Usability Evaluation For Child Development Website Interface

Agustina Srirahayu[1*], Kurnia Dwi Radita[2]
Universitas Duta Bangsa Surakarta[1,2]
*Correspondence Email : agustina@udb.ac.id

ABSTRACT

This study aims to evaluate the usability of the child development website interface using the usability testing method. The evaluation was conducted by involving 20 participants consisting of parents and caregivers of children, who were asked to complete a series of tasks on the website. The assessment was carried out based on five main dimensions of usability: learnability, efficiency, memorability, errors, and satisfaction.

The results showed that the website had good learnability, with the majority of participants being able to understand the interface on first use. User satisfaction was also high, with an average score of 4 out of 5. However, some problems were found in terms of efficiency, especially related to navigation which sometimes required too many steps. In addition, the level of user error increased on more complex tasks, such as using child development aids, which required clearer instructions.

These findings provide recommendations for improving the usability of the website, including simplifying navigation, providing more comprehensive guidance, and improving feedback from the system. Implementation of these improvements is expected to increase the effectiveness of the website in helping parents monitor their child's development more efficiently.

KEYWORDS

usability, interface, child development website, usability testing, evaluation

INTRODUCTION

The development of information and communication technology has had a significant impact on various aspects of life, including in the fields of education and health. One of the increasingly developing applications of technology is a website that functions to support parents and professionals in monitoring and managing child development

(Pourasad, 2024). Child development websites are designed to provide important information about developmental stages, parenting tips, and tools to detect developmental problems in children early on (Griar, et al, 2013).

However, the success of using the website is highly dependent on its usability. A website that is easy to use will increase user involvement, especially parents, in understanding the information presented and using it to support their child's development (Maramba, et al, 2019). Therefore, evaluating the usability of the website interface is crucial to ensure that the site not only provides relevant information but is also easy for users to access and understand.

Currently, there are many child development websites available with various features and services. However, not all of these sites provide an optimal user experience. Based on various studies, common problems that users often face include difficulty in navigation, presentation of information that is too complex, and interface design that is less intuitive. These problems can reduce the quality of user interaction, so that the information provided by the website cannot be utilized optimally (Swaid, et al, 2018).

In the context of child development websites, interface usability becomes very important because the primary target users are parents, who often do not have a deep technological background (Cutler, et al, 2012). If the website interface is not user-friendly, it can hinder their access to important information related to child development. In addition, a website that is difficult to use can cause users to feel frustrated and switch to other sources of information, which may be less reliable or not in accordance with their needs.

Therefore, evaluating the usability of the interface of a child development website is an important step to improve the effectiveness and efficiency of the use of the site. This evaluation is expected to help identify the obstacles faced by users, as well as provide recommendations for improvements to improve the quality of services offered by the website. Thus, the evaluated website can be more optimal in supporting the role of parents in monitoring and managing child development (Ardhana, 2022).

To improve the user experience on a child development website, the most common solution used is usability evaluation. Usability evaluation refers to a series of methods to measure how easily users can learn, understand, and use a website efficiently and achieve their goals without difficulty (Wulandari, 2020). Usability testing identifies the obstacles that users may face, and finds ways to improve the efficiency, effectiveness, and satisfaction of users in using the website.

The main aspects of usability evaluation are:

1. Learnability: How quickly users can learn how to use the website when they first access it. For users of child development websites, such as parents, ease of understanding the layout and navigation is key to being able to immediately take advantage of the features provided.

2. Efficiency: How quickly users can complete their tasks once they learn how to use the website. A good website should facilitate users to find the information they need quickly and accurately, without having to go through complicated steps.

3. Memorability: How easy it is for users who have used the website before to return and use it again without having to re-learn. This is especially important for sites that are used regularly to monitor child development, as parents need to remember how to access and use the features.

4. Errors: How often users make errors when using the website, how serious the errors are, and how the website helps users fix them. A good website should be able to minimize user errors and provide clear instructions for resolving potential problems.

5. Satisfaction: How satisfied users are with the website. A user-friendly interface and intuitive design will increase user satisfaction, making them feel comfortable and encouraged to continue using the site.

By using usability evaluation, child development website providers can provide the following benefits:

1. Increased Effectiveness: Ensure that users can achieve their goals, such as finding information about child developmental stages or using assistive devices more efficiently.
2. Increased User Satisfaction: Satisfied users are more likely to use the website regularly, so the website can serve as a truly helpful tool in monitoring child development.
3. Reduced User Error: Evaluation will help identify areas where users frequently make errors, so that improvements can be made to minimize user frustration.
4. Improved Interface Design: Feedback from the evaluation can be used to improve the website design, making navigation more intuitive, and simplifying access to important information..

By focusing on usability evaluation, child development websites can be optimized to be more effective and efficient in serving users, especially parents who need information and tools to support their children's growth and development.

RESEARCH METHOD

This study uses the usability evaluation method to assess the usability of the child development website interface. This approach consists of several stages designed to identify obstacles faced by users and measure the effectiveness, efficiency, and satisfaction in using the website.

