



UNIVERSITAS
INDONESIA
Veritas, Probitas, Iustitia | Est. 1849

ANTARMUKA

Sistem Interaksi Gasal 2024/2025

Syifa Nurhayati, M.Kom.

ACKNOWLEDGEMENT

“

Salindia ini disusun berdasarkan materi pada buku

INTERACTION DESIGN: beyond human-computer interaction

edisi ke-5

yang ditulis oleh Preece, J., Sharp, H., & Rogers, Y.

Kontributor salindia:

Harry B. Santoso, PhD

Bintang Annisa Bagustari, M.Kom.

Dadan Hardianto, M.Kom.

Lia Sadita, M.Kom.

Lintang Matahari Hasani, M. Kom.

Suci Fadhilah, M.A.



HAL YANG AKAN DIPELAJARI

- UI (User Interface), Usability, dan UX (User Experience)
- Shneiderman's Eight Golden Rules of Interface Design
- Bentuk-bentuk Antarmuka
- Penelitian Terkini
- Referensi dan Jurnal Terkait



PENGANTAR



UI, USABILITY & UX

USER INTERFACE

Submit

— VS —

Submit

“

Function : It **works**

USABILITY

Submit

Cancel

— VS —

Submit

Cancel

“

Function : It **works well**

USER EXPERIENCE

Yes, complete my order

No, Thanks

Bonus :

Order arrives earlier than promised

“

Function : It **works well**
and **makes me say WOW !**

USABILITY & UX



USABILITY

“

Can the users **accomplish** their goals ?

In the case of our camera shopper, from the perspective of the site's design, she did accomplish the goal, being very satisfied with the result.

VS



USER EXPERIENCE

“

Did the user have as **delightful** an **experience** as possible ?

The store portion of the experience canceled out the online portion.

USER CENTERED VS ‘DESIGNER CENTERED’ DESIGN



User

VS



User Interface Designer



BAGAIMANA CARA MEMINIMALKAN GAP-NYA ?

SHNEIDERMAN'S REQUIREMENTS

FUNCTIONAL REQUIREMENTS

NON FUNCTIONAL REQUIREMENTS



SHNEIDERMAN'S REQUIREMENTS

FUNCTIONAL REQUIREMENTS

NON FUNCTIONAL REQUIREMENTS

INTERACTION REQUIREMENTS



SHNEIDERMAN'S EIGHT GOLDEN RULES

Shneiderman dan Plaisant (2005)



Consistency



Simple Error Handling



Shortcuts



Easy Reversal



Informative Feedback



Support Internal Locus of Control



Dialogue to Yield Closure



Reduce Short-Term Memory Load

BENTUK - BENTUK ANTARMUKA

1. COMMAND-LINE INTERFACE (CLI)

kawung.cs.ui.ac.id - PuTTY

```
login as: lintang.matahari
lintang.matahari@kawung.cs.ui.ac.id's password:
Linux kawung 3.2.0-6-amd64 #1 SMP Debian 3.2.102-1 x86_64

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/*copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Wed Sep 19 21:30:18 2018 from 103.75.232.2
lintang.matahari@kawung:~$ Ini adalah contoh command-based interface :)
```



Shell

```
Python 3.7.9 (bundled)
>>> for x in range(20): print('Za warudo!')
```

```
Za warudo!
```

```
>>> |
```

- Require the user to **type in commands at a prompt symbol** appearing in the display
- The commands are typically abbreviations
- Nowadays, command-line interface (CLI) were generally superseded by the graphical user interface (GUI)

DESIGNING COMMAND-LINE INTERFACE

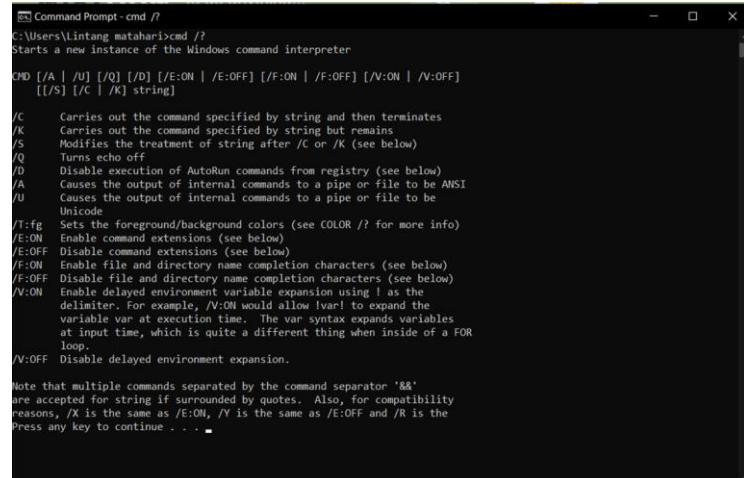
Some considerations:

The form of the commands (e.g., the use of abbreviations, full names, familiar names, etc.)

Syntax (e.g., how best to combine commands)

Organization (e.g., how best to structure options)

Consistency in commands labelling/naming



Command Prompt - cmd /?

C:\Users\lintang.matahari>cmd /?

