to tell us the product is good, we want real people with real, unbiased reviews”. Throughout this process I learned the importance of asking open-ended questions and allowing the participants to articulate both their rationale and emotional considerations.

Lessons from this week: This experience improved my interviewing and qualitative analysis skills which helped me to translate individuals abstract preferences into actionable insights.

Diary Entry 4 – 06/10/2025 - Empathy Map + MVP

This week our team synthesised all our data and insights from thirty customer problem interviews through empathy mapping. This really helped us to visualise our user motivations, frustrations and desired outcomes across three key segments – female consumers 16+, male consumers and beauty retail professionals. The empathy map revealed distinct behavioural and emotional patterns amongst the interview group. Women prioritised hydration, gentleness and proven efficacy over branding; men valued simplicity affordability and visible results; and the beauty professionals really emphasised education, credibility and consumer trust especially when it comes to adopting new ingredients for their clinics. Analysing these insights allowed us to define Eclipse’s ideal customer as someone who seeks science-backed skincare that is gentle, effective and uncomplicated.

These findings directly informed our direction for the MVP. Initially, our team was debating between a serum, moisturiser and sunscreen as these aligned with what our empathy map data showed that participants preferred to invest in leave on products and not wash off like cleansers that do not stay on the skin very long. They also wanted hydration without irritation, so based on this evidence we shifted our focus to moisturiser and sunscreen. As part of the lean startup approach, we integrated our visual mock ups into our survey to test multiple different product propositions to identify which message resonated most with consumers.

Diary Entry 5 – 13/10/2025 - Survey + Final meeting with Siobhan

This week was our final meeting with Siobhan; we covered our survey questions and gave her a rundown of what we expect to complete in the coming weeks to present to her our final deliverables. I distributed survey flyers all around campus and even joined skincare Facebook groups to share the survey and reach more

people in our target demographic. However, out of the five pages I posted on, I only managed to get one post approved, admins took the rest of them down and reported me. Oh well, I guess it is all part of the journey.

We concluded the meeting with an agreed game plan of what still needed to be done to consolidate all our data and present Siobhan with actionable insights. We plan to organise the survey data and update our empathy map; we must also critically assess our MVP and decide to pivot or persevere based on insights gathered from our updated BMC.

Lessons from this week: Innovation is not a linear process and requires regularly revisiting assumptions and adapting direction based on the evidence.