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92006



Mana Tohu Mātauranga o Aotearoa  
New Zealand Qualifications Authority

## Level 1 Digital Technologies 2025

### 92006 Demonstrate understanding of usability in human computer interfaces

Credits: Five

Achievement	Achievement with Merit	Achievement with Excellence
Demonstrate understanding of usability in human-computer interfaces.	Examine the usability of human-computer interfaces.	Evaluate the usability of human-computer interfaces.

Complete ALL parts of this examination.

You should aim to write no more than **1200 words** in total.

Excellence

TOTAL **08**

## INSTRUCTIONS

The task in this assessment is in five parts:

- Part A – Short-answer questions
- Part B – Identifying usability principles
- Part C – Interface you have studied
- Part D – Scenario questions
- Part E – Real-world examples.

**Complete ALL parts of this examination.**

You should aim to write no more than **1200** words in total.

In Part D, you are required to discuss the application of usability principles in the development of a phone app (scenario A) or examples of the incorporation of usability principles into the design of a new website (scenario B).

In Part E, you may play, pause, and restart the videos as often as you like.

*Note: the videos have no sound.*

Read all parts of the examination before you begin writing.

**Usability principles can refer to any of the following:**

### RESOURCE A: Mātāpono Māori

Mātāpono Māori relevant to usability could include the following aspects:

- The clear and accurate use of te reo Māori (including tohutō / macrons) within the interface.
- Whether tools such as spell-checking and word prediction work accurately with te reo Māori.
- Manaakitanga – the interface is welcoming and respectful of users.
- Rangatiratanga – users have control over the interface.
- Whanaungatanga – the interface design fosters connections and relationships.

### RESOURCE B: Nielsen's 10 usability heuristics

“Usability heuristics” are general principles or “rules of thumb” to help measure the effectiveness of a user

## 10. Help and documentation.

Source (adapted): Nielsen, J. (1994, updated 2020), *10 Usability Heuristics for User Interface Design*. Nielsen Norman Group.  
<https://www.nngroup.com/articles/ten-usability-heuristics>

### RESOURCE C: Usability concepts

- Internal and external consistency
- Accessibility.

### PART A – Short-answer questions

Table 1: Nielsen's usability principles.

Number	Description of usability principle
1	The interface should take into account the diverse range of people who might be using it and enable all users to achieve their goal.
2	The interface should always keep users informed about what is going on, through appropriate feedback within a reasonable time.
3	The interface should reduce unnecessary elements and simplify the layout.
4	Users should be able to undo actions if they make a mistake.
5	The importance of providing clear assistance and guidance to users whenever they need it.
6	The interface design should prevent users from making a mistake in the first place.

- (a) Using Table 1 above, complete the boxes below by entering the number of the description that correctly matches each usability principle. One of these has been completed for you.

each usability principle. One of these has been completed for you.

Aesthetics and minimalist design	3		Visibility of system status	2
Error prevention	6		Accessibility	1

(b) Give a definition and example of Nielsen's heuristic 'Match between the system and the real world'.

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Nielsen's heuristic 'Match between the system and the real world' means that the interface will contain elements that the user is familiar with. It means that the interface will not include jargon specific to its service, and could include universal symbols that represent things. The goal of this heuristic is to make the interface familiar to users, therefore making it easier for them to use and know what certain elements of the interface do. An example of this could be including the symbol of a shopping trolley on an online store's interface as somewhere that your items are stored as you collect more. This fits the heuristic as a shopping trolley is an everyday object that people from all around the world recognize as something that stores items.

(c) One example of using mātaōpono Māori is observing the correct use of tohūtō / macrons and spelling of Māori words. What is another way mātaōpono Māori has been incorporated into an interface you have studied?

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The interface that I have studied is Trade Me. Another way mātaōpono Māori has been incorporated into this interface is the use of Manaakitanga: it is welcoming and respectful of all users. This has been incorporated into the interface by allowing users to sign up and make accounts with many different cultural names and symbols. For example, you can make an account with the name having a macron in it. This welcomes people from all cultures and is respectful of their traditions and names.