Starts a new instance of the Windows command interpreter

COMMANDS: [/A | /U] [/Q] [/O] [/E:ON | /E:OFF] [/F:ON | /F:OFF] [/V:ON | /V:OFF] [[/S] [/C | /K] string]

/C Carries out the command specified by string and then terminates
/K Carries out the command specified by string but remains
/S Modifies the treatment of string after /C or /K (see below)
/Q Turns echo off
/D Disable execution of AutoRun commands from registry (see below)
/A Causes the output of internal commands to a pipe or file to be ANSI
/U Causes the output of internal commands to a pipe or file to be Unicode
/T:fg Sets the foreground/background colors (see COLOR ?? for more info)
/E:ON Enable command extensions (see below)
/E:OFF Disable command extensions (see below)
/F:ON Enable file and directory name completion characters (see below)
/F:OFF Disable file and directory name completion characters (see below)
/V:ON Enable delayed environment variable expansion using ! as the delimiter. For example, /V:ON would allow !var! to expand the variable var at execution time. The var syntax expands variables at input time, which is quite a different thing when inside of a FOR loop.
/V:OFF Disable delayed environment expansion.

Note that multiple commands separated by the command separator '&&' are accepted for string if surrounded by quotes. Also, for compatibility reasons, /X is the same as /E:ON, /Y is the same as /E:OFF and /R is the Press any key to continue . . .

2. GRAPHICAL USER INTERFACE (GUI)



Component examples:

Windows

Icons

Menus

Pointing device

The original **WIMP** from 1995

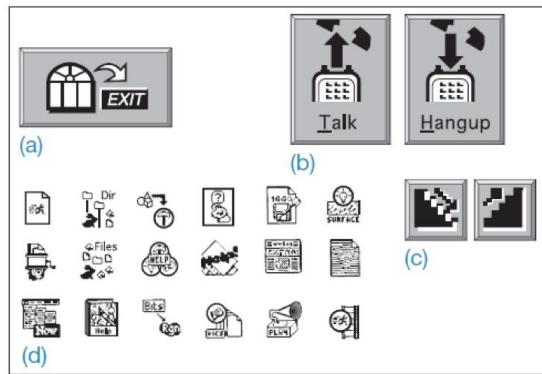
Toolbars

Rollovers

1990an - 2000

2000 - 2010

2010 - sekarang



early icons

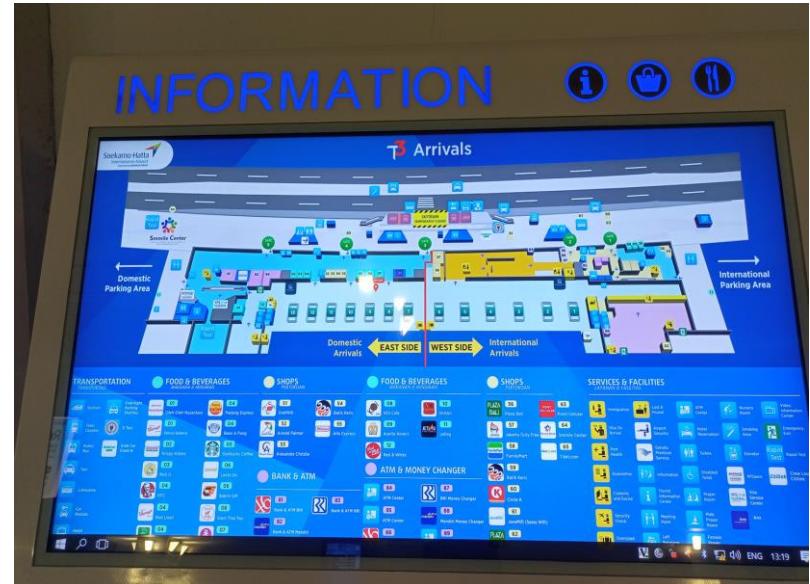


newer (skeuomorphic) icons



modern flat 2D icons

INFORMATION VISUALIZATION & DASHBOARDS



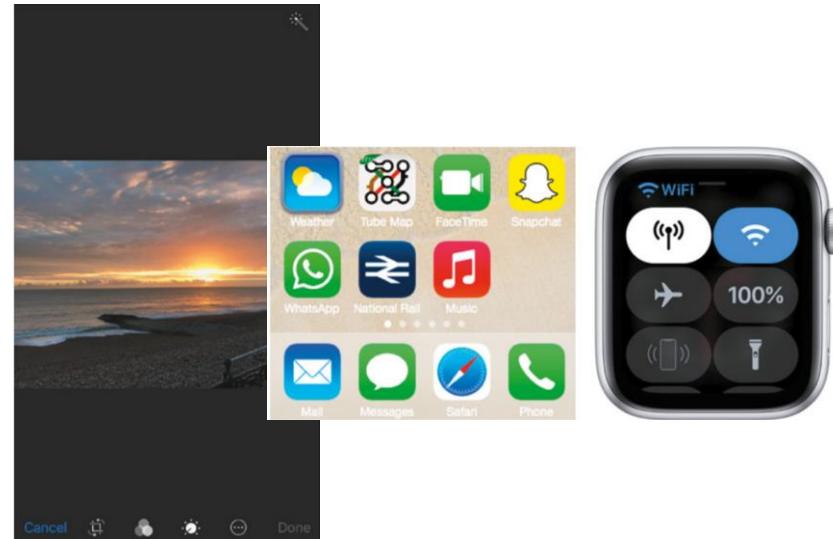
DESIGNING GRAPHICAL USER INTERFACE

Some considerations:

Window design: Window management (enabling the user to move fluidly between different windows and displays and to switch attention rapidly)

Menu design: Use informative but distinguishable phrases, avoid user errors regarding clicking wrong menu, and decide the proper types of menu (e.g., flat collapsible, etc.).

