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**THE ABSENCE OF IMPORTANT CAREWORDS AMONG UNIVERSITY
WEBSITES: A PRELIMINARY STUDY ON WEB USABILITY**

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Abstract

Most universities have a website with one of prevalent basic purpose is to provide an information to current and prospective students. The university web developers quite often neglect the process to incorporate customers' voice during the development process, as suggested by the web usability, an area within human-computer interaction (HCI) research. As many web users rely on a search engine to seek information, the inclusion of words that are most likely used by them (called carewords), in a web site are very critical. This paper aims to present a preliminary investigation of usability aspects in university websites, by focusing on the web content. This study applies Internet research methods. A simulation of a hypothetical case in which a prospective university student intends to study in Surabaya is performed. Search-words "kuliah di Surabaya", "universitas di Surabaya", and "kuliah teknik industri" are applied in Yahoo and Google search engines. The top 20 links obtained from each searching task are analyzed. Secondary data from EPSBED website was supplied to support the analysis. Furthermore, a content analysis using was conducted to selected websites of universities located in Surabaya. Overall, the findings emphasize that mismatch between the terms used by audiences and those presented in the web content could reduce the visibility of the website. Finally, this study suggests the university web developers to be more intensive applying usability principles to make their websites visible and accessible to potential students, as well as usable to other intended stakeholders.

Keyword: *university website, web usability, content analysis, higher education*

Introduction

Many universities worldwide including Indonesia have developed various web-based applications. University websites serve as the gate for staff and students to university's information systems. For example, web-based information systems in supporting academic courses, such as e-learning have been growing recently to enhance learning process. For most of university websites, information for prospective students is provided as a means to communicate the academic programs offered and the admission procedures. This information is critical to university to get potential good students. For prospective students, the information is useful to choose the appropriate university and to enroll the appropriate program, as universities are located mainly in big cities, far away for many students' home. A critical question is whether university web content has been developed by incorporating its audience voice, to make it accessible and usable for prospective students.

The study presented in this paper is aimed to investigate the issue by examining the accessibility and usability of university websites searched by a prospective student. The result could benefit the person-in-charge of university web to improve the web content.

Theoretical view: University website and web usability

A website is an infinite number of web pages connected by a common theme and purpose (Reynolds, 2004). A good design is important to provide potential audiences (or browsers) with easy access to all web pages. The design and development of an effective website requires skills on both technological and content aspects. Technological skills are required to understand, select, and master software applications for web design and its database. It extends to publish (hosting) website, to update the information, to maintain, and to evaluate its performance. Furthermore, the skill on developing web content which is called copywriting, used among practitioners, or web content

analysis among researchers, is critical because web content is related to business success (Veloso, 2004).

Effective web content is the one, which match potential audiences' need. It should be developed by understanding their behavior during browsing through Internet. A practical framework contained six key elements called 'six Cs': Cares, Compelling, Clear, Complete, Concise, and Correct could be applied in developing web content (McGovern, 2006). Web content should be developed by incorporating carewords, as the core patterns of content (McGovern, 2006). Carewords represent the term used by audiences, therefore they should be identified from audiences.

As there are a huge number of websites, the usability aspect has a great importance to make a website is accessible and usable to audiences or users. Web usability is a combination of factors that affect the user's experience with the product or system, including: ease of learning, efficiency of use, memorability, error frequency and severity, and subjective satisfaction (Nielsen, 2000). The use of right carewords would increase the accessibility of the site.

Similar to the general role of website, university websites could provide a positive impact by communicating its service to targeted audience, to create positive image, to attract potentials students, and to establish public relationship (Dembla et al., 2007). University websites have a great variety in style, web structure, and web content, and web application. Those varieties might indicate the difference in the web-adoption level (Teo and Pian, 2004).

A university website has two basic roles, which are as a public face of the university and the interface to a range of university services (Wise et al., 2004). As an illustration, University of Portsmouth UK defines three main objectives of its university website as follows: (1) to provide relevant and current information to a wide audience base, (2) to ensure information is provided in an accessible and usable manner, and (3) to promote and maintain the corporate image of the university (www.port.ac.uk). The wide audiences include internal parties, which are current students and staff, as well as all external audiences, including prospective students, prospective staff, partners, government, and community. The university website with its domain name (e.g. www.ubaya.ac.id) is normally, dedicated to external audiences. On the other hand, all internal audiences use a web-based intranet for utilizing various services, such as instructional delivery, library access, student registration, and administration.

