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EXPLORING THE PREFERABLE KEYBOARD TO DESIGN THE CHAM FONTS FOR WINDOWN AND MACINTOSH
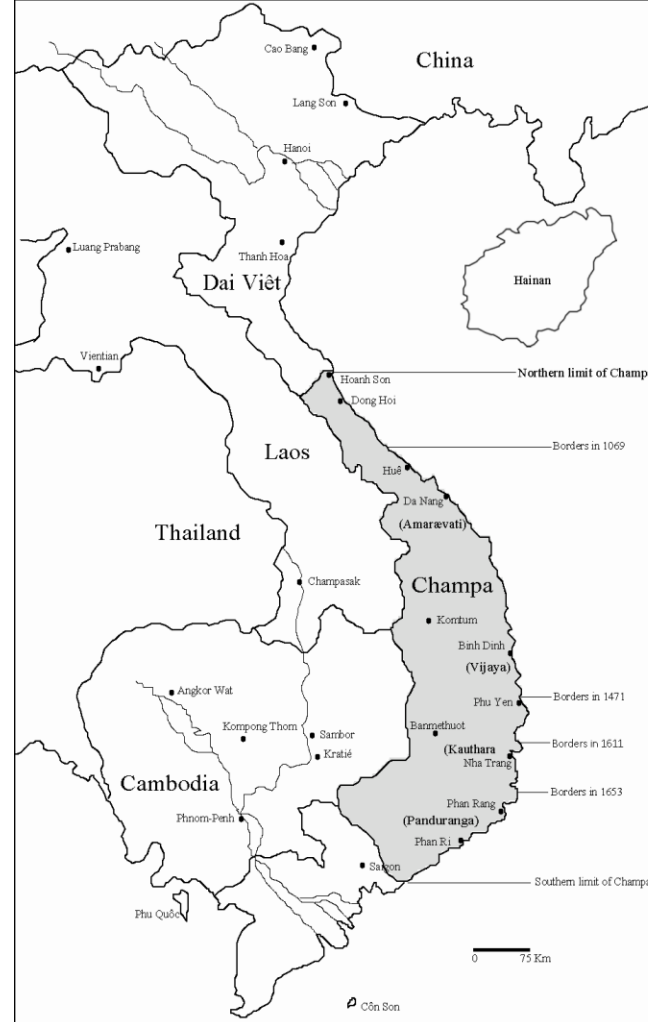
Bahasa Melayu Campa

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Dr. Noor Dayana Abd Halim

INTRODUCTION

- Champa was established in the 2nd century in central Vietnam. (Coedes, 1939). The Melayu Champa is indigenous people of the