## PART B – Identifying usability principles

(a) Identify and describe TWO usability principles that can be seen in the image below.



Source: <https://makodesign.co.nz/collections/necklaces-and-sets>

Usability principle 1:

Description:

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The usability principle of 'Visibility of System Status' means that the interface will provide updates in a reasonable time to the user about the current state and situation. This allows users to know what is happening while they use the interface and it makes the process a lot easier for them to understand what is happening. In the image above, Visibility of System Status is shown in the top right with a number beside the shopping cart. This number tells users how many items they have stored in their cart. This provides users with knowledge and the assurance that they know what is occurring in the interface.

Usability principle 2:

Description:

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The usability principle of 'Aesthetic and minimalist design' means that the interface will not have a cluttered and messy look to it. This means that the elements of the interface are not competing with one another. Instead, they enhance each other. This allows the user to focus on the task at hand and not get distracted or overwhelmed. Aesthetic and minimalist design is shown in the image by the amount of white space on the screen. It is very simple to look at and it draws attention to the objects the interface is selling, instead of the design of the website. It is further shown by the simple font choice. Having a simple font choice further allows the user to carry on with their task and not get distracted by confusing and changing elements.

(b) Identify and describe TWO usability principles, **different from those identified in (a) above**, that can be seen in

the image below.



Source: <https://www.jbhifi.co.nz/search?query=PS5>

Usability principle 1:

Description:

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The usability principle of 'Consistency and Standards' means that the same or similar elements are used throughout an interface repetitively. This reduces the cognitive load on users as they get familiar with the elements of the interface and know what they are expecting. This allows them to focus on the task that they are on the interface to do and get familiar with it, so it becomes easier to use and navigate. The principle of 'Consistency and Standards' is shown in this interface by the consistent use of the same font. This lets the user get comfortable with the interface and it makes navigating the interface easy for them as everything is very clear for the user. There is no confusion with different fonts. Another way that this is shown in the interface is the consistent use of the price of objects being contained in a yellow box. This allows the user to immediately recognize that the number is the price of the object as it is consistent throughout the site.

Usability principle 2:

Description:

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The usability principle of 'Match between system and real life' has the definition that I have provided earlier: 'Match between the system and the real world' means that the interface will contain elements that the user is familiar with. It means that the interface will not include jargon specific to its service. The goal of this heuristic is to make the interface familiar to users, therefore making it easier for them to use and know what certain elements of the interface do. This principle is shown in the interface by the use of the shopping trolley symbol and the symbol of a store. The shopping trolley symbol has the universal meaning of being somewhere that objects and items that you want are stored. This means that all users know that this symbol is where they need to go to see what items they have saved. This principle is shown again with the symbol of a store being used as a shortcut to information about where stores are located. The symbol is clearly a shop, so it provides users from all across the world with the instant knowledge that this symbol provides information about stores.

### **PART C – Interface you have studied**

In your response to part C, refer to an interface you have studied this year.

Name of your interface:

Describe the purpose of this interface:

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The purpose of Trade Me is to be an online marketplace where anyone can list goods that they want to sell and other people can see these listings and purchase the items. The seller can also put their goods up for auction, and buyers can place bids on these. This site allows many things to be sold, such as books, computers, cars, property, and employers can post job listings, to name a few.

Explain how effectively two usability principles were applied in your chosen interface, **and** how they enabled the interface to achieve its purpose.

Usability principle (1)

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The first usability principle that is applied in Trade Me, is user control and freedom. This principle means that the user has total control over how they use and interact with the interface. It gives them a way out of a process mid-way through if the user changes their mind. This gives the user freedom and confidence that any decision made is up to them and that they can change their mind or go back at any point.