The most important external audience is probably prospective students, especially in the current Indonesian condition, where many universities faced declining enrollment rates (explored and extracted from data EPSBED (EPSBED, 2009). In United States, a report indicated that 42% of Internet users claimed that the Internet played a major role for making decision about a school or college for themselves or their children (Elliance, 2006). Therefore, a great effort should be placed to make university websites visible to external parties especially prospective students.

Method

This study applies Internet research methods, which refer to various methods for collecting data through Internet (Hewson et al., 2003). Data gathering and data analysis could be categorized into three steps, as follows:

Step-1: A simulation of a hypothetical case in which a prospective student wants to study in Surabaya is performed. The hypothetical prospective student plans to study in Surabaya, especially looking for Industrial Engineering program. The person is assumed to use search engines Yahoo and Google by inputting the following search-words:

kuliah di Surabaya
universitas di Surabaya
kuliah teknik industri

The top 20 links displayed by each of them is recorded and analyzed.

Step-2: A secondary data related to profile of higher education institutions in Indonesia is collected from Internet sources, which are

www.evaluasi.or.id: a web site of Evaluasi Program Studi Berbasis Evaluasi Diri (EPSBED) managed by Directorate General of Higher Education

www.kopertis7.go.id: a website of Kopertis VII managed by a coordinator of private higher education institutions.

The secondary data collected to support the step-1 is as follows:

1. list of higher education institutions in Surabaya
2. list of universities in Surabaya
3. list of Industrial Engineering study program in Indonesia

Step-3: Furthermore, this study applies a content analysis method, as a methodology in the social sciences for studying the content of communication or publication, such as books, laws, and websites (Wikipedia). The content analysis was conducted to three websites of selected universities located in Surabaya. This analysis was aimed to interpret the findings of the first and second steps.

Results

A hypothetical prospective student search information about studying in Surabaya. Using a search-words “kuliah di Surabaya”, he/ she attempts to find relevant information by using Google and Yahoo search engines. He/ she might expect information about the higher education institutions in Surabaya. The first 20 links for obtained for each search engine are recorded by its rank, description, and link address. Table 1 presents the rank and description obtained.

The results indicate that most of the links obtained are not related to information about higher education institutions. Analysis of the web links obtained is depicted in Table 2. A university related site is defined as a link with a university domain ac.id. or edu. Homepage is the frontpage of the university domain name, e.g. www.ubaya.ac.id or the frontpage of its sub-domain e.g. ti.ubaya.ac.id.

Table 1. Search result with search-words “kuliah di surabaya”

No	Google result	Yahoo result
1	cari kuliah gratis - Surabaya - Kegiatan Komunitas	Surabaya Post
2	Kuliah gratis Bagi PNS di ITS Surabaya - Free Scholarship Info	PK-Sejahtera Kota Surabaya " KKD (Kuliah Kerja Dakwah)
3	Kuliah di Surabaya enak gak sih? - DetikForum	PEMBEKALAN MAHASISWA SEKOLAH TINGGI ILMU
4	Kuliah di Surabaya enak gak sih? [Archive] - DetikForum	Hujan Pertama di Surabaya
5	Anak Nias kuliah diUPH-Surabaya	Teknik Industri Universitas Surabaya - Kata Mahasiswa
6	Anak Nias kuliah diUPH-Surabaya	7 Langkah Sukses Kuliah di Perguruan Tinggi
7	Rachman Kuliah di Surabaya - 11/05/2006,	STIKOM Website
8	Kuliah di Surabaya enak gak sih?	suarasurabaya.net - Laboratorium Radio Sangat Membantu
9	75 DAFTAR REFERENSI Abede, Sam Paren. (2002).	suarasurabaya.net - Laboratorium Radio Sangat Membantu
10	infoGue - Cowok Pemeran Video Syur Kuliah Di Surabaya	Surabaya Post
11	News Perbanas Surabaya - Seminar / Kuliah Tamu	Teknik Industri Universitas Surabaya - Home
12	Kuliah Lapangan TL 2005 Surabaya-Bali	ANTARA :: Mantan TKW Lulus S-1 Untag Surabaya
13	» lowongan kerja surabaya november 2009 (masih kuliah)	Praktek Mahasiswa Psikologi UC di Kantor CitraLand
14	Kuliah di Surabaya enak gak sih?	Universitas 17 Agustus 1945 Surabaya
15	the first online news from sumbawa	Berita.: Halaman Depan - www.surabaya.go.id - ...
16	Surabaya Post	Surabaya Food - Informasi Tempat Makan & Komunitas
17	PK-Sejahtera Kota Surabaya » KKD	detikSurabaya: warta digital regional Tempat Kuliah
18	Gatra.Com - Mahasiswa IAIN Surabaya Boikot Kuliah	Creativepreneur VCD UC di ITS Surabaya
19	Mau Cepet Lulus Kuliah...? Business Consulting	Lulus kuliah langsung jadi manajer. Mau? — deteksi.info
20	Eka Hesti Ermi W: Tak Pernah Terbayang Bisa Kuliah	News Perbanas Surabaya - Implementasi softskill

