Mana Tohu Mātauranga o Aotearoa
New Zealand Qualifications Authority

Level 2 Technology 2024

91358 Demonstrate understanding of how technological modelling supports risk management

EXEMPLAR

Achievement

TOTAL 04

Introduction:

In this report, I will discuss how I have used technological modelling throughout my design process to support risk management. Technological modelling refers to the process of practicing and preparing designs and projects to design a final product. Technological modelling also allows you to evaluate designs and make changes before the design process has escalated too far out of the desired path. It is important to use technological modelling in the design process because it can help prevent and manage risks. Practicing and preparing in the design process allows you to recognise risks that may occur and prevent those risks from happening to make the design process safe and efficient. The techniques that I used in my design process were mood boards, ideation, technical drawings, functional modelling, stakeholder feedback, prototyping, testing/sampling, and fitting checks. These techniques helped me manage risks such as the design not being appropriate for the context, lack of originality, wastage of material, inaccuracies in fitting, inaccuracies in construction, construction decisions, and design decisions. The technological modelling techniques I used contributed greatly to my design process and management/prevention of the risks I encountered throughout the design process.

Mood Board:

A mood board is a collection of images and ideas that communicate the mood and tone of your design. They are used to help inspire potential colours, designs, shapes, and the overall mood of your designs. I used a mood board when planning my conceptual design. The theme of my conceptual design was sustainability, so I found images of clothing, colours, and other examples images that represented my theme. I put these images together to display the mood and style that I could link back to as the design process progressed. In this process, I used my mood board to gather evidence of what could happen by using the colours and shapes in my mood board to give me inspiration and ideas for the future of my designs. These colours and shapes helped me eliminate certain clothing styles from the planning of my design. If I noticed that my design was taking a different route, rather than reading my design brief, I could look at my mood board and decide if the design still matched my original idea. A mood board is appropriate for research and developing ideas as it provides you with a starting point – a group of images that represent your overall idea. You look back on your mood board throughout the design process to make sure your design stays on theme. Having a mood board allowed me to make important decisions about the colours and styles of my design. I formed a base with my mood board, and looking back on the original plan for my design helped me make design choices such as colours and shapes – it helped me make sure that my design still matched my plan. Because my specifications from my brief are visually represented by my mood board, I avoided the risk of my final design not reaching the requirements of the brief. For my conceptual design, I was required to

create a design that matched with a theme or issue. The issue that I chose was sustainability, so I had to design a sustainable garment. My mood board helped me avoid the risk of ignoring the theme because I could look back on the mood board throughout the design process to be sure that I was still on theme. It provided visual representation for an idea that doesn't traditionally have aesthetic features. When creating my mood board I struggled to find different images, making the original mood board plan seem unoriginal. I managed this risk by searching long and hard to find unique images to add to my mood board and make it more original and less repetitive.

Mood board example:

Ideation:

When making an ideation page, you draw shapes, colours, and symbols that are in your mood board, helping you develop your designs with support from your mood board. I used ideation in the process of creating my conceptual design. I drew shapes and symbols that stood out to me in my mood board and coloured them in with the colours that stood out to me in my mood board. I used ideation to gather evidence of what could happen by looking at the shapes and colours that stood out to me, and thought about potential clothing styles that included those shapes or would look good with those colours. Ideation helped me brainstorm how my final design would look. Ideation is important for the early stages of the development cycle because it helps you develop your ideas and form a strong base for your future designs. Finding strong shapes, symbols, and colours in your mood board and drawing them out can help you figure out what direction your designs are heading. The styles of shapes that stand out to you determine the style that your final design will be. You can look back on your ideation throughout the design process to make sure you are still using those shapes, and that

you're still on theme. Using ideation helped me make decisions about the shapes and styles of my final design. The shapes that stood out to me in my ideation only worked with certain clothing styles, so my ideation helped me narrow down the types of clothing that I could include in my final design. Ideation helped me avoid the risk of going off track and having my final design be inappropriate for the context and not line up with my original design brief. When doing ideation, I risked lacking originality. Because my mood board was made up of images I found on the internet, my ideation pages included shapes and symbols that I found on other people's designs. I felt that I had to change these a little bit/develop them more in order to keep my design original. To manage these risks, I developed the shapes and altered the colours slightly to make them unique and avoid plagiarizing.