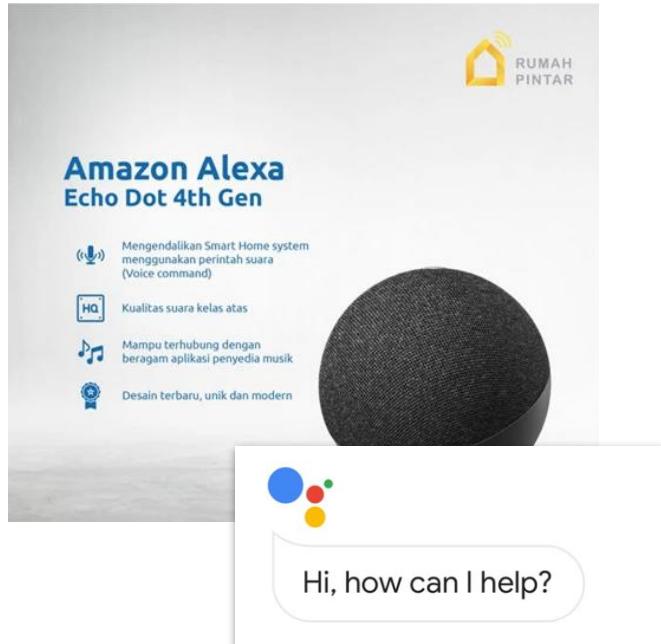
Icon design: Use objects which are recognizable, text label to disambiguate meanings of icons, and prevent text/icon cluttering.



SESI LATIHAN

- Buatlah **sketsa ikon sederhana** yang akan ditampilkan pada layar kamera digital, untuk :
 - **Fitur rotasi gambar 90 derajat ke samping**
 - **Fitur Auto-Enhance**
 - **Fitur Fix Red Eye**
 - **Fitur Crop**
- Tunjukkan sketsa yang dibuat pada teman Anda tanpa memberitahukan fiturnya. Tanyakan apakah mereka memahami sketsa yang dibuat

3. SPEECH / VOICE USER INTERFACE (VUI)



- Use command and conversation interaction type where **users speak and listen to the interface** rather than click, tap, swipe, or push it
- Can involve proactive system when the system initiates the interaction

Some examples:

- Google voice assistants
- Amazon Alexa
- AppleTV VoiceOver

etc.

DESIGNING VOICE USER INTERFACE

Key issues in VUI design:

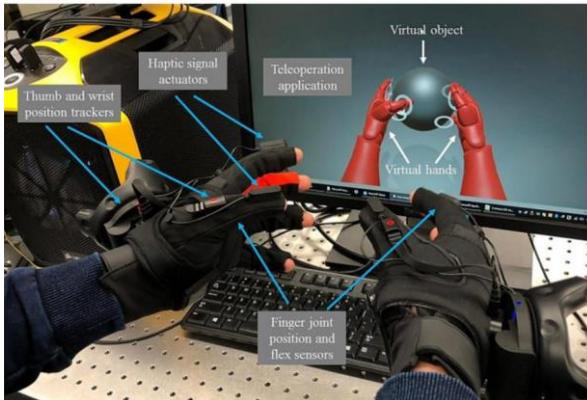
How to design it **as natural as possible** (more human-like)

How to design it **to help users navigate easily** (e.g., to recover/escape from errors/mishearings, etc.)

How to design it **to guide users who give vague or ambiguous commands**



4. HAPTIC INTERFACES



- Use tactile feedbacks by applying **vibrations and forces** to the user using actuators embedded in a device or user's clothing.

Some examples:

- Game consoles
 - Vibrations in a smartphone when there is a notification
 - Tactile gloves for human-virtual object interactions
- etc.

<https://www.haptic.ro/haptic-internet-pave-the-way-of-internet-of-things/>

DESIGNING HAPTIC INTERFACES

Key issues in haptic interface design (Jones & Sarter, 2008):

Determining the **place** of the actuators

Determining **what will activate** the haptic feedbacks

Determining **how high is the intensity of** the haptic feedbacks

Avoid annoying experiences :-)



6. AUGMENTED & MIXED REALITY

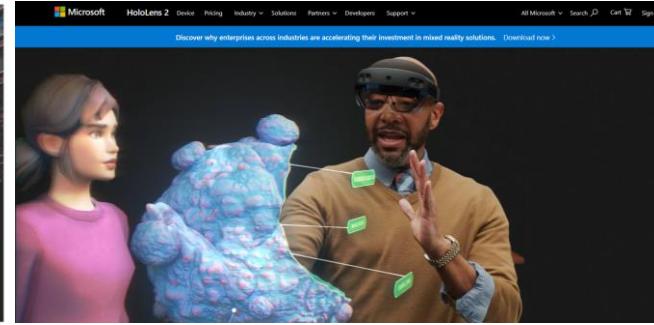


Figure 7.27 Augmented reality overlay used on a car windshield
Source: <https://wayray.com>