Table 2. Web links of “kuliah di Surabaya”

Search-words	Google		Yahoo	
	University related sites	homepage	University related sites	homepage
Kuliah di Surabaya	4 (20%)	0 (0%)	7 (35%)	3 (15%)

The result indicates that “kuliah di surabaya” producing few links to university websites. Google only produces 20% university related websites, with none of them land to the university homepage. The result from Yahoo produces a slightly better result. The prospective student might be disappointed with that as he/ she might expect the links to higher education institution websites in Surabaya. Secondary data extracted from EPSBED website (EPSBED, 2009) indicated that there are 80 higher education institutions in Surabaya itself, in the following categories:

- § Universitas : 26
- § Institut : 6
- § Sekolah Tinggi : 29

§ Akademi : 13
§ Politeknik : 6

The similar search was performed with search-words “universitas di Surabaya”, and the results are presented in Table 3.

Table 3. Search result with search-words “universitas di Surabaya”

No	Google result	Yahoo result
1	Universitas Surabaya - UBAYA - To Be The First University	Universitas Surabaya - Wikipedia bahasa Indonesia
2	Universitas Wijaya Kusuma Surabaya	Universitas Negeri Surabaya
3	Petra Christian University Surabaya	Universitas Negeri Surabaya - Wikipedia bahasa Indonesia
4	Universitas Hang Tuah	Universitas 17 Agustus 1945 Surabaya
5	UNAIR Universitas Airlangga	Universitas Wijaya Kusuma Surabaya
6	Website Universitas Negeri Surabaya	Selamat Datang di Situs FIK Universitas Muhammadiyah
7	Daftar Universitas -- Universities: Data Information	Universitas Hang Tuah
8	Welcome to the Frontpage	Universitas Surabaya - UBAYA - To Be The First University
9	Perguruan Tinggi Swasta.: Halaman Depan	Teknik Industri Universitas Surabaya - Home
10	Universitas 17 Agustus 1945 Surabaya	Universitas Ciputra - Creating World Class
11	UNIKA Widya Mandala Surabaya	Fak. Ekonomi
12	Yohnson	Akuntansi Universitas Surabaya
13	suarasurabaya.net - Tiga PTS di Surabaya Jadi Kampus Unggulan	Perpustakaan Universitas Airlangga Surabaya - Profil
14	Universitas Wijaya Putra Surabaya - Universitas di Indonesia	Universitas Wijaya Kusuma Surabaya ::
15	Unitomo Berprestasi	Peran Universitas di Surabaya dalam Meningkatkan Jumlah
16	American Corner Universitas Airlangga, Surabaya	SMK Negeri 5 Surabaya
17	REPUBLIK INDONESIA - TEKAN ANGKA KECELAKAAN	Perpustakaan Universitas Airlangga Surabaya - NONTON FILM
18	Republika Online - Dua Universitas Terbaik Dunia Pameran di Surabaya	Perpustakaan Universitas Surabaya
19	Dua Universitas Terbaik Dunia Pameran Di Surabaya	Republika Online - Dua Universitas Terbaik Dunia Pameran
20	Universitas Ciputra - Creating World Class	Profil Pendidikan.: Halaman Depan - www.surabaya.go.id

The table shows that some university names located in Surabaya appeared in the top lists, such as Universitas Surabaya, Universitas Wijaya Kusuma Surabaya, Universitas Negeri Surabaya, and Universitas 17 Agustus 1945 Surabaya. These universities used “Surabaya” as a part of their name (Universitas Surabaya and Universitas Negeri Surabaya) or as an additional part of their names (Universitas 17 Agustus 1945 Surabaya). Furthermore, the analysis of the web links, as depicted in Table 2, shows that the number of links to university sites are higher than the previous one.