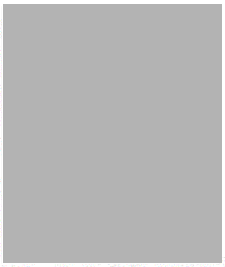
Ideation examples:

Research:

Research refers to the process of gathering information and examples to help you in your designs. You research other designs that you can use as inspiration to help you form your own design. I used research for my conceptual design assessment. My theme was sustainability, so I searched for sustainable clothing pieces. I planned for my design to be suitable for summer, so I researched sustainable summer clothing pieces to help

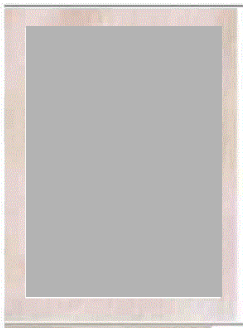
me form a solid brainstorm for my designs. I used research to gather evidence of what could happen because my research of sustainable summer clothing showed me that it is common to mix fabrics when creating a sustainable garment, so I would have to mix different fabrics when making my design. Research is important for the middle of the development cycle because it allows you to form strong ideas about how you want your final design to look. It is important to form solid ideas for your designs so you can focus on creating the best possible design. You can use this research to find ideas if you have none or find more specific ideas if you already have them. Research allows you to make decisions about what you think works well within your brief and what doesn't. Research helps you narrow down your ideas and figure out what specific things you'd like to include in your design based on what you like in other people's designs. By using research, I avoided the risk of the design not being appropriate in the context of the assessment. Before I did my research, I was unsure of how I was going to make a sustainable and summery design but researching other people's designs helped me figure out how I was going to make my design match my brief. In the research process, I encountered the risk of my design not being original. I found many designs that other people made that I liked, but because of this, I struggled to think of how I was going to make my own original design, while still using my researched designs as inspiration. I managed this risk by doing ongoing research, finding specific things I liked in each of the designs I found, and using those specifics as inspiration, rather than copying a design or feature of someone else's design.

Research examples:



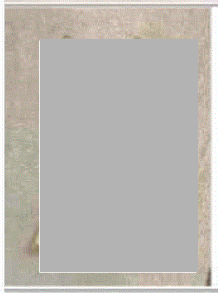
This garment is made of a lightweight fabric which would be suitable to wear in the summer. It's made of a floral fabric and flowers remind me of spring. This top doesn't have sleeves so it would be comfortable to wear when the weather is warmer. The lace on this garment is aesthetically pleasing and lace is a very trendy fabric style which makes me believe that my teenage target market would want to wear this garment. The way the top part of this garment is lighter makes me think that this garment would be flattering to wear, but it's not too revealing so people would also feel comfortable wearing this garment.

This garment is made of what appears to be re-used denim and floral fabric. The floral fabric reminds me of the flowers that grow in the spring. This garment is also strapless so it would be comfortable and suitable to wear in the warmer months. This top looks like it comes together in the middle with buttons. I would like to do something similar with my garment, re-using old buttons. The frills on the top are trendy and make me believe that my teenage target market would want to wear this top. The garment becomes smaller around the waist, and I think that would look very flattering when worn.



Aesthetic:
This garment is very summery; it's a very vibrant colour, reminding me of the vibrance that summer brings. The floral pattern is minimalistic but still noticeable. The light and minimal flowers make the colour of the rest of the top stand out. At the top of the garment there is some lace which I think is very pretty and trendy. The bow details on this garment are also very trendy and pretty.