- Augmented Reality (AR) **adds digital elements** (augmentation) to a live view using cameras
- Mixed Reality (MR) **combines** virtual and augmented realities elements (example: Microsoft Hololens)

DESIGNING AUGMENTED REALITY

Key issues in AR design:

Determining the **form of the digital augmentation**

Determining **when and where the digital augmentation will appear**

Avoid distraction by the digital augmentation objects

Design digital augmentation that is **simple** and **align with real-life objects**



7. VIRTUAL REALITY



A **complete immersion** of one's experience from the physical world. It can involve an imagined or real-world environment

DESIGNING VIRTUAL REALITY

Some considerations in VR design:

Enhance the **feeling of presence** with virtual-self body

Prevent simulator sickness from galvanic stimulation

Designing **effective navigation**

Determine how best the user will **interact with the elements in the VR**



8. ROBOT & DRONES DESIGN



Figure 7.30 (a) Mel, the penguin robot, designed to host activities; (b) Japan's Paro, an interactive seal, designed as a companion, primarily for the elderly and sick children

Source: (a) Mitsubishi Electric Research Labs (b) Parorobots.com

https://www.youtube.com/watch?v=mzhvR4wm_M

DESIGNING ROBOT AND DRONES

Some issues in robot design:

Whether **anthropomorphism** (e.g., designed as human as possible in appearance) of robots should be encouraged

Whether using unmanned drones to **capture images** of private properties and people without consent is ethical



<https://www.bbc.com/news/world-asia-33562368>

9. WEARABLE



DESIGNING WEARABLES

Some considerations in wearable design:

A core design concern: **Comfort**

Consider designing a **light, small, and fashionable** device

Consider issues related to **hygiene**: Is it possible to wash the device?

Consider how the user **control** the device



10. APPLIANCES



Figure 6.19 A typical toaster with basic physical controls



... bahkan perabotan yang kita jumpai sehari-hari

DESIGNING APPLIANCES INTERFACE

Some considerations in appliance interface design:

Need to be considered as **transient**: short time interactions

Avoid unnecessary array of buttons or objects that could confuse

Emphasize on **simplicity** and **visibility**



CONTOH PENELITIAN:

UTOMO & SANTOSO (2015); HASANI, SANTOSO, & ISAL (2019); ADRIANUS, GUARDDIN, & SANTOSO (2019)



PEDAGOGICAL AGENT ON SCELE

(UTOMO & SANTOSO, 2015)



A thumbnail image showing a stack of three books, one blue, one green, and one red, with the title 'Development of gamification-enriched pedagogical agent for e-Learning system based on community of inquiry' partially visible above it.

Call Number	SK 1303 (Softcopy SK-785)
Collection Type	Skripsi
Title	Pengembangan pedagogical agent dengan menggunakan konsep gamification pada moodle learning management system
Author	Andika Yudha Utomo;
Publisher	Depok: Fakultas Ilmu Komputer, 2014
Subject	
Location	FASILKOM-UI;

[Find Similar](#) [Add to Favorite](#)

Development of gamification-enriched pedagogical agent for e-Learning system based on community of inquiry

Full Text:  PDF  [Get this Article](#)

Authors: [Andika Y. Utomo](#) [Universitas Indonesia, Depok, Indonesia](#)
[Harry B. Santoso](#) [Universitas Indonesia, Depok, Indonesia](#)

Published in:



- Proceeding
[CHIUXID '15](#) Proceedings of the International HCI and UX Conference in Indonesia
Pages 1-9
ACM New York, NY, USA ©2015
[table of contents](#) ISBN: 978-1-4503-3334-4 doi:>[10.1145/2742032.2742033](https://doi.org/10.1145/2742032.2742033)



 2015 Article

Bibliometrics

- Downloads (6 Weeks): 10
- Downloads (12 Months): 151
- Downloads (cumulative): 151
- Citation Count: 0



Recent authors with related interests

Concepts in this article

powered by
IBM Watson™

PEDAGOGICAL AGENT ON SCENE

(UTOMO & SANTOSO, 2015)

Selamat Siang, Andika Yudha Utomo

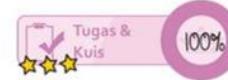
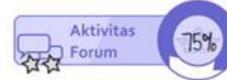
Selamat datang di Student-Centered Learning

Overall kamu sudah berusaha untuk aktif di course page ini. Tingkatkan terus partisipasimu ya, diskusikan apa yang kamu dapat dengan temanmu.

