

DAFTAR PUSTAKA

- [1] Yabes. (2025) Laporan data perilaku pengguna perangkat mobile di indonesia. Hybrid.co.id. Accessed: 2025-02-09. [Online]. Available: <https://hybrid.co.id/post/data-perilaku-pengguna-perangkat-mobile-di-indonesia/>
- [2] A. D. Riyanto. (2021) Hootsuite (we are social): Indonesian digital report 2021. Hootsuite (We Are Social). Accessed: 2025-02-09. [Online]. Available: <https://andi.link/hootsuite-we-are-social-indonesian-digital-report-2021/>
- [3] P. D. E. dan Bisnis Indonesia. (2025) Pengguna smartphone diperkirakan mencapai 89% populasi pada 2025: Databoks. Accessed: 2025-02-09. [Online]. Available: <https://databoks.katadata.co.id/teknologi-telekomunikasi/statistik/bdbf32de49a325c/pengguna-smartphone-diperkirakan-mencapai-89-populasi-pada-2025>
- [4] Y. T. Arumoadi, W. L. Y.S., and T. Susyanto, "Optimasi kinerja mobile website dengan teknik front-end optimization pada toko online imperial parfum," *Jurnal TIKomSiN*, vol. 2, 2014.
- [5] H. Y. Abuaddous, A. M. Saleh, O. Enaizan, F. M. Ghabban, and A. B. Al-Badareen, "Automated user experience (ux) testing for mobile application: Strengths and limitations," *International Journal of Interactive Mobile Technologies (IJIM)*, vol. 16, no. 04, pp. 30–45, Feb 2022.
- [6] R. Budiu, "Mobile user experience: Limitations and strengths," <https://www.nngroup.com/articles/mobile-ux/>, 2025, accessed: Feb. 08, 2025.
- [7] M. A. Razzak, M. N. Islam, T. Broti, E. S. Kamal, and S. Zahan, "Exploring usability problems of mhealth applications developed for cervical cancer: An empirical study," *SAGE Open Medicine*, vol. 11, Jan 2023.
- [8] A. Al-Hunaiyyan, R. Alhajri, B. Alghannam, and A. Al-Shaher, "Student information system: Investigating user experience (ux)," *International Journal of Advanced Computer Science and Applications*, vol. 12, no. 2, 2021. [Online]. Available: <http://dx.doi.org/10.14569/IJACSA.2021.0120210>
- [9] O. D. Alao, E. A. Priscilla, R. C. Amanze, S. O. Kuyoro, and A. O. Adebayo, "User-centered/user experience (uc/ux) design thinking approach for designing a university information management system," *Ing. Syst. D Inf.*, vol. 27, no. 4, pp. 577–590, aug 2022.
- [10] I. Darmawan, M. Saiful Anwar, A. Rahmatulloh, and H. Sulastri, "Design thinking approach for user interface design and user experience on campus academic information systems," *JOIV Int. J. Inform. Vis.*, vol. 6, no. 2, p. 327, jun 2022.
- [11] L. Setiyani and E. Tjandra, "Ui/ux design model for student complaint handling application using design thinking method (case study: Stmik rosma karawang)," *International Journal of Science, Technology & Management*, vol. 3, no. 3, pp. 690–702, may 2022.

- [12] H. Ilham, B. Wijayanto, and S. P. Rahayu, "Analysis and design of user interface/user experience with the design thinking method in the academic information system of jenderal soedirman university," *J. Tek. Inform. (JUTIF)*, vol. 2, no. 1, pp. 17–26, jan 2021.
- [13] D. Saputra and R. Kania, "Designing user interface of a mobile learning application by using a design thinking approach: A case study on uni course," *Journal of Marketing Innovation (JMI)*, vol. 2, no. 2, sep 2022.
- [14] K. C. Brata and A. H. Brata, "User experience improvement of japanese language mobile learning application through mental model and a/b testing," *Int. J. Electr. Comput. Eng. (IJECE)*, vol. 10, no. 3, p. 2659, jun 2020.
