

Heuristic Evaluation of the Dance 4 Healing Platform

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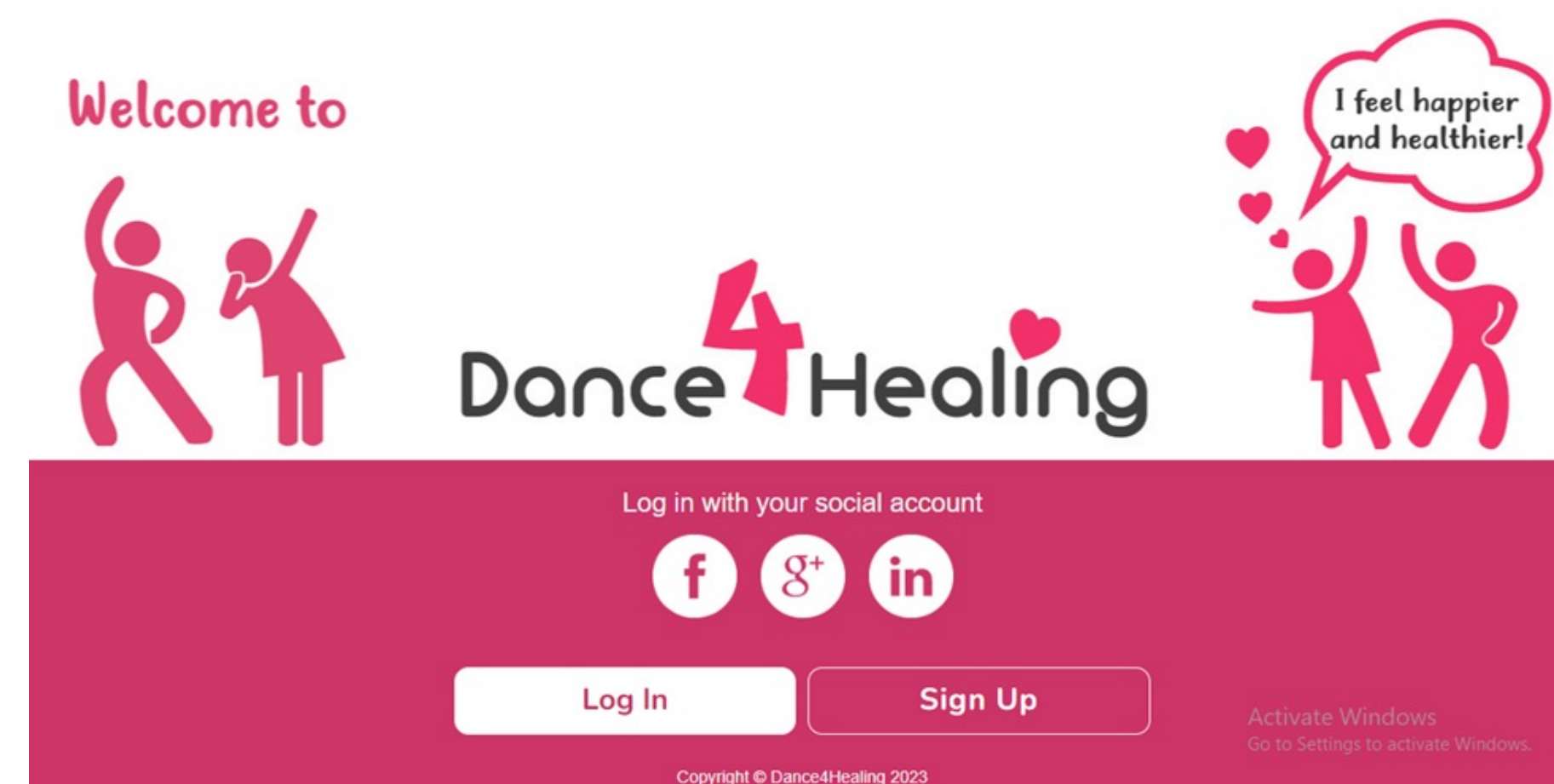
1. HITLAB Healthcare Innovation Technology



ABSTRACT

Current body of evidence shows that dance improves quality of life in diabetics and reduces cardiovascular deaths by 46%. Recent estimates show that 34.2 million Americans with Diabetes Mellitus cost \$327 billion in 2018; 68% of them will die from CVDs. Medical expenditure of patients diagnosed with diabetes is approximately 2.3 times higher as compared to other patients.