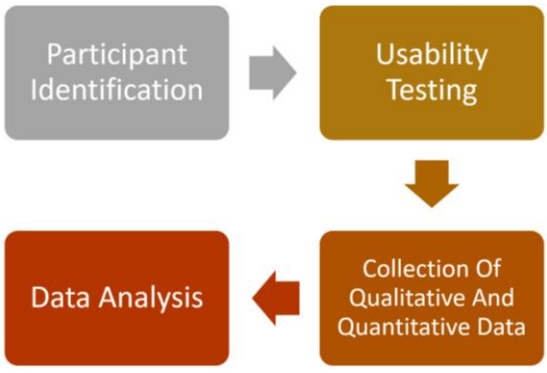

Figure 1. Research Method Evaluasi Usability

The first stage was participant identification. A total of 15-20 participants were selected purposively, consisting of parents or caregivers of children, as well as professionals in the field of child development. The selection of participants was based on their engagement with the child development website and their ability to provide relevant feedback regarding the usability of the interface.

The second stage was usability testing. Participants were asked to perform a series of common tasks on the website, such as searching for child development information, accessing the assistive features, or downloading parenting guides. During testing, data was collected through direct observation and screen recording to capture their interactions with the website interface.

The third stage is the collection of qualitative and quantitative data. Quantitative data is measured from the time required to complete the task, the number of errors made, and the level of task completion. While qualitative data is obtained from interviews and questionnaires that focus on user perceptions regarding ease of use, satisfaction, and recommendations for improvement.

The last stage is data analysis. Data is analyzed using descriptive methods to assess aspects of website usability based on five main dimensions of usability: learnability, efficiency, memorability, errors, and satisfaction. The results of this analysis are used to provide recommendations for improving the website interface (Salsabilla, 2024).

RESULT AND DISCUSSION

This study aims to evaluate the usability of the child development website interface through the usability method. From the results of usability testing conducted on 20 participants, several important findings were found related to five main aspects of usability: learnability, efficiency, memorability, errors, and satisfaction. The criteria of the respondents are as follows. One must (1) have actively utilized the child development website for at least one year, (2) comprehend its primary features and functions, (3) be able to articulate one's thoughts and feelings, and (4) be open to taking part in research (Putri, Prwita, handika, Sudipa, & Santika, 2024).

1. Learnability

Most participants stated that the website was fairly easy to understand upon first use. On average, participants were able to complete basic tasks such as searching for child development information and using the assistive features in a relatively short time, around 3-5 minutes. However, some participants had difficulty understanding some of the technical terms used on the website, which may not be familiar to users with a non-technical background. This suggests that while learnability is good, there is a need to simplify the language or provide clearer definitions for certain features (Ibnurozi, 2020).

2. Efficiency

In terms of efficiency, the website is fairly effective. Participants were able to complete 85% of all tasks without assistance, and the average time to complete these tasks was in line with expectations. However, some features, such as searching for information based on a child's age, required more steps than expected, which may have reduced overall efficiency. For example, navigating to a specific page sometimes required two to three more clicks than on similar websites, increasing the time to complete tasks.

3. Memorability

Most participants who had used the site more than once indicated that they could easily remember how to operate the site after several uses. However, some new participants experienced confusion when trying to return to more specific features, such as the child development assessment tool (Ariansidi, 2023). This suggests that while basic features are easy to remember, more complex or specialized features require more intuitive navigation design in order to be accessed again without difficulty.

4. Errors

The level of errors that occurred during testing varied depending on the complexity of the task. For simple tasks, such as accessing the home page or searching for child development information, the errors made were very minimal (Ernawati, et al, 2023). However, in more complex tasks, such as using the child growth calculator, several participants made errors in entering data or understanding instructions. This error rate indicates the need for improvements to the instructions presented and increased feedback from the system when users make errors.

5. Satisfaction

In general, user satisfaction is quite high. From the questionnaire given, the average satisfaction score is on a scale of 4 out of 5. Most participants felt that the site interface was quite user-friendly and the features provided were very helpful in monitoring child development. However, there were several suggestions for improvement, such as adding tutorials or initial guides for new users, as well as increasing the speed of access to several features that sometimes took longer to load (Shafwanto, et al, 2023).

The following is a list of questions submitted to respondents.

Table 1. Usability Question

No	Question
1	I believe that the child development website's features have satisfied my needs
2	I don't require any extra assistance when utilizing the child development website
3	The child development website, in my opinion, offers uniformity in both style and functionality
4	I believe that the kid development website's operations and transaction processes function flawlessly
5	I can accomplish my everyday activities more effectively thanks to the options on the child development website
6	The child development webpage seems unclear or inconsistent in a number of places, in my opinion

No	Question
7	The responsiveness and speed of the child development website, in my opinion, need to be improved
8	The website for child development, in my opinion, is visually appealing and simple to usenota nya 100rb
9	It just took me a little while to use the child development website to comprehend
10	I need to get used to it first before I feel that there are some features in child development website that are not suitable for my tasks or needs

The results of this study indicate that the child development website has a fairly good level of usability, but there is still room for improvement. Learnability and satisfaction are at a satisfactory level, indicating that the site is quite easy to understand and provides high satisfaction for users. However, the efficiency and errors aspects still need more attention. Efficiency can be improved by simplifying the navigation process, while user errors can be reduced by providing clearer instructions and more responsive feedback when users make mistakes.