- [15] W. Techataweewan, "User-centered design of mobile application model for academic library services," in *Lecture Notes in Computer Science*, ser. Lecture notes in computer science. Cham: Springer International Publishing, 2019, pp. 252–260.
- [16] D. R. Alamsyah, M. G. Resmi, and I. Jaelani, "Design ui/ux e-learning english mobile using user centered design (ucd) method," *SinkrOn*, vol. 8, no. 4, pp. 2434–2443, oct 2023.
- [17] N. Hiu and Y. Erlyana, "Redesigning user interface of datascripmall mobile apps using user centered design method," *Teknika*, vol. 13, no. 2, pp. 283–292, jul 2024.
- [18] B. Zaman, I. B. Nayottami, and E. Hariyanti, "Evaluasi dan desain ulang antar-muka menggunakan metode user centered design (ucd) pada aplikasi kampus kita tendik," *Jicon*, vol. 12, no. 1, pp. 91–101, apr 2024.
- [19] D. Rahma Fahriyah, D. Ikasari, and Widiastuti, "Implementasi re-design application mobile mrt jakarta menggunakan metode user centered design," *J. Appl. Comput. Sci. Technol.*, vol. 5, no. 1, pp. 98–108, jun 2024.
- [20] A. Berni and Y. Borgianni, "From the definition of user experience to a framework to classify its applications in design," *Proceedings of the Design Society*, vol. 1, pp. 1627–1636, 2021.
- [21] W. Knight, W. Knight, and Corrigan, *UX for Developers*. Springer, 2019.
- [22] W. T. Nakamura, E. C. de Oliveira, E. H. de Oliveira, D. Redmiles, and T. Conte, "What factors affect the ux in mobile apps? a systematic mapping study on the analysis of app store reviews," *Journal of Systems and Software*, vol. 193, p. 111462, 2022.
- [23] B. Richardson, M. Campbell-Yeo, and M. Smit, "Mobile application user experience checklist: a tool to assess attention to core ux principles," *International Journal of Human–Computer Interaction*, vol. 37, no. 13, pp. 1283–1290, 2021.
- [24] M. Hardy-Linna, "Collecting user feedback for an mvp in agriculture–case: Smart ag volume tractors, agco," 2022.
- [25] Z. A. Nasruddin, N. H. M. Ariffin, N. M. Norwawi, R. Ismail, A. Wati, Z. Abidin, and F. Nor, "Evaluating user experience (ux) factors and emotions of open distance learning (odl) during the pandemic covid-19 among secondary school students," *Int. J. Inf. Educ. Technol*, vol. 12, pp. 1374–1380, 2022.

- [26] A. Vasileva, "User-centered based application concept development and evaluation," 2022.
- [27] G. Mathew, "The absolute basics of website UX," <https://hackernoon.com/how-to-improve-the-ux-of-your-site-451h738m7>, Oct. 2019, accessed: 2024-8-28.
- [28] A. Dirin, M. Nieminen, and T. H. Laine, "Feelings of being for mobile user experience design," *International Journal of Human-Computer Interaction*, vol. 39, no. 20, pp. 4059–4079, 2023.
- [29] A. Borriraklert and S. Kiattisin, "User experience design (uxd) competency model: Identifying well-rounded proficiency for user experience designers in the digital age," *Archives of Design Research*, vol. 34, no. 3, pp. 61–79, 2021.
- [30] Q. M. Ilyas, M. Ahmad, N. Zaman, M. A. Alshamari, and I. Ahmed, "Localized text-free user interfaces," *IEEE Access*, vol. 10, pp. 2357–2371, 2021.
- [31] J. Ruiz, E. Serral, and M. Snoeck, "Unifying functional user interface design principles," *International Journal of Human-Computer Interaction*, vol. 37, no. 1, pp. 47–67, 2021.
- [32] L. M. Hasani, D. I. Sensuse, R. R. Suryono *et al.*, "User-centered design of e-learning user interfaces: A survey of the practices," in *2020 3rd International Conference on Computer and Informatics Engineering (IC2IE)*. IEEE, 2020, pp. 1–7.