Dance4Healing is an innovative health and wellness platform that focuses on improving quality of life for those diagnosed with diabetes, cardiovascular diseases (CVDs) among other non-communicable diseases. It aims to provide dance as a form of exercise to mitigate progression of diabetes and use dance as an effective lifestyle recommendation to manage diabetes and CVDs. The idea for the D4H Platform developed after working with experts in the field to come up with an innovative, cost-effective intervention which will not only broaden the field of using dance as a form of exercise and health disparities but have an impact on improving health of this patient population.



OBJECTIVES

- Evaluate Dance4Healing's interface usability and functionality based on Jakob Nielsen's ten established heuristics
- Identify usability issues, functionality challenges and potential roadblocks in user interactions with the interface.

STUDY METHODOLOGY

Heuristic Evaluation:

- An independent researcher conducted the evaluation of the platform's usability using the perspective of three types of users.
 - 60 Year old, female, teacher, type 2 diabetes patient with high level of sedentariness.
 - 55 year old, male, construction foreman, newly diagnosed with type-2 pre-diabetes.
 - 32 year old, female, technical recruit, data obsessed type-1 diabetic.
- The evaluator analyzed the interface against Nielsen's heuristics on review of the design, layout, functionality, navigation, and content
- noting observed issues and their impact on usability and functionality.
- The evaluator noted the issues as observed and encountered, and their impact on usability and functionality of the platform.
- Issues and problems were categorized based on severity, frequency, and criticality, and ranked accordingly. Rankings were purely subjective.

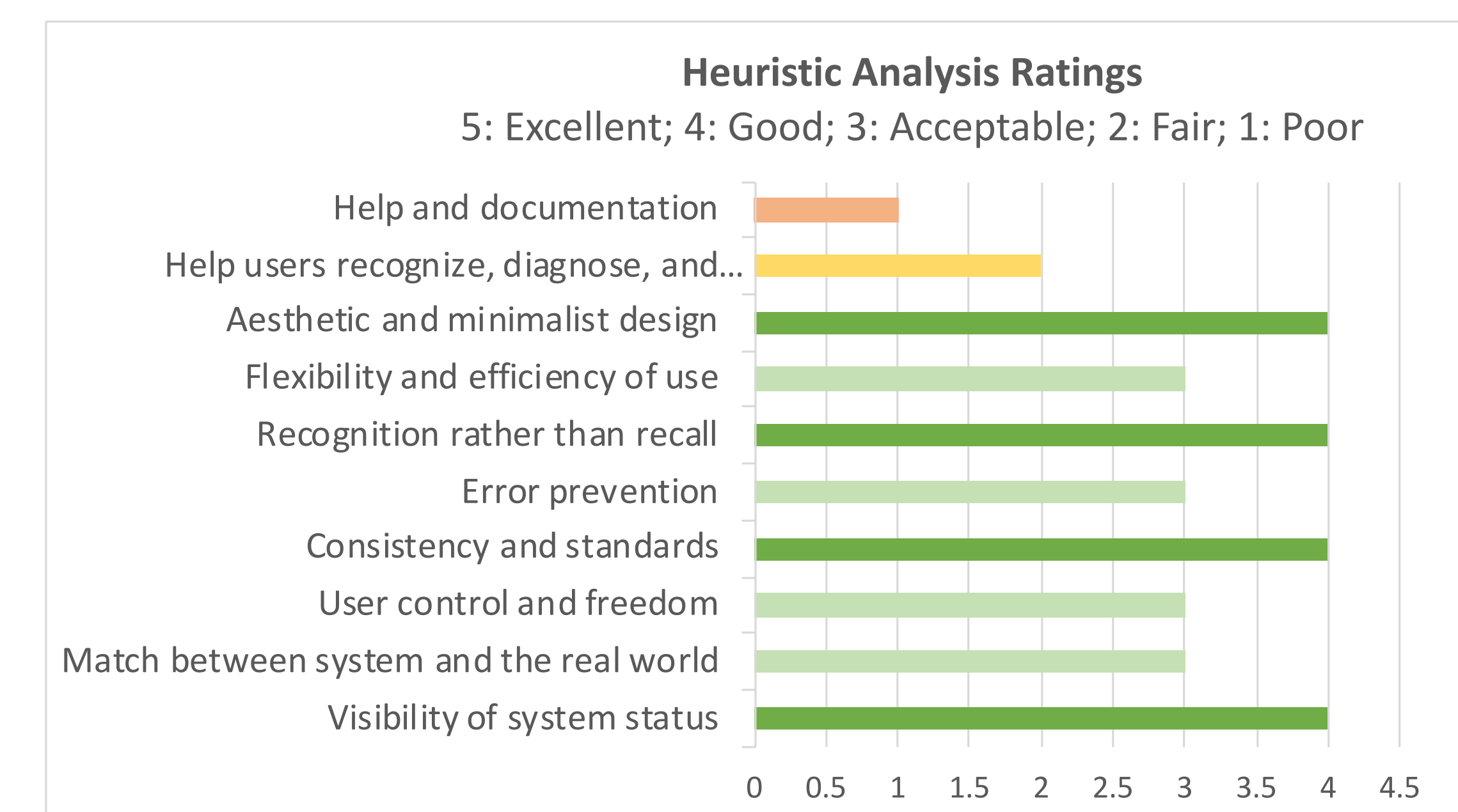
Expert Review Notes and Comments:

- The evaluator also assessed every single page that forms a part of typical user experience.
- For every page (web page), the evaluator provided specifics
 - Error encountered or if something did not work as assumed/intended.
 - Suggestions to improve the page's visibility and functionality
 - Raise questions to things that were not in the clear.

RESULTS

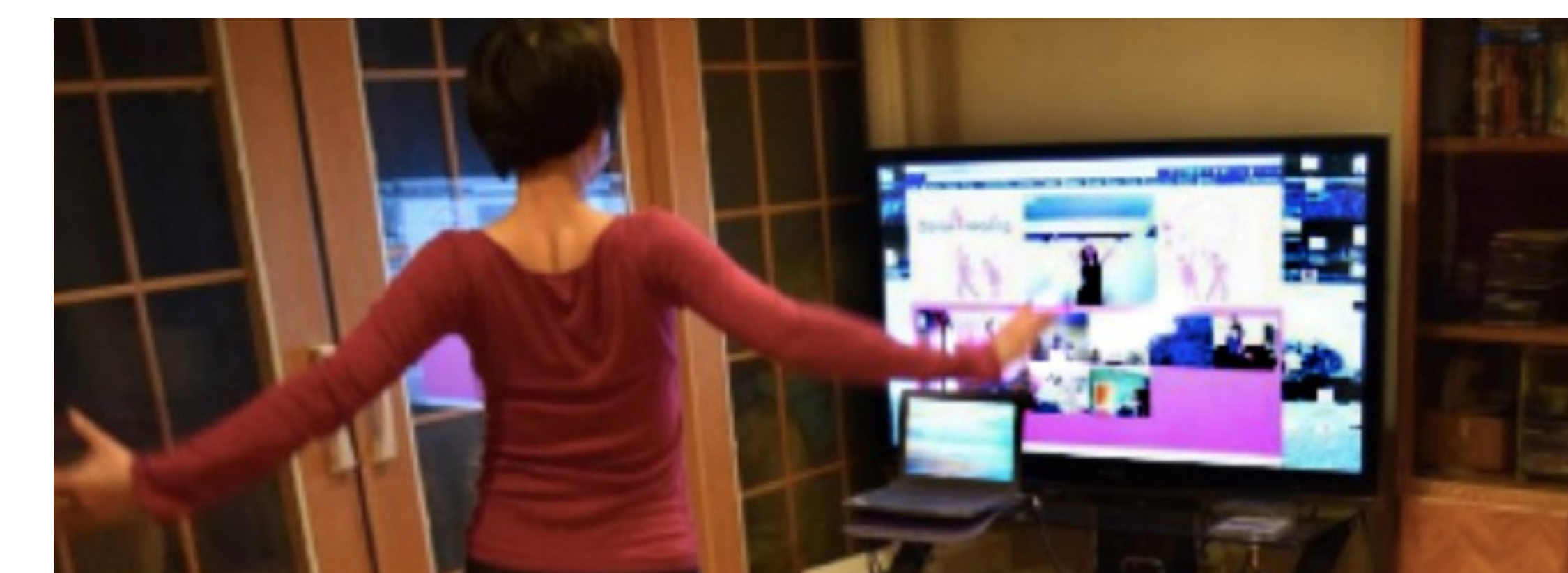
Heuristic Analysis Ratings

- Platform scored high on visibility of system status, consistency and standards, recognition rather than recall, aesthetic and minimalist design.
- Platform scored medium on Match between system and the real world, user control and freedom, error prevention, flexibility and efficiency of use.
- The help and documentation section or functionality is not yet integrated in the platform.