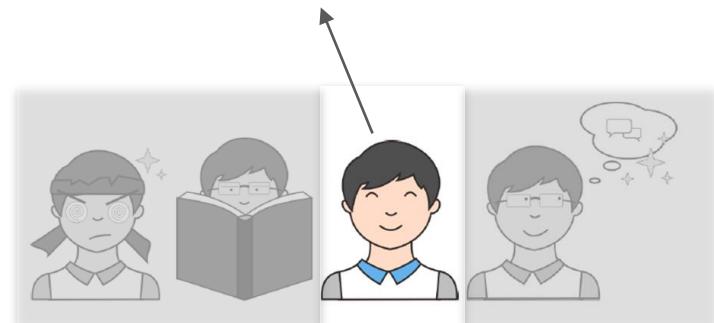
Pengingat tugas/kuis 0

baca >>

Masukan:



Lencana:



PEDAGOGICAL AGENT ON SCENE

(UTOMO & SANTOSO, 2015)

Halo, Andika Yudha Utomo
Selamat datang di Student-Centered Learning

Halo Andika Yudha, overall kamu sudah berusaha untuk aktif di course page ini. Tingkatkan terus partisipasimu ya, sampaikan apa yang kamu pelajari di forum, jawab pertanyaan teman-temanmu di forum, dan kerjakan tugas dan kuis sebaik-baiknya.

Masukan:

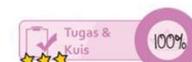
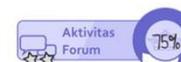
Aktivitas Online:
Kamu sudah rutin memantau course page setiap hari :) Dengan demikian, kamu tidak akan ketinggalan informasi mengenai perkuliahan. Ayo ajak teman-teman yang lain untuk aktif di course page ini juga ya.

Aktivitas Forum:
Cobalah untuk aktif meng-update pengetahuannya di forum, dengan menanyakan hal yang belum kamu pahami, atau menjawab pertanyaan dari teman. Proses ini akan meningkatkan pemahamanmu dalam belajar.

Download materi:
Setelah cukup banyak mempelajari materi, kamu bisa menemukan pengayaan materi di berbagai media lain untuk menambah wawasanmu :) Jangan lupa untuk sharing apa yang kamu telah pelajari di forum diskusi ya...

Pengerjaan tugas dan kuis:
Selamat mengerjakan kuis atau tugas yang telah diberikan ya. Mengerjakannya jangan mepet deadline, karena hasilnya nanti tidak maksimal. Jika ada yang tidak dimengerti, coba diskusikan dengan teman-temanmu di forum.

Masukan:



Setelah cukup banyak mempelajari materi, kamu bisa menemukan pengayaan materi di berbagai media lain untuk menambah wawasanmu. Selamat belajar! :)

Pengingat tugas/kuis 2

- Assignment yang belum dikumpulkan:
Tugas 1 deadline: 20/06/2014 17:00
- Quiz yang belum dikerjakan:
Kuis bab 2 deadline: 21/06/2014 05:04

tutup

REPORT (LOGS) ON SCELE

[REG] Sistem Interaksi (Kelas A dan B) - Gasal 2014/2015

Faculty Homepage ▾ Academic Links ▾ Panduan Mahasiswa ▾ Informasi Internal ▾

Sunday 15 November 2015

SCELE ► REG_Sister_1415_AB ► Reports ► Logs ► All participants, All days

You are logged in as Harry B. Santoso (Logout)

[REG] Sistem Interaksi (Kelas A dan B) - Gasal 2014/2015: All participants, All days (Asia/Jakarta)

[REG] Sistem Interaksi (Kelas A dan B) - Gasal 2014/2015 [more] All participants [All days]
All activities All actions Display on page Get these logs

Displaying 48091 records

Page: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 ...481 (Next)

Time	IP Address	Full name	Action	Information
Sat 14 November 2015, 07:01 AM	36.70.138.246	Harry B. Santoso	course report log	[REG] Sistem Interaksi (Kelas A dan B) - Gasal 2014/2015
Sat 14 November 2015, 07:01 AM	36.70.138.246	Harry B. Santoso	course report log	[REG] Sistem Interaksi (Kelas A dan B) - Gasal 2014/2015
Sat 14 November 2015, 07:01 AM	36.70.138.246	Harry B. Santoso	course report log	[REG] Sistem Interaksi (Kelas A dan B) - Gasal 2014/2015
Sat 14 November 2015, 07:01 AM	36.70.138.246	Harry B. Santoso	course view	[REG] Sistem Interaksi (Kelas A dan B) - Gasal 2014/2015
Fri 13 November 2015, 04:25 PM	10.5.89.39		course view	[REG] Sistem Interaksi (Kelas A dan B) - Gasal 2014/2015
Thu 12 November 2015, 04:22	152.118.25.112		course view	[REG] Sistem Interaksi (Kelas A dan B) - Gasal 2014/2015

ALTERNATIVE UI FOR PERSONALIZED E-LEARNING MODULES

(HASANI, SANTOSO, & ISAL, 2019)



UNIVERSITAS INDONESIA

PENGEMBANGAN DESAIN INTERAKSI ALTERNATIF MODUL
E-LEARNING BERDASARKAN GAYA BELAJAR
FELDER-SILVERMAN

SKRIPSI

LINTANG MATAHARI HASANI
1506689231

Conferences > 2019 International Conference... ?