- [33] D. Saputra and R. Kania, "Designing user interface of a mobile learning application by using a design thinking approach: A case study on uni couse," *Journal of Marketing Innovation (JMI)*, vol. 2, no. 2, 2022.
- [34] M. M. Lashin and A. P. D. W. M. Helmy, "Features of new design principles for mobile applications ui/ux for smartphones," *Journal of Architecture, Arts, and Humanistic Sciences*, vol. 6, no. 25, pp. 480–491, 2021.
- [35] J. Pinchot, "User experience (ux) design concepts for mobile app development courses..." *Issues in Information Systems*, vol. 21, no. 4, 2020.
- [36] R. Kutelmakh, "Ux-pyramid method for ux-design of mobile apps," in *SWorld-Ger Conference proceedings*, no. gec27-01, 2023, pp. 19–23.
- [37] M. Sandesara, U. Bodkhe, S. Tanwar, M. D. Alshehri, R. Sharma, B.-C. Neagu, G. Grigoras, and M. S. Raboaca, "Design and experience of mobile applications: a pilot survey," *Mathematics*, vol. 10, no. 14, p. 2380, 2022.
- [38] D. Teplov, "Development of a mobile online banking ux/ui prototype," 2019.
- [39] T. Heikinmäki, "Principles of ux design: How to implement user experience in a design process," 2020.
- [40] "UX daily: The world's largest open-source UX design library," <https://www.interactiondesign.org/literature/article/shneiderman-s-eight-golden-rules-will-help-you-design-betterinterfaces>, accessed: 2024-8-28.

- [41] A. Margot, "Cognitive psychology in ux design: Minimising the cognitive load," *Design Signals*, 2019.
- [42] J. Nielsen, "10 usability heuristics for user interface design," <https://www.nngroup.com/articles/ten-usability-heuristics/>, 11 2020, accessed: 2021-12-15.
- [43] T. Inc, *Application Program*, 2019.
- [44] B. Ramdurai, "A study on mobile apps in the healthcare industry," *SSRG International Journal of Mobile Computing and Application*, vol. 8, no. 1, pp. 17–21, 2021.
- [45] A. Patidar and U. Suman, "Towards analyzing mobile app characteristics for mobile software development," in *2021 8th International Conference on Computing for Sustainable Global Development (INDIACom)*. IEEE, 2021, pp. 786–790.
- [46] B. Dinara, "Smart wardrobe-mobile app," *The Bulletin of Kazakh Academy of Transport and Communications nam*, vol. 119, no. 4, pp. 108–113, 2021.
- [47] G. A. Walikar, "Mobile applications used for human rights: A review," *Mobile Devices and Smart Gadgets in Human Rights*, pp. 171–182, 2019.
- [48] A. Ahmad, A. W. Malik, A. Alreshidi, W. Khan, and M. Sajjad, "Adaptive security for self-protection of mobile computing devices," *Mobile Networks and Applications*, vol. 28, no. 2, pp. 653–672, 2023.
- [49] M. V. M. Size, "Share & trends analysis report," URL: <https://www.grandviewresearch.com/industry-analysis/automated-guided-vehicle-agv-market>, 2020.
- [50] <https://www.statista.com/statistics/>, accessed: 2021-5-25.
- [51] P. Theodorou, K. Tsiligkos, A. Meliones, and C. Filios, "An extended usability and ux evaluation of a mobile application for the navigation of individuals with blindness and visual impairments outdoors—an evaluation framework based on training," *Sensors*, vol. 22, no. 12, p. 4538, 2022.
- [52] K. Bineeth, "Tools and technologies for blind and visually impaired navigation support," *A Review. IETE Technical Review*, p. 1, 2020.
- [53] M. M. Islam, M. S. Sadi, K. Z. Zamli, and M. M. Ahmed, "Developing walking assistants for visually impaired people: A review," *IEEE Sensors Journal*, vol. 19, no. 8, pp. 2814–2828, 2019.