Functional:
This garment is made of a lightweight fabric, has no sleeves, and seems somewhat flowy, making it suitable to wear in warm weather. This fabric also appears to be stretchy which would make it comfortable to move around in.



Aesthetic:
This top is made of summery colours and has a floral pattern which reminds me of spring. The pattern is minimal which makes it look more elegant and stylish. The pastel colour is trendy, and the silk fabric is timeless. The neckline is flattering as it is low cut and V-neck.

Functional:
This top is made of lightweight fabric which is suitable for warm weather. The straps are thin, which isn't restrictive and therefore the wearer will be comfortable moving around in it. The silk fabric is cool on the body, making it suitable to wear in warm weather.

Stakeholder feedback:

Stakeholder feedback is the feedback that you receive from your target audience throughout the design process. I received stakeholder feedback when planning and creating my conceptual designs. I asked people of my target audience to tell me things they liked and didn't like about my designs to help me make the designs more desirable for my target audience. I used stakeholder feedback to gather evidence of what could happen because my stakeholders told me what they didn't like/thought I should change, and that allowed me to recognise faults in my designs and make my next design better. Stakeholder feedback is appropriate for all stages of the development cycle because it helps you figure out what you need to do. Because of stakeholder feedback, you know what you're doing right and wrong, which will help you make the best possible design for your intended audience. My stakeholder feedback allowed me to decide what I wanted to change and add to my designs. For example, my stakeholder said that they thought my design would look better if I used smaller flower patterns, so I made the decision to use small flower patterns in my future designs. Stakeholder feedback helped me avoid the risk of my design not being appropriate for the context/the stakeholder. I wanted my designs to be enjoyed by teenage girls, so receiving feedback from teenage girls helped me figure out what they wanted in a design, and therefore my design would match up to the interests of my intended audience. In this process, I encountered the risk of my

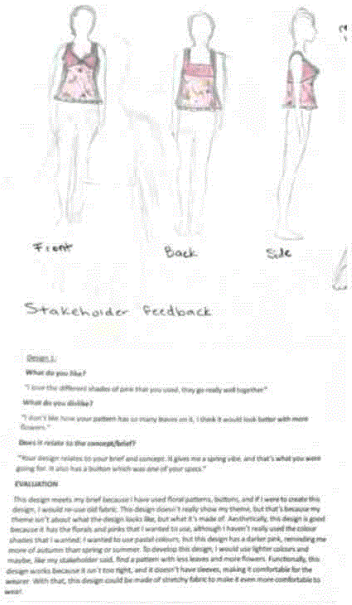
design not being functional. This is because all the stakeholder feedback that I received was aesthetic feedback, so I only knew what I had to change to make my designs look better, rather than feedback for the looks and function of my designs. I managed this risk by figuring out for myself if the design seemed functional. I looked at my drawings and prototypes to examine if the design had all the specifications and features that it needed to be comfortable and functional.

Stakeholder feedback examples:

"I love the halter neck, although I think the neckline could be lower – more like your fourth inital design."

"I think the placement of the flowers is kind of awkward, maybe you could use smaller flowers."

"I love the colours; they go really well together and give me summer vibes."

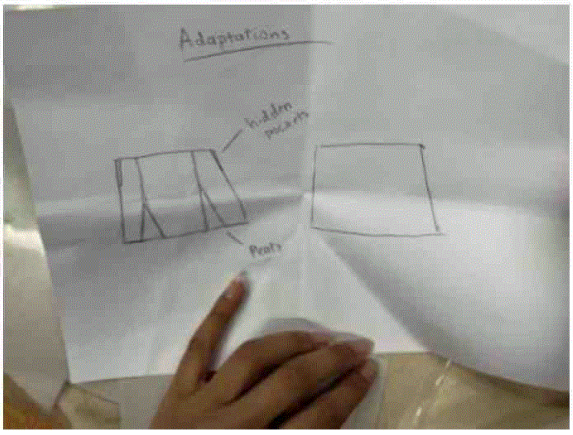


Technical Drawings:

Technical drawings are drawings you make of your design that point out the technical features that you're going to include in a final design. Technical drawings allow you to recognise the things that you may have to add to your patterns to help you make a garment functional. I used technical drawings throughout the process of creating my garment. I made a technical drawing of my original garment and for my garment with changes made to it. I used technical drawings to gather evidence of what could happen by examining the ways that the garment could fail functionally or the things I might not have been able to realistically accomplish. Technical drawings are appropriate for the beginning stages of the development cycle because they help you figure out what features you would like to include in your garment. Looking at the technical side of things can help you figure out if there's anything you might not be able to do. Technical

drawings helped me decide what features I would like to use and what features I have the means and materials to pursue. Technical drawings helped me avoid the risk of my garment not being functional, as I could examine the features I wanted to use and plan how I was going to execute these features. When making my technical drawings, I encountered the risk of my design not being appropriate for the assessment. I made my technical drawing without thinking too much about how the garment would work when constructed, so I figured out later in the design process that the drawing I created wouldn't work for the requirements of the assessment, as it needed to be more complex. I managed this risk by re-making my technical drawing, so it worked for my assessment requirements.

Technical drawing example:



Prototyping:
Prototyping is when you create a draft of your full garment. You use a sample fabric and create the garment so you can see how the garment will look and recognise any changes you may need to make before creating your final garment. I used prototyping when making my mini skirt. My first prototype was of the original pattern. This helped me decide what I wanted to add and showed me that the sizing was correct. My second prototype was made with the changes I decided on and drew out. This helped me see how I liked the style and fit with these changes. My third and final prototype was made to use as an example of my final design. I made sure to construct this prototype cleanly, as it had all the changes I wanted to make and was my last prototype. I used prototyping to gather evidence of what could happen because my prototypes showed me where I made mistakes, and they showed me what would happen if I didn't fix those mistakes in my final garment. I had issues with the length of the skirt, and my prototypes allowed me to alter the length and change the length of the skirt in my final pattern, so my actual garment turned out the way I wanted it to. Prototyping is important for the development cycle because it allows you to develop your garment hands-on. You can see and feel the

issues with your garment and fix them before you get to using the final fabric and waste time and expensive material. Prototyping allowed me to decide what changes I wanted to make to my garment. I didn't know what adaptations I was going to make to my skirt, but after seeing my first prototype, I realised that I didn't like having a tight skirt, so I chose to add pleats because of the issues I recognised in my prototype. Prototyping helped me avoid the risk of having construction issues. Creating prototypes of my garment allowed me to see try the garment on and see if it fit well and if it would stay secure when moved around in. The prototyping process made me encounter the risk of wasting materials. I had to make multiple prototypes using fabric that I was never actually going to wear. Although this fabric was made for prototyping, it is still wasteful to make multiple garments that aren't going to be worn. I managed this risk by wasting as little fabric as possible when prototyping. I made sure to cut my patterns as close to the edge as possible. I also made sure to go slowly so I didn't make any mistakes when cutting.

Prototyping examples:

Testing/sampling:
Testing/sampling is when you focus on a specific feature/part of a garment and practice creating that part of the garment. This is usually done with more complicated parts of garments because you would likely need more practice to create them cleanly and properly. I used testing before creating my final skirt because there were a few features that I felt needed some extra practice such as the pleats, pockets, zipper, and facing. I used testing to gather evidence of what could happen because testing specific features