Table 4. Web links of “universitas di Surabaya”

Search words	Google		Yahoo	
	University related sites	homepage	University related sites	homepage
Universitas di Surabaya	13 (65%)	11 (55%)	15 (75%)	9 (45%)

As previously stated, the number of universities in Surabaya is currently 26 institutions (EPSBED, 2009). It means some of them are not accessible though there are meet the search-words. Table 5 presents which universities links obtained from Google and Yahoo search, within all universities in Surabaya. The URL address for each university was searched through Yahoo search.

Table 5. Links from search result “universitas di Surabaya”

No	University	URL	Google	Yahoo
1	Univeristas Katolik Darma Cendika	www.ukdc.ac.id		
2	Universitas 17 Agustus 1945 Surabaya	www.untag-sby.ac.id	1	1
3	Universitas 45 Surabaya	-		
4	Universitas Airlangga	www.unair.ac.id	1	
5	Universitas Bhayangkara Surabaya	www.ubhara.ac.id		
6	Universitas Ciputra Surabaya	www.ciputra.ac.id	1	1
7	Universitas Dr Soetomo	www.unitomo.ac.id	1	
8	Universitas Hang Tuah	www.hangtuah.ac.id	1	1
9	Universitas Kartini	-		
10	Universitas Katolik Widya Mandala Surabaya	www.wima.ac.id	1	
11	Universitas Kristen Petra	www.petra.ac.id	1	1
12	Universitas Merdeka Surabaya	-		
13	Universitas Muhammadiyah Surabaya	www.umsurabaya.ac.id		1
14	Universitas Narotama	www.narotama.ac.id	1	
15	Universitas Negeri Surabaya	www.unesa.ac.id	1	1
16	Universitas Pelita Harapan Surabaya	www.uphsurabaya.ac.id		
17	Universitas Pembangunan Nasional Veteran Jatim	www.upnjatim.ac.id		
18	Universitas PGRI Adi Buana	www.unipasby.ac.id		
19	Universitas Surabaya	www.ubaya.ac.id	1	1
20	Universitas Teknologi Surabaya	-		
21	Universitas Tri Tunggal	universitastritunggalsurabaya.com		
22	Universitas W R Supratman	-		
23	Universitas Widya Kartika	www.widyakartika.ac.id		
24	Universitas Wijaya Kusuma Surabaya	www.wijayakusumasby.ac.id	1	1
25	Universitas Wijaya Putra	www.wijayaputra.ac.id		
26	Universitas Yos Sudarso	-		
	Total	20	11	8

Source: University names extracted from EPSBED website

Table 5 shows that 6 (23%) of those universities do not own web domains. Therefore, it is reasonable that their links did not appeared in the top 20 links.

Furthermore, the third Internet search was performed using search-words "kuliah teknik industri", and the results are presented in Table 6.

Table 6. Search result with search-words "kuliah teknik industri"

No	Google result	Yahoo result
1	MANAGEMENT SYSTEM DESIGN	Jurusan Teknik Industri FT-Unand
2	SATUAN ACARA PERKULIAHAN MATA	Teknik industri - Wikipedia bahasa Indonesia
3	JADWAL KULIAH TEKNIK INDUSTRI UAI	Fakultas Teknologi Industri Universitas Islam
4	Jadwal Kuliah Semester Padat 2007 Teknik Industri	Selamat Datang di Situs FTUB
5	Fakultas Teknologi Industri Universitas Islam	Jadwal Kuliah Jurusan Teknik Industri
6	Forum Mahasiswa Teknik Industri UNS	Teknik Industri
7	Teknik Industri ITB » Program Sarjana (S1)	Program Studi Teknik Industri
8	Program Studi Teknik Industri	Program Studi Teknik Industri
9	SILABUS MATA KULIAH Program Studi : Teknik Industri	Teknik Industri
10	UNPAR Teknologi Industri > Teknik Industri	kuliah " Systems Thinking
11	Selamat Datang di Situs FTUB	kulon: Teknik Industri
12	JADWAL KULIAH SEMESTER GENAP 2008/9	PEDOMAN PELAKSANAAN PENDIDIKAN
13	Jadwal Kuliah Jurusan Teknik Industri	TEKNIK INDUSTRI
14	SATUAN ACARA PERKULIAHAN MATA KULIAH INDUSTRI KIMIA	KRS Online - Teknik Industri, Undip
15	kulon: Teknik Industri	Program Studi Teknik Industri
16	jual komik & novel bekas (new update list)	Teknik Industri ITB " Program Sarjana (S1)
17	Jurusan Teknik Industri FTI-ITS	Selamat Datang di Teknik Industri UNS
18	ISTP: Teknik Industri dan Manajemen Industri	JURUSAN : TEKNIK INDUSTRI
19	Depan: Teknik Industri	Akademi Tehnik Mesin Industri Surakarta
20	Reka Mediatama - Jurusan Studi Teknik Industri	Program Studi Teknik Industri: Kurikulum