The interface of Trade Me demonstrates this principle through many examples. First, the interface provides a way for users to remove items from their cart/wishlist with a cross button (X). This lets them change their mind about items if they decide that they no longer want to purchase them. Next, the interface provides users with a way to go back to the previous page/item if they wish. This is done by showing a list of what pages the user has gone through to get to the current one. From there, the user can select a page that they previously visited and go back to it. This again gives the user freedom to move around the site at will and it gives them options to go back. Lastly, the interface lets users stop the checkout process at any point. This occurs in the final stages of shopping

options to go back. Lastly, the interface lets users stop the checkout process at any point. This occurs in the final stages of shopping, when the user has entered their personal details and is about to purchase any items in their shopping cart. User control and freedom is implemented here as there is an option that users can select to cancel this process at any point, or go back to a previous step. This is showing user control and freedom as users can use and interact with the interface however they wish. Any decision made is by the user and they have the power to change their mind at any point. This enables the interface to achieve its purpose by providing ways for users to interact with the interface and select items that they want to purchase.

## Usability principle (2)

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The second usability principle that Trade Me demonstrates is 'Recognition rather than recall'. This principle means that the website will try to provide information for the user or fill in gaps, instead of fully relying on the user for information. This principle reduces the cognitive load on users and makes the interface easier to navigate and interact with as they can recognize information instead of recalling it, which is easier and more simple.

The interface of Trade Me demonstrates this principle many ways. First, when the user is searching for items, the interface will provide suggestions as to what the user is trying to search for as they type it. For example, if a user types the letters 'iP', the interface would recommend the searches of 'iPhones' and 'iPads'. This makes it a lot easier for users to navigate and interact with the site as they do not exactly have to exactly remember the name of the thing they are searching for. This provides the user with a quicker, more pleasant experience. Another way that the interface of Trade Me applies this principle is in the sign up process. When a user makes an account, they will be prompted to enter an address for shipping. As the user starts typing in an address, the interface will provide the user with suggestions and recommended addresses that match what they have typed so far. This again makes the process a lot easier for users as they can recognize their address instead of fully remembering it. This leads to a more enjoyable experience. This enables the interface to achieve its purpose by allowing users to easily enter details find the items that they want.

## PART D – Scenario questions

Choose ONE of the following scenarios and type your response in the box provided.

In your response, do not repeat material used in earlier questions.

### *EITHER*

- (a) Imagine you are designing a phone app for students to track their NCEA credits. How would you use usability principles to create an interface that meets their needs? Discuss at least TWO usability principles you would consider, and how you would implement them.

### *OR*

- (b) Imagine you are designing a website for a New Zealand artist who wants to promote and sell their work. They are passionate about promoting the Māori language and culture through their work. Discuss at least TWO practical examples of incorporating usability principles to ensure the interface effectively meets the needs of the artist and the end users.

Scenario chosen:

(a)

(b)

Write your answer here.

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The first usability principle that I would consider implementing into the phone app designed for students to track their NCEA credits is 'Help users recognise, diagnose, and recover from errors'. This principle means that if something goes wrong and an error occurs, a clear explanation is provided of what happened and what the user can do to fix this issue, instead of just showing an error code. I would implement this by testing the app to see what causes an error, and if one occurs, I will provide an explanation for what happened and how the user can get around this issue to keep using the interface. An example of this could be that if internet connection is lost, instead of the app showing an error and confusing the user, I will provide the user with a page that explains what happened. It could read something like 'Oops, it seems your internet connection has been lost. Maybe try going to settings and joining wifi, or test your router for any issues.'

The second usability principle that I would consider implementing into the phone app is 'Help and documentation'. This principle means that if the user has any issues or questions, there will be a place provided for them to go and get the help that they need. This provides users with the assurance that if anything goes wrong or if they cannot find what they need, they can get assistance so they can keep using the interface in the future. An example of this could be that I implement an AI chat-bot into the app. This means that if users have any questions about the interface, how to access certain information, or the NCEA credit system as a whole, there will be a place for them to go that will instantly provide them with the information that they require.

## **PART E – Real-world examples**

Watch the two videos below before answering the questions that follow. The videos show the user using two different websites. On each, they set up an account and then search for an item to purchase. They add an item to the shopping cart and then remove it in each interface.

*Note: the videos have no sound. Each video can be enlarged by clicking the full-screen icon in the bottom-right corner of the window, and returned to the original size by clicking the same icon at the end of the video. The videos may be viewed as many times as you like.*

Video 1: Māori by Design





Source: <https://www.maoribydesign.co.nz>

### Video 2: The Warehouse



Source: <https://www.thewarehouse.co.nz>

- (a) Compare the usability of BOTH real-world examples. Which of the two websites is the most effective in enabling the user to achieve their purpose? Justify your choice by discussing THREE usability principles.