In addition, although most of the basic features are quite easy to access and remember, there is a need to make it easier to access more complex features, especially for users who may rarely use these features. This is important to ensure that users are not only satisfied when they first use the site, but are also able to use the site continuously without experiencing significant obstacles.

CONCLUSION

This study evaluates the usability of the child development website interface through the usability testing method. The results of the study indicate that in general, this website has a fairly good level of usability, especially in terms of learnability and satisfaction. Users find this site relatively easy to understand and are satisfied with the functionality provided. However, there are several aspects that need to be improved, especially related to efficiency, memorability, and errors.

It was found that the navigation process on some features still requires too many steps, which can reduce user efficiency in completing tasks. In addition, some more complex features require a more intuitive interface design so that users can remember how to use them more easily. The level of user errors can also be reduced by providing clearer instructions and more responsive feedback when errors occur.

Based on these findings, it is recommended to simplify navigation, increase access speed, and provide a more comprehensive user guide. The implementation of these recommendations is expected to improve the overall usability of the website, so that it can better support parents in monitoring and managing their child's development effectively.

REFERENCES

Ardhana VY. Analisis Usability Testing pada SITIDES Menggunakan System Usability Scale dan PIECES Framework. Bulletin of Informatics and Data Science. 2022 Nov 29;1(2):89-97.

Ariansidi M, Candiasa IM, Sunarya IM. Analisis Usability Pada Sistem Informasi LAPORBUP Menggunakan Performance Measurement, Retrospective Think Aloud dan User Experience Questionnaire. KLIK: Kajian Ilmiah Informatika dan Komputer. 2023 Jun 24;3(6):754-64.

Cutler DW, Rasmussen TJ. Usability testing and workflow analysis of the TRADOC data visualization tool (Doctoral dissertation, Monterey, California. Naval Postgraduate School).

Ernawati S, Anwariningsih SH, Musslifah AR. Analisis Tingkat Usabilitas Aplikasi Kamus Istilah Psikologi Menggunakan Metode System Usability Scale. Tekinfo: Jurnal Ilmiah Teknik Industri dan Informasi. 2023 May 31;11(2):147-57.

Grier RA, Bangor A, Kortum P, Peres SC. The system usability scale: Beyond standard usability testing. InProceedings of the human factors and ergonomics society annual meeting 2013 Sep (Vol. 57, No. 1, pp. 187-191). Sage CA: Los Angeles, CA: SAGE Publications.

Ibnurozi AA, Santi R, Gunawan CE. Analisis Pengukuran Usability Pada Situs Badan Pusat Statistik Provinsi Sumatera Selatan Dengan Menggunakan Metode Webuse. Journal of Information Technology Ampera. 2020 Aug 1;1(2):119-32.

Maramba I, Chatterjee A, Newman C. Methods of usability testing in the development of eHealth applications: a scoping review. International journal of medical informatics. 2019 Jun 1;126:95-104.

Pourasad AE, Maalej W. Does GenAI Make Usability Testing Obsolete?. arXiv preprint arXiv:2411.00634. 2024 Nov 1.

Putri, R. M., Prwita, W. G., handika, I. S., Sudipa, I. I., & Santika, P. P. (2024, January). Evaluation of Accounting Information SystemUsing Usability Testing Method and System Usability Scale. Sinkron: Jurnal dan Peneltiain Teknik Informatika, 8(1), 32-43.

Salsabilla S, Adzani PI, Riyanto WT, Suryana Y, Perkasa RJ. Analisis Usability Testing Menggunakan Metode SUS (System Usability Scale) Terhadap Kepuasan Pengguna dalam Mengakses Website Tokopedia. El-Mujtama: Jurnal Pengabdian Masyarakat. 2024 May 28;4(3):1879-94.

Shafwanto H, Mayasari R, Jajuli M. Analisis User Experience Pada Website Informatika UNSIKA di Perangkat Mobile Menggunakan Metode Usability Testing. Innovative: Journal Of Social Science Research. 2023 Oct 5;3(5):338-50.

Swaid S, Maat M, Krishnan H, Ghoshal D, Ramakrishnan L. Usability heuristic evaluation of scientific data analysis and visualization tools. InAdvances in Usability and User Experience: Proceedings of the AHFE 2017 International Conference on Usability and User Experience, July 17-21, 2017, The Westin Bonaventure Hotel, Los Angeles, California, USA 8 2018 (pp. 471-482). Springer International Publishing.

Wulandari NA, Rohman S. ANALISIS USABILITY APLIKASI RSI WONOSOBO MENGGUNAKAN METODE SUS (SYSTEM USABILITY SCALLE). STORAGE: Jurnal Ilmiah Teknik dan Ilmu Komputer. 2022 Aug 31;1(3):20-5.