- [54] R. Barbu, "User experience: beyond decoration and usability," in *Human Systems Engineering and Design (IHSED2021) Future Trends and Applications*. AHFE International, 2021.
- [55] J. M. Ferreira, S. T. Acuña, O. Dieste, S. Vegas, A. Santos, F. Rodríguez, and N. Juristo, "Impact of usability mechanisms: An experiment on efficiency, effectiveness and user satisfaction," *Information and Software Technology*, vol. 117, p. 106195, 2020.
- [56] P. Häkkinen, "Ux metrics—measuring the success of usability and user experience in laboratory automation product development," 2020.

- [57] T. Nikolaos, V. Georgios, and K. Georgios, "Haptics-tactile internet in human computer interaction," in *Proceedings of the 2023 6th World Symposium on Communication Engineering (WSCE 2023)*, 2023.
- [58] A. Berni and Y. Borgianni, "Making order in user experience research to support its application in design and beyond," *Applied Sciences*, vol. 11, no. 15, p. 6981, 2021.
- [59] A. Inan Nur, H. B. Santoso, and P. O. Hadi Putra, "The method and metric of user experience evaluation: a systematic literature review," in *Proceedings of the 2021 10th International Conference on Software and Computer Applications*, 2021, pp. 307–317.
- [60] N.-H. Kim, "User experience validation using the honeycomb model in the requirements development stage," *International journal of advanced smart convergence*, vol. 9, no. 3, pp. 227–231, 2020.
- [61] F. Kanji, "Ux research & testing techniques," *vol*, vol. 44, pp. 0–21, 2021.
- [62] G. Salvendy and W. Karwowski, *Handbook of human factors and ergonomics*. John Wiley & Sons, 2021.
- [63] R. Ghaniyyah, B. T. Hanggara, and B. S. Prakoso, "Perancangan user experience aplikasi mobile platform bagikata menggunakan metode goal-directed design (gdd)," *Jurnal Pengembangan Teknologi Informasi dan Ilmu Komputer*, vol. 6, no. 1, pp. 482–492, 2022.
- [64] M. Schrepp, J. Kollmorgen, and J. Thomaschewski, "A comparison of sus, umux-lite, and ueq-s," *Journal of User Experience*, vol. 18, no. 2, 2023.
- [65] S. Meyer, *The 7 most important UX KPIs and how to measure them*, 2019.
- [66] K. KHADIJAH, "Studi perbandingan metodologi ui/ux (studi kasus: Prototype aplikasi pdbi academic information system)," *KNOWLEDGE: Jurnal Inovasi Hasil Penelitian dan Pengembangan*, vol. 2, no. 4, pp. 292–301, 2022.
- [67] R. Murillo, "Bridging digital ux design methodics and non-digital user needs for a better urban fishing experience," 2021.
- [68] <http://www.interaction-design.org/ebook>, accessed: 2020-8-6.
- [69] J. Ball, "The double diamond: A universally accepted depiction of the design process," *Design Council*, vol. 1, 2019.
- [70] G. Allanwood and P. Beare, *User experience design: a practical introduction*. Bloomsbury Publishing, 2019.
- [71] A. Triayudi, A. Rubhasy *et al.*, "Penerapan metode design thinking dalam rancang aplikasi penanganan laporan pencurian barang berharga di polsek sukrajaya," *Jl-PI (Jurnal Ilmiah Penelitian dan Pembelajaran Informatika)*, vol. 6, no. 2, pp. 267–276, 2021.

- [72] M. A. Prasetyo, M. C. Rozikin, R. S. Dewi, U. Internasional, and S. Indonesia, “Perancangan user interface (ui) & user experience (ux) aplikasi pencari kost abc di kota xyz menggunakan metode design thinking,” *Aisyah J. Informatics Electr. Eng*, vol. 3, no. 1, pp. 36–44, 2021.
- [73] S. O. Johnsen and T. Porathe, *Sensemaking in safety critical and complex situations: human factors and design*. Taylor & Francis, 2021.
- [74] I. Standardization, “Ergonomics of human-system interaction,” *Human-centred design for interactive systems*. ISO, 2019.
