NZQA

Mana Tohu Mātauranga o Aotearoa
New Zealand Qualifications Authority

Level 1 Digital Technologies 2024

92006 Demonstrate understanding of usability in human-computer interfaces

EXEMPLAR

Achievement   TOTAL **03**

HIGHLIGHT AND NOTES >

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INSTRUCTIONS

The task in this assessment is in five parts:

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

In Part D, you are required to discuss the usability of the interfaces in terms of mātāpono Māori (Resource A) or the usability heuristics (Resource 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 task 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 accurate and clear use of te reo Māori (including macrons) within the interface
- whether tools such as spell-checking and word prediction work accurately with te reo Māori
- how the interface facilitates and allows for the expression and use of tikanga and mātauranga Māori.

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

(i) What does accessibility refer to when applied to human-computer interfaces?

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Accessibility refers to whether or not the human-computer interface can be used by everybody, wheteher or nt it is accessable to different groups of people.

(ii) Give a definition **and** example of Nielsen's heuristic 'Error prevention'.

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The Neilsen's heuristic 'Error Prevention' is when the interface stops an error before it happens. For example when you are logging into a site or signing up for one, when you are typing in your email and password it prevents you from making an error by teling you to put in a valid email, and by telling you what needs to be in your password for proper security, it prevents people hacking accounts.

(iii) Identify and describe one usability principle that can be seen on the image below.

Usability principle: Recognition rather than recall

Description:

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In the photo we can see the options for which cinema you want to go to, this is recognition rather than recall because it recognises which cinema you would like to go to based off of what you start writin gin the search bar.

(iv) The image below has been reproduced with labels numbered 1, 2, and 3. At each of these numbers, one or more of Nielsen's usability heuristics can be observed. Refer to Resource B for a full list of usability heuristics.

1. Which heuristic(s) can be seen at number 1?

User control and freedom because the arrow allows you to go back whenever you want and allows user to easily return to their previous page.

2. Which heuristic(s) can be seen at number 2?

Recognition rather than recall because as you start typing in the search bar, it recognises what you may be trying to write and brings up suggestions.

3. Which heuristic(s) can be seen at number 3?

Flexibility and effiecency of use because it allows users to easily clear the search bar instead of spending time back spacing everything written,

(v) Why should usability principles be considered and applied to human-computer interfaces?

Uisbility principles should be considered and applied to human computer interfaces ebcause the make the interface usable by people. The usibility principles improve the usaage of the interface and improve the experience of using the said interface.

PART B – Matching question

In this question, match Nielsen's usability principles with their description.

Number	Description of usability principle
1	All interface elements should be consistent within the website or application.
2	The interface should follow common practices followed on websites.
3	The interface should reduce unnecessary elements and simplify the layout.
4	The interface should always keep users informed about what is going on, through appropriate feedback within a reasonable time.
5	A message showing that the level of stock is low.
6	The importance of providing clear assistance and guidance to users whenever they need it.

In the table below, enter the number of the description that correctly matches each usability principle.
One of these has been completed for you.

Aesthetic and minimalist design	3		Visibility of system status	5
Consistency and standards	1		Help and documentation	6

PART C – Interface you have studied

In the following question you will refer to an interface you have studied.

Name of your interface: TVNZ

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

Usability principle (1):

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User freedom and control, TVNZ allows users to skip forward and backward during shows, allowing users freedom on what the would like to do or watch on the interface.

Usability principle (2):

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Help and documentation, TVNZ implimates this usability principle by haveing a page thats sole purpose is to help the users. It provides a contact resource and help, as well as different common issues explained.

PART D – Scenario questions

Choose ONE of the following scenarios and write your answer in the box below.

(a) The school website needs updating. Discuss ways of incorporating Māori principles, such as integrating te reo Māori and honouring tikanga Māori, into the update of the website and its content. Discuss at least two practical examples of applying Māori usability principles to ensure the interface effectively serves the needs of the whole school community.

OR

(b) Imagine you are developing a program for students to use in the library to reserve laptops. How would you apply usability principles to create an interface that meets their needs? Discuss at least two Nielsen's usability principles you would consider, and how you would implement them.

Scenario chosen:

◯ (a)

🔵 (b)

Write your answer here.

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I would apply th eusability principles by using error prevention. I would use error prevemtion to alert people when a laptop has already been reserved so that no laptops can be double booked to avoid conflict and overlap that leaves someone without a laptop. I would also use the usibility principle of aesthetics by keeping the interface design simple so that people can easily navagite the interface and easily understand what steps they must do to get the outcome thye want.