Designing Alternative Interface Design of e-Learning Modules based on Felder-Silverman Learning Styles and User Centered Design Approach

Publisher: IEEE

Cite This

PDF

Lintang Matahari Hasani ; Harry Budi Santoso ; R. Yugo Kartono Isal All Authors

2
Paper
Citations

209
Full
Text Views



Abstract

Document Sections

- I. Introduction
- II. Literature Review
- III. Methodology
- IV. Results and Discussion
- V. Conclusion

Authors

Figures

References

Abstract:

Presently, only a handful of research focuses on the development of interface design for e-Learning modules based on various learning styles. The current studies on this field are still limited to some usability issues which range from inadequate usability of the proposed design to exclusion of important user research. Nevertheless, interface design is undoubtedly a crucial aspect influencing the success of an e-Learning system implementation. This paper outlines a user-centered study focusing on the development of an alternative interface design of e-Learning modules based on Felder-Silverman learning styles and User Centered Design approach by utilizing mixed methods. The study analyzes users' learning styles, learning object preferences, interface preference, and pain points extracted from a user research which includes semi-structured interviews and certain coding techniques. The results are used as a primary guideline in order to create an alternative interface design for eLearning modules. Three out of four proposed alternative designs have better usability than the designs from the previous study based on System Usability Score measurement.

Published in: 2019 International Conference on Advanced Computer Science and Information Systems (ICACSIS)

ALTERNATIVE UI FOR PERSONALIZED E-LEARNING MODULES

(HASANI, SANTOSO, & ISAL, 2019)

TABLE III. DESIGN STRATEGIES FOR ACTIVIST-SENSING-VISUAL-GLOBAL LEARNER'S E-LEARNING MODULE

Event of Learning	Learning Object	Suggested Activity	Design Strategy
Gaining attention	Material introduction section	Pondering the trigger and reading the introduction	Providing a representative illustration, chapter description, and a fact-based trigger question
Informing objectives	Material introduction section	Reading the objectives	Providing straightforward learning objectives
Stimulating recall	Pre-quiz module	Completing the pre-quiz	Providing pre-quiz with a few relevant questions
Presenting a stimulus material	Slides and additional material section	Reading the slides and opening the relevant additional material	Providing slides with visualizations which emphasize facts and free navigation between topics
Providing learning guidance	Discussion forum	Reading a relevant thread about learned topics with relevant feedbacks or learning guide	Facilitating relevant thread filtering
Eliciting performance	Discussion forum	Participating in a discussion	Providing discussion activities by using triggers with real-life facts and encouraging discussions
Providing feedback	Discussion forum	Asking a question through a thread	Providing an informative feedback through thread comments
Assessing performance	Self-assessment test module	Completing the post-quiz	Providing self-assessment test with easy navigation across the questions and test results in order to facilitate review



Fig. 3. The user interface of the material presentation module for presenting stimulus material phase

Redesigning Ovaryanti's (2016) personalized e-Learning modules based on Felder-Silverman learning styles (Felder & Silverman, 1988)

DESIGN OF MOBILE APPLICATION FOR PROVIDING PUBLIC FACILITIES FOR PERSONS WITH DISABILITIES

(ADRIANUS, GUARDDIN, & SANTOSO, 2019)



	Find Similar Add to Favorite
Call Number	SK-1708 (Softcopy SK-1190)
Collection Type	Skripsi
Title	Pengembangan Desain Interaksi Aplikasi Penyedia Informasi Fasilitas Publik untuk Penyandang Disabilitas
Author	Qurrata A'yuna Adrianus;
Publisher	Depok: Fakultas Ilmu Komputer Universitas Indonesia, 2019
Subject	
Location	FASILKOM-UI;

Developing Interaction Design to Provide Public Facilities Information for Persons with Disabilities

Publisher: IEEE

[Cite This](#)

[PDF](#)

Qurrata A'yuna Adrianus ; Gladhi Guarddin ; Harry Budi Santoso [All Authors](#)

79
Full
Text Views



Abstract

Document Sections

I. Introduction

II. Literature Review

III. Methods and Materials

IV. Results and Discussion

V. Conclusion

Abstract:

This research was conducted to explore user needs and an effective design interaction based on user interface principle and the needs of both disabled and non-disabled people. This study proposes an effective design of mobile application for providing public facilities for persons with disabilities called BisaGo. The data were collected from an online survey to get the user requirements about design and information. The evaluation was done using usability testing, and interview sessions. The result shows that there are three groups of user needs toward this application, i.e: general needs, primary needs, and special needs. Also, the evaluation shows that the simple design is enough to represent the user needs with an average score of 8.05. However, the design can be improved to make it more attractive.