of the garment informed me of and prepared me for any construction issues that specific parts of my garment would have. It allowed me to practice difficult steps and notice if there were parts that might be too difficult for me to do with thicker fabric. Testing is appropriate for the preparation stages of the development cycle because it helps you improve your skills and develop your knowledge of specific parts of your garment. Understanding specific parts of your garment (how they're constructed, why it works etc.) is an important step in making your garment functional and suitable for your construction goals. Testing parts of my garment allowed me to decide what type of pocket I was going to use in my final garment. After making a sample of the pocket I made in my prototypes, I was informed that it could be more complex in my final design, so I decided to make a slant pocket. I hadn't done a slant pocket before, so I needed to test and sample this pocket multiple times to understand the slant pocket and improve my skills. Testing helped me avoid the risk of having construction issues. I made samples of the features of my skirt that I thought were harder to construct, and practicing those features helped me make sure I confidently knew how to construct those parts, and therefore helped me avoid the risk of my garment not functioning properly. In the testing process, I encountered the risk of having issues with design decisions. Because I changed my pocket from an inseam pocket to a slant pocket, I had to create new pattern pieces, which I struggled to figure out how to make. I didn't have any knowledge of slant pockets, so I was stuck when I was supposed to make my new patterns. I managed this risk by asking a friend who was also doing a slant pocket for help. My friend helped me understand the different parts of a slant pocket, which helped me figure out how to make my pattern. Having this knowledge before creating my patterns also stopped me from wasting paper, which could have happened if I didn't ask for help.

Testing/Sampling examples:

Fitting checks:

Fitting checks refer to the act of checking your garment throughout different stages of construction to make sure that the construction is going the way you'd like it to, and that it will fit the model when it is completely constructed. You do fitting checks to make sure that you can fix any mistakes in sizing or construction before more steps have been made that would make it hard to fix. I used fitting checks throughout the construction of

my skirt to check that it would fit me and feel comfortable. I tried it on in different stages of construction because there were things that I wouldn't be able to fix if I noticed mistakes within them after the full garment was constructed. I used fitting checks to gather evidence of what could happen because I needed to do everything to my best ability, and to do that you must double check that each step has been done correctly. The functional quality of your final garment depends on the functional quality of each step of the garment, so you need to pay attention to the details and make sure each step functions well for the final garment to function well.Fitting checks are important for the development cycle because it allows you to develop your design well, doing one step at a time. Checking that things fit correctly at each stage helps you make sure that the rest of the garment will work. If one thing is done wrong, the rest of the garment won't work. Doing fitting checks helped me decide if I needed to change anything last-minute. I checked that the lengths of my front and back pieces matched up before sewing, in case I needed to hem the pieces more to make them match up better. Fitting checks helped me avoid the risk of having inaccuracies in fitting. I tried on my garment at most construction stages to make sure that it fit me and wouldn't break if I moved while wearing it. However, I did encounter the risk of having construction issues when making my pocket. I forgot to do a fitting check and sewed it the wrong way. Because I didn't check how the garment would fit when sewed by pinning the edges together, I had to unpick the pocket. This held me back and wasted time. I managed this risk by remembering to check everything before and after I sewed it to be sure that I wouldn't make the same mistake again.

Fitting check example:

Conclusion:
Technological modelling techniques such as mood boards, ideation, technical drawings, research, stakeholder feedback, prototyping, testing, and fitting checks help you manage risks in the design process because they help you prepare for the future of your design. These techniques helped me manage risks by giving me insight into the progression of

my design and warned me of any mistakes that I might make throughout the rest of the design process. Technological modelling prepared me for the future of my designs, and this preparedness helped me avoid risks and helped me overcome the risks that I did encounter throughout the design process.

Achievement

Subject: Technology

Standard: 91358

Total score: 04

Q	Grade score	Marker commentary
One	A4	This report is based on a textiles project. The brief is not immediately obvious, the context is sustainable design, and the student ultimately makes a prototype skirt. The candidate identifies risks throughout the report, some risks being a little obvious and some relevant. They do not judge the severity of the risks. The candidate refers to stakeholders in one section of the report but would have benefited from referencing feedback at each stage of the development.