Enter below, the name of the website you believe to be the most effective:

Discuss your first usability principle in the box below.

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The first usability principle that I will discuss is 'Aesthetic and minimalist design'. I believe that The Warehouse is more effectively using aesthetic and minimalist design than Māori by Design. As we can see in the videos, The Warehouse utalizes a lot of white space in its' design. This allows the user to focus on the task that they intend to do without getting overwhelmed. By looking at the Māori by Design interface, we can see the cluttered and confusing menu. There are many options to select and it instantly overwhelms the user, confusing them and potentially distracting them from the task they wanted to complete using the interface. The Warehouse usalizes the aesthetic and minimalist design better and is more effective in enabling the user to not get distracted on

their task.

Discuss your second usability principle in the box below.

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The second usability principle that I will discuss is 'Error prevention'. As we can see in the videos, when the user is trying to set up an account with both interfaces, their password is not strong enough. In the Māori by Design site, when this short password is entered, all details that the user has entered in the account setting up process gets deleted and the user has to start over again with the new instruction that the password must be longer. On the other hand, by looking at the video from The Warehouse, instructions are instantly provided as the user begins to type their password. The interface does not let the user submit the password until it has met the standards that the interface has laid out for the user. This shows very good error prevention from The Warehouse as they do not let the user submit their password until it has met their standards, and they provide clear instructions on how to make the users password stronger. This prevents the error of an incorrect password from happening in the first place as instructions are given straight away.

Discuss your third usability principle in the box below.

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The third usability principle that I will discuss is 'Help and documentation'. By looking at the videos, we can see that the Māori by Design has no clearly labeled 'help page'. This leaves users without a way to get help or to get more information. This could impact some users experience of the interface as they might have difficulty navigating the confusing interface. By looking at The Warehouse's video, we can see that there is a clearly labeled 'Help' page at the top of the screen. This gives the users a clear place to go if they have any queries about the interface or business. This improves user experience as they will get questions answered, so they are more likely to get their task done. This helps the user achieve their purpose as if they have any problems, they can get help and fix these, so they can continue shopping and purchase items.

(b) Suggest TWO improvements for enhancing the usability of ONE interface from either of the videos above.

Justify your suggestions by referring to usability principles.

Improvement 1:

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The first improvement that I would suggest for Māori by Design is to improve the usability principle of 'Aesthetic and minimalist design'. They could do this by improving the selection menu on their interface. This could be done by grouping more sections together instead of having many sub-sections making the interface look cluttered and confusing. They could add more white space to their interface to draw attention away from the menu and interface, and to the products that they are selling. This improvement would make the experience a lot less confusing for users and it would allow them to complete their task faster.

Improvement 2:

## Improvement 2:

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The second improvement that I would suggest for Māori by Design is to improve the usability principle of 'Error prevention'. I would suggest doing this by instead of only giving instructions on how long the password has to be after it has been submitted and everything has been deleted, provide this information as soon as the user begins typing their password. This would prevent the error of everything being deleted and would save the user the inconvenience and time of having to type every detail out again. This will improve the usability of the interface and users will now be able to make accounts faster and easier, increasing the likelihood that they stay and purchase goods from Māori by Design.

## Excellence

**Subject:** Level 1 Digital Technologies

**Standard:** 92006

**Overall grade:** 08

Grade	Marker commentary
E8	<p>The candidate was confident in the usability principles, making no errors. In parts A and B they described and explained comprehensively (more than needed for these questions).</p> <p>In parts C and D they were able to explain in detail how usability principles were used, and also why they were needed in relation to the user experience. In part D they gave specific ways in which they would apply usability principles to the design of an interface.</p> <p>For part E they confidently compared like-for-like actions in the two websites (e.g. error prevention), critiquing which interface applied the usability principles better.</p> <p>The improvements were obvious suggestions, given the detailed comparison; they clearly outlined them and explained which usability principle was being improved each time.</p>