Published in: 2019 International Conference on Advanced Computer Science and Information Systems (ICACISIS)

Authors

DESIGN OF MOBILE APPLICATION FOR PROVIDING PUBLIC FACILITIES FOR PERSONS WITH DISABILITIES

(ADRIANUS, GUARDDIN, & SANTOSO, 2019)

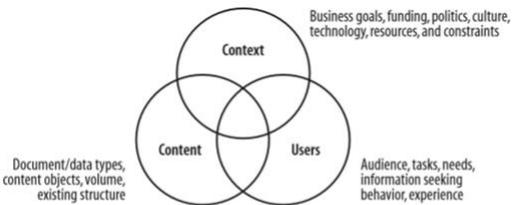


Figure 1. Circle of Information Architecture [7]



Figure 3. Wireframes of the application



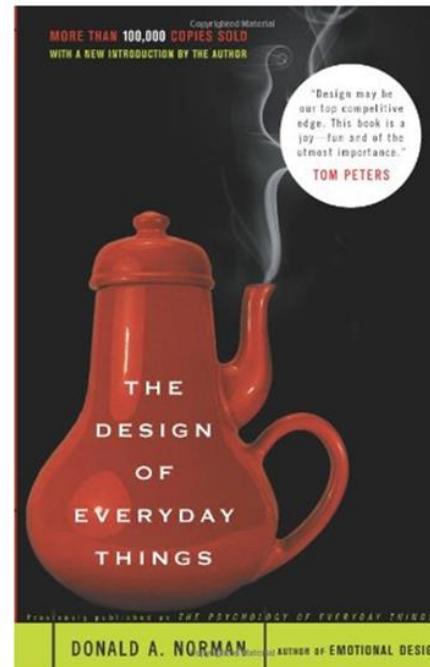
Figure 4. Prototypes of the application



Figure 5. Design improvement

REFERENSI & JURNAL TERKAIT

RECOMMENDED BOOKS



JOURNAL OF USABILITY STUDIES

The screenshot shows the UXPA (User Experience Professionals Association) website. At the top, there's a navigation bar with links like 'Most Visited', 'Getting Started', 'Fasikom UI', and 'INBOX'. Below the navigation is the UXPA logo and the text 'User Experience Professionals Association'. A horizontal menu bar includes links for 'About UXPA', 'UX Resources', 'Publications', 'Events', 'Chapters and SIGs', 'Membership', 'Careers', and 'Consultants Directory'. On the left, there's a large graphic for the 'Journal of Usability Studies' (JUS) featuring the letters 'JUS' in a stylized font with vertical bars of different heights. To the right of the graphic, there are links to 'Read the current issue' and 'Past issues'. Below the graphic, the text 'About the Journal' is followed by a description of JUS as a peer-reviewed, international, online publication dedicated to promoting and enhancing the practice, research, and education of user experience design and evaluation. It also lists the journal's aims: providing a forum for practitioners and researchers to share empirical findings and case studies.

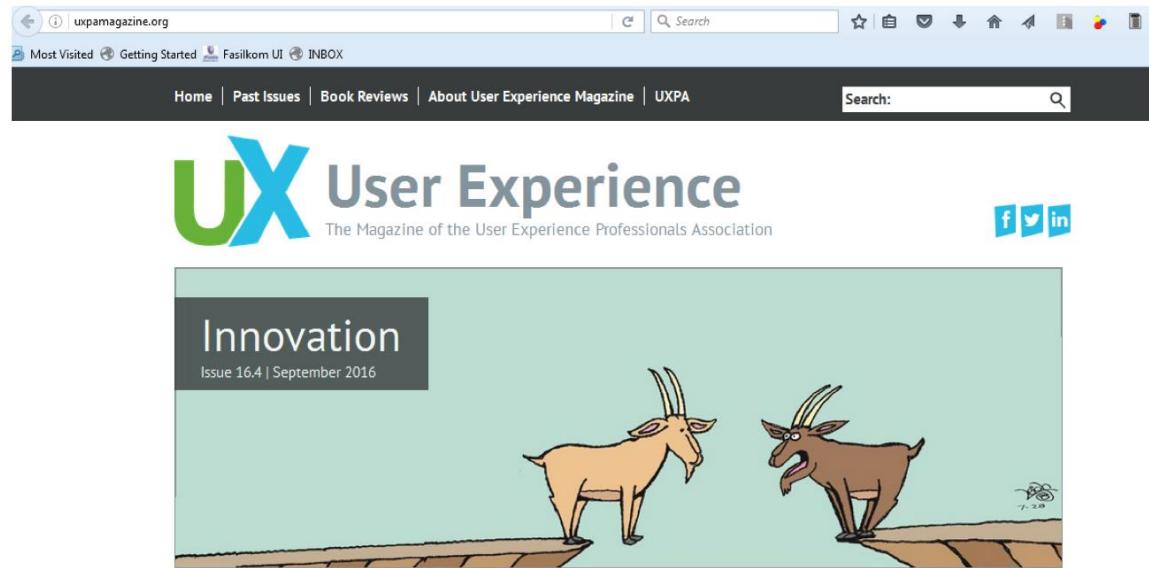
<https://uxpa.org/publication/journal-usability-studies>

SPRINGER: mUX

The screenshot shows a web browser window displaying the Springer website. The URL in the address bar is www.springer.com/computer/hci/journal/13678. The page is titled "mUX: The Journal of Mobile User Experience". It features a sidebar with navigation links for Home, Subjects, Services, Products, Springer Shop, and About us. The main content area includes the journal's title, editors, ISSN, and journal number. A red circular button labeled "Open Access Read online" is prominently displayed. To the right, there are sections for "READ THIS JOURNAL ONLINE", "FOR AUTHORS AND EDITORS", and "View Open Access Articles". The top of the page has a navigation bar with links for Most Visited, Getting Started, Fasilkom UI, INBOX, and a search bar.