Brief Summary of Expert Review Notes

- The color scheme, appearance of pages, neat presentation is visibly appealing.
- The platform houses a variety of dance forms and workout videos.
- Importantly, the burden of decision making of what dance form to exercise on is not on the user.
- However, a user has the freedom to specify the duration and intensity of the exercise.
- Issues regarding the size of the dance video and full screen options were highlighted.
- Several questions were raised to sought clarity on the content and making the same available to a user.



RECOMMENDATIONS

There are three levels of impact:

- High** – may prevent the user from completing a task or accessing information
- Moderate** – might cause the user difficulty but the task could be completed
- Low** – minor problems that would not significantly affect task completion.

Recommendation	Level of Impact
Add a FAQ and Help Section to the home page. Can consider adding a short video tutorial that covers most of the sections in the Help page.	High
Increasing the size of the video where the dance plays out will be an important improvement.	High
The platform should add more videos to improve the variety of dance types and forms, so a user gets to have a new experience more frequently and is overall better engaged.	High
Currently, it is not possible for a user to select a work-out type such as Bollywood, Zumba etc. Essentially, the user should be able to select their workout type should they want to.	Medium
Work on the aspect on how the application will function for more than one buddy.	Medium

CONCLUSIONS

- Dance 4 Healing is a promising platform that allows a patient/user to undertake physical activity in the form of dance from the comfort of their homes (remotely).
- The platform is simple and minimalistic, which would be conducive to those not very tech-savvy.
- The platform does not add to the decision-making burden of the user by asking them to specify the dance form, or instructor or video they would want to use for their exercise.
- Although, a user should be provided with the option to select a video that they want to work out on but the idea that the platform picks out a video at random (using pre-specified inputs from the user on emotion, duration, and energy level) helps reduce the burden of choice for a user.
- This feature can be further enhanced with the inclusion of more videos to provide a variety of videos.
- The Live Video Sessions feature could not be tested as it is not available for review.

Jacob Nielsen's Heuristics

Heuristic Evaluation is a usability inspection method for computer software that helps to identify usability problems in the user interface design. It involves evaluators examining the interface and judging its compliance with recognized usability principles. Jakob Nielsen's (1994) general principles, or heuristics, for interaction design provided a basis for this evaluation, providing a helpful rubric from which to assess digital tools. The 10 heuristics are detailed below

Heuristic	Description
Visibility of system status	The system should always keep users informed about what is going on, through appropriate feedback within a reasonable time.
Match between system and the real world	The system should speak the users' language, with words, phrases and concepts familiar to the user, rather than system-oriented terms. Follow real-world conventions, making information appear in a natural and logical order.
User control and freedom	Users often choose system functions by mistake and will need a clearly marked "emergency exit" to leave the unwanted state without having to go through an extended dialogue. Support undo and redo.
Consistency and standards	Users should not have to wonder whether different words, situations, or actions mean the same thing.
Error prevention	Even better than good error messages are a careful design which prevents a problem from occurring in the first place. Either eliminate error-prone conditions or check for them and present users with a confirmation option before they commit to the action.

Heuristic	Description
Recognition rather than recall	Minimize the user's memory load by making objects, actions, and options visible. The user should not have to remember information from one part of the dialogue to another. Instructions for use of the system should be visible or easily retrievable whenever appropriate.
Flexibility and efficiency of use	Accelerators—unseen by the novice user—may often speed up the interaction for the expert user such that the system can cater to both inexperienced and experienced users. Allow users to tailor frequent actions.
Aesthetic and minimalist design	Dialogues should not contain information which is irrelevant or rarely needed. Every extra unit of information in a dialogue competes with the relevant units of information and diminishes their relative visibility.
Help users recognize, diagnose, and recover from errors	Error messages should be expressed in plain language (no codes), precisely indicate the problem, and constructively suggest a solution.
Help and documentation	Even though it is better if the system can be used without documentation, it may be necessary to provide help and documentation. Any such information should be easy to search for, focused on the user's task, list concrete steps to be carried out, and not be too large.

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