PART E – Real-world examples

(i) Compare the usability of BOTH real-world examples below in terms of usability heuristics. Video 1 and Video 2 below show the user setting up an account on two different websites. Discuss **at least two** usability principles in your answer.
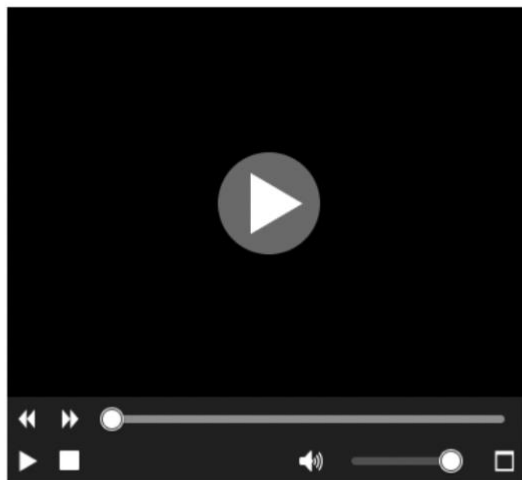
It is recommended that you view all videos below in 'full screen' mode, by clicking the screen icon in the bottom-right corner of the video window. To exit this mode, click the screen icon in the bottom-right corner of the enlarged screen window.

Video 1: Noku

Source: https://noku.co.nz
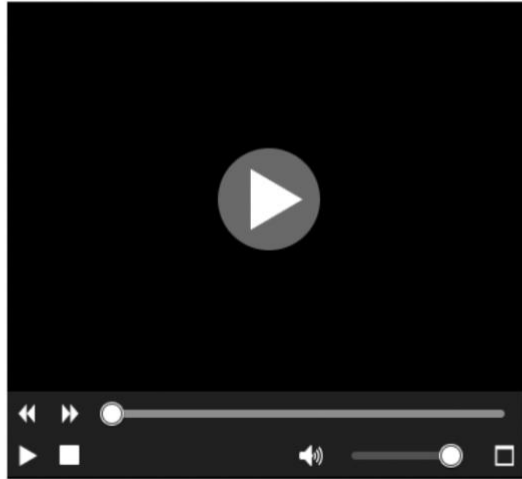
Video 2: Air New Zealand

Source: https://www.airnewzealand.co.nz

Write your answer here.

In video 1 they used the usability principle aesthetics and minimilast desgin, making he sugn up look really simple and feel really simple, whereas in video two, airnew zealands sign up page looks a lot more cluttered and could come off as confusing with the extra drop down boxes. In both videos we can see the usabilitiy concept extrenal consistency between the two, with their boxes and order of thequestions being very similar, this allows users to easily go through tthe sign up process because its the same as what they have done on many other websites before so the consistincey makesit easier.
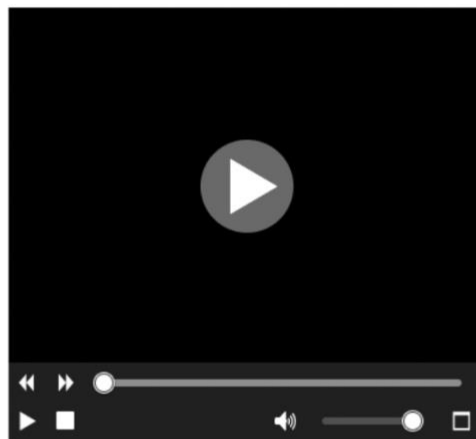
(ii) Compare the usability of BOTH real-world examples below in terms of usability heuristics. Video 3 and Video 4 below show the user adding and removing an item from a playlist on two different websites. Discuss **at least two** usability principles in your answer.

Video 3: Spotify

Source: https://www.spotify.com
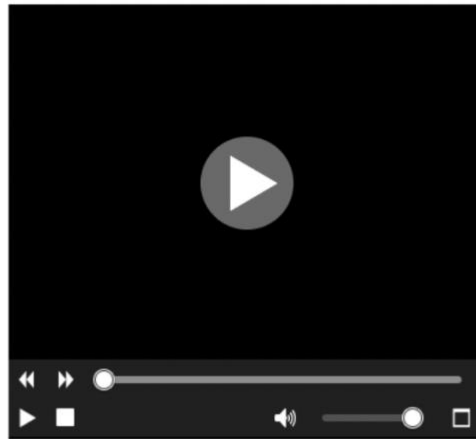
Video 4: Other playlist

Source: https://music.youtube.com

Write your answer here.

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In both video 3 and 4 the interfaces use recognition and recall with their search bars to recognise what someone is trying ot find. in video 3 they alsoused flexibility and efficeincy of use by making the steps to add songs to a playlist a lot simpler a less of them, whereas in video 4 we see a lot of steps and a lot of back and forth compared to video 3.

(iii) Suggest improvements for enhancing the usability of ONE interface from any of the four videos above. Justify your suggestions by referring to usability principles.

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They could improve youtube music (in video 4) by trying to give their users more freedom and control to make playlists in the way they would like to.

Achievement

Subject: Digital Technologies

Standard: 92006

Total score: 03

Task	Grade score	Marker commentary
One	A3	This candidate could describe their usability heuristics (UH) and has made correct references to UH throughout the paper. In some parts of the questions, they provided limited detail.
		The candidate continued to identify and describe UH, and made no further attempts to explain the use of heuristics, which limited the response to Achievement. Detailed explanations and examples would have allowed the candidate to move to the next grade.