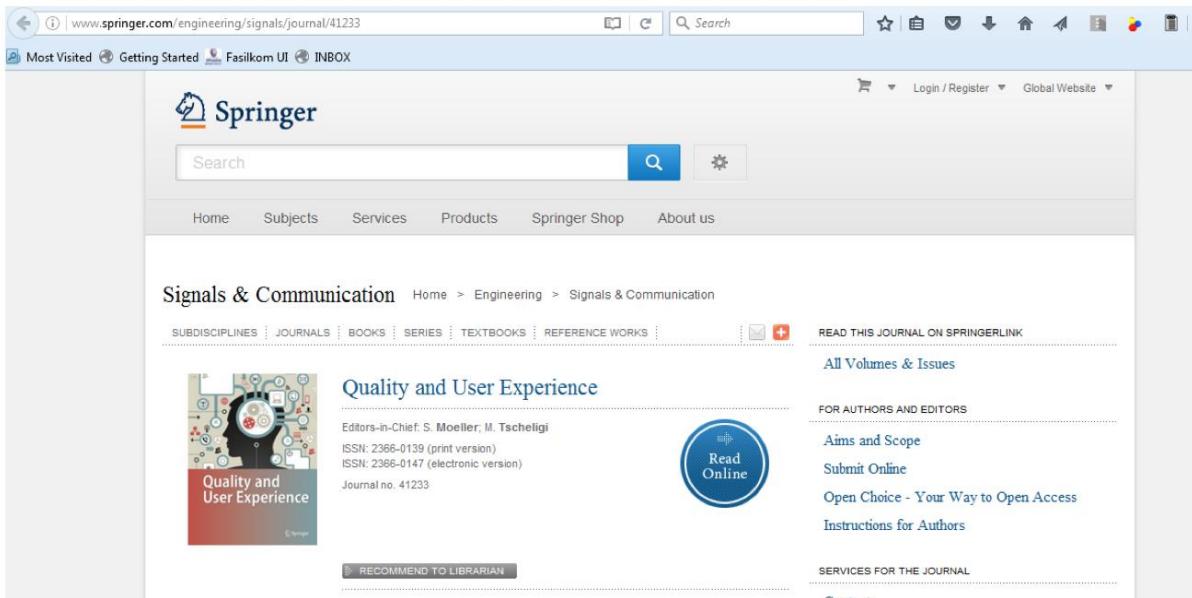
<http://www.springer.com/computer/hci/journal/13678>

The Magazine of the UX Professionals Association



<http://uxpamagazine.org/>

SPRINGER : QUALITY AND USER EXPERIENCE



<http://www.springer.com/engineering/signals/journal/41233>

UJI PEMAHAMAN

Jelaskan perbedaan antara *user interface* (UI) dengan *user experience* (UX)?

Jelaskan yang dimaksud dengan *user-centered design*?

Apa saja bentuk-bentuk antarmuka yang Anda ketahui? Berikan contohnya.

Sebutkan satu contoh aplikasi yang sering Anda gunakan. Komentari antarmuka aplikasi tersebut. Kaitkan dengan *Shneiderman's Eight Golden Rules of Interface Design*.

Adakah keterkaitan antara *Shneiderman's Eight Golden Rules of Interface Design* dengan proses kognisi yang telah Anda pelajari? Jelaskan argumen Anda.

DAFTAR REFERENSI

Adrianus, Q. A., Guarddin, G., & Santoso, H. B. (2019). Developing interaction design to provide public facilities information for persons with disabilities. Artikel dipresentasikan di International Conference on Advanced Computer Science and Information Systems (ICACSYS).

<https://doi.org/10.1109/ICACSYS47736.2019.8979739>

Hasani, L. M., Santoso, H. B., & Isal, R. Y. K. (2019). Designing alternative interface design of e-learning modules based on Felder-Silverman learning styles and user centered design approach. Artikel dipresentasikan di International Conference on Advanced Computer Science and information Systems (ICACSYS).

<https://doi.org/10.1109/ICACSYS47736.2019.8979717>

Jones, L. A., and Sarter, N. B. (2008) Tactile Displays: Guidance for their Design and Application, Human Factors: The Journal of the Human Factors and Ergonomics Society 50, 90–111.

DAFTAR REFERENSI

- Ovaryanti, A. S. (2016). Pengembangan design interaksi materi intstruksional berdasarkan gaya belajar Felder Silverman. Skripsi. Universitas Indonesia
- Preece, J., Sharp, H., & Rogers, Y. (2002). *Interaction Design: Beyond Human-Computer Interaction*. New York: John Wiley & Sons.
- Shneiderman, B., & Plaisant, C. (2005). Designing the user interface: Strategies for effective human-computer interaction (4th edition). Pearson Education.
- Strategy & Design. (n.d). New to UX? A quick overview of User Experience. Diakses di <https://strategyanddesign.co/strategic-user-experience/new-to-ux/>
- Utomo, A., & Santoso, H. B. (2015). Development of gamification-enriched pedagogical agent for e-Learning system based on community of inquiry. Dipresentasikan di the International HCI and UX Conference Indonesia.



Terima Kasih,
**Ada
Pertanyaan?**