- [75] “What is user centered design (UCD)? — updated 2024,” <https://www.interaction-design.org/literature/topics/user-centered-design>, Jun. 2016, accessed: 2024-8-28.
- [76] R. J. Pinem, Y. Luqman, D. Lituhayu, N. Marlina, and S. Paramasatya, “The challenges in the implementation of university’s tri dharma during the covid-19 pandemic,” *PSYCHOLOGY AND EDUCATION*, vol. 57, no. 8, pp. 370–374, 2020.
- [77] H. Farid, “Digital image forensics,” *Scientific American*, vol. 300, no. 6, pp. 66–71, 2009.
- [78] OWASP. (2023) Authentication cheat sheet. OWASP Foundation. [Online]. Available: <https://owasp.org>
- [79] M. M’Raihi, D. Machani, M. Pei, and J. Rydell, “TOTP: Time-Based One-Time Password Algorithm,” RFC 6238, May 2011, <https://doi.org/10.17487/RFC6238>.
- [80] P. A. Grassi, M. E. Garcia, and J. L. Fenton, “Digital Identity Guidelines,” National Institute of Standards and Technology, NIST Special Publication 800-63-3, Jun. 2017, <https://doi.org/10.6028/NIST.SP.800-63-3>.
- [81] Google Developers. (2022) Geolocation API. Accessed: 2025-04-25. [Online]. Available: <https://developers.google.com/maps/documentation/geolocation/overview>
- [82] A. Susanti, R. A. Soemitro, H. Suprayitno, and V. Ratnasari, “Searching the appropriate minimum sample size calculation method for commuter train passenger travel behavior survey,” *Journal of Infrastructure & Facility Asset Management*, vol. 1, no. 1, Mar. 2019.
- [83] Kemdikbud, “Universitas gadjah mada,” accessed: 2025-01-08. [Online]. Available: <https://pemutu.kemdikbud.go.id/affiliations/metrics/001001>
- [84] A. Hinze, N. Vanderschantz, C. Timpany, S. J. Cunningham, S.-J. Saravani, and C. Wilkinson, “A study of mobile app use for teaching and research in higher education,” *Technology, Knowledge and Learning*, vol. 28, pp. 1271–1299, 2023, accepted: 10 March 2022 / Published online: 5 June 2022. [Online]. Available: <https://doi.org/10.1007/s10758-022-09599-6>
- [85] K. Moran. (2022) Why and how to include demographics in ux research. Nielsen Norman Group. Accessed: May 5, 2025. [Online]. Available: <https://www.nngroup.com/articles/demographics-in-ux/>

- [86] Utah State University Institutional Review Board, "Inclusive demographics: A guide to asking inclusive demographic questions," <https://research.usu.edu/irb/files/InclusiveDemographics.pdf>, 2021, accessed: May 5, 2025.