The table shows that "Teknik Industri" is found in most of the links. The word "kuliah" refers to jadwal kuliah, dan mata kuliah. Further analysis of the links obtained shows that most of them are related to university websites. However, only 15% in Google, and 70% in Yahoo are likely to be relevant information as expected by the prospective student (Table 7). Relevant is defined that the link provides information about a study program.

Table 7. Web links of "kuliah teknik industri"

Search words	Google		Yahoo	
	University related sites	relevant	University related sites	relevant
kuliah teknik industri	16 (80%)	3 (15%)	17 (85%)	14 (70%)

Secondary data from EPSBED, as shown in Table 8, indicate that there are 252 study programs in Teknik Industri, among them 222 are for S-1 degree.

Table 8. Industrial Engineering programs in Indonesia

Study program	S-3	S-2	S-1	D-3
Teknik & Manajemen Industri	1	1		
Teknik Industri		12	222	16
Total	252			

Source: EPSBED (2009)

As described in the method section, the third step is a content analysis. The analysis was performed for three websites selected from 26 university websites with a personal judgment. These are the three universities:

1. Universitas Surabaya (www.ubaya.ac.id) as the name indicate the close match of search-words “universitas di Surabaya” and it appeared in both Google and Yahoo
2. Universitas Hang Tuah (www.hangtuah.ac.id) as the name does not explicitly include Surabaya, but it appears in the result from both search engines
3. Universitas Katolik Darma Cendika (www.ukdc.ac.id) as one of universities that did not appeared in both search engine.

From Universitas Surabaya website, 10 pages covering homepage and admission information were analyzed. The term “kuliah” appeared in the following context:

- § satu tahun pertama perkuliahan
- § selama masa perkuliahan
- § menjelang awal perkuliahan

From Universitas Hang Tuah website, two pages covering the homepage and admission were analyzed. Similarly, the term “kuliah” appeared in the following context:

- § informasi berkaitan dengan perkuliahan
- § biaya kuliah

These findings indicate that the term ‘kuliah’ is formally and commonly used to refer mata kuliah, ruang kuliah, perkuliahan (learning activity), and biaya kuliah.

Website of Universitas Katolik Darma Cendika did not present admission related pages. Alternatively, university profiles and study program related pages are analyzed. In addition to the previous formal meaning of kuliah, this site present a less formal meaning in the following context:

- § semenjak kuliah
- § pelajaran berharga yang tidak di ajarkan di ruang kuliah
- § pacaran semasa kuliah
- § serius dalam kuliah
- § tidak didapat bangku kuliah

This context seems closed to the term used by students or prospective students. Those terms appears not in formal term, but in the journalism style reporting the experience as well as opinion of the University’s Rektor.

Conclusion

Overall, the findings emphasize that mismatch between the terms used by audiences and those presented in the web content could reduce the accessibility of the website. The findings could be used as an initial guideline to analyze and improve university web contents. This study suggests the person in charge for university web sites to be more intensive applying usability principles to make their websites accessible and usable to intended audiences, such as prospective students.

The findings of this study should be interpreted within some limitations. This study was aimed to provide an empirical evidence to increase awareness regarding the accessibility of university web content, rather than to present rigorous a web content analysis. The analysis has been focused for a

limited number of search-word. Further study could be conducted to analyze web contents in more details.

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