- [87] S. K. Park, M. C. Purnell, M. K. Freeman, R. V. Reese, and S. Varga, "Preference and frequency of mobile phone app use for drug information among student pharmacists," *Journal of Pharmacy Technology*, vol. 33, no. 3, pp. 87–95, 2017. [Online]. Available: <https://doi.org/10.1177/8755122517698164>
- [88] A. Wenz and F. Keusch, "The second-level smartphone divide: A typology of smartphone use based on frequency of use, skills, and types of activities," *Mobile Media & Communication*, vol. 11, no. 3, pp. 459–483, 2023. [Online]. Available: <https://doi.org/10.1177/20501579221140761>
- [89] V. Kalloo and P. Mohan, "Correlating questionnaire data with actual usage data in a mobile learning study for high school mathematics," in *Proceedings of the IADIS Mobile Learning Conference*. Berlin, Germany: IADIS, 2012, the University of the West Indies, St Augustine, Trinidad and Tobago. [Online]. Available: <https://www.researchgate.net/publication/283716125>
- [90] A. Acala and H. Talirongan, "Assessing user satisfaction and usability of a university portal: A quantitative study utilizing the computer system usability questionnaire (csuq)," *Zenodo*, October 2023. [Online]. Available: <https://www.researchgate.net/publication/374700125>
- [91] J. P. Chin, V. A. Diehl, and K. L. Norman, "Development of a tool measuring user satisfaction of the human-computer interface," *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, pp. 213–218, 1988. [Online]. Available: <https://www.researchgate.net/publication/245911402>
- [92] C. Fan and J. Wang, "Development and validation of a questionnaire to measure digital skills of chinese undergraduates," *Sustainability*, vol. 14, no. 6, p. 3539, 2022. [Online]. Available: <https://doi.org/10.3390/su14063539>
- [93] L. Einfeldt and A. Degbelo, "User interface factors of mobile ux: A study with an incident reporting application," in *Proceedings of the 16th International Joint Conference on Computer Vision, Imaging and Computer Graphics Theory and Applications (VISIGRAPP 2021) - Volume 2: HUCAPP*, INSTICC. SciTePress, 2021, pp. 245–254. [Online]. Available: <https://www.scitepress.org/PublishedPapers/2021/103253/>
- [94] J. Nielsen, "Card sorting: How many users to test," 2004, retrieved from <https://www.nngroup.com/articles/card-sorting-how-many-users-to-test/>.
- [95] C. Tobias and E. Sanford, "Card sort usability test: Summary and recommendations," MSU Libraries, March 2014, web Services/Usability Team, MSU Libraries. [Online]. Available: <https://lib.msu.edu>
- [96] T. Tullis and L. Wood, "How many users are enough for a card-sorting study?" in *Usability Professionals Association (UPA) 2004 Conference*. Minneapolis, Minnesota: Usability Professionals Association (UPA), June 2004. [Online]. Available: <mailto:tom.tullis@fmr.com>; <mailto:WoodL@byu.edu>

- [97] E. Lantz, J. Keeley, M. Roberts *et al.*, “Card sorting data collection methodology: How many participants is most efficient?” *Journal of Classification*, vol. 36, no. 3, pp. 649–658, 2019.
- [98] D. M. Schrepp, *User Experience Questionnaire Handbook: All You Need to Know to Apply the UEQ Successfully in Your Projects*, unpublished manuscript.
- [99] J. Nielsen and T. K. Landauer, “A mathematical model of the finding of usability problems,” in *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '93)*. ACM, 1993, pp. 206–213.
- [100] C. Perfetti and L. Landesman, “Eight is not enough,” 2002, retrieved April 14, 2003, from http://world.std.com/~uieweb/Articles/eight_is_not_enough.htm.
- [101] J. R. Lewis and J. Sauro, “Usability and user experience: Design and evaluation,” in *Handbook of Human Factors and Ergonomics*. Wiley, Aug. 2021, pp. 972–1015.
- [102] R. Alroobaea and P. J. Mayhew, “How many participants are really enough for usability studies?” in *2014 Science and Information Conference*. IEEE, Aug. 2014.
- [103] L. Faulkner, “Beyond the five-user assumption: Benefits of increased sample sizes in usability testing,” *Behavior Research Methods, Instruments, & Computers*, vol. 35, no. 3, pp. 379–383, Aug. 2003.
- [104] A. Ciptarianto, “Ux research — whatsapp preference testing,” *Medium*, Sep 2020. [Online]. Available: <https://augi-ciptarianto.medium.com/ux-research-whatsapp-preference-testing-71308159b9e2>
- [105] Ítalo Fernandes, S. Rocha, C. Portela, G. B. Junior, J. Almeida, A. Silva, D. Viana, J. Rabelo, A. Paiva, and L. Rivero, “Defining an a/b testing process for usability and user experience evaluation through the analysis of the results of a literature review,” in *HCI International 2022 - Late Breaking Papers. Design, User Experience and Interaction*, ser. Lecture Notes in Computer Science, M. Kurosu, Ed., vol. 13516. Springer, 2022, pp. 204–213. [Online]. Available: https://doi.org/10.1007/978-3-031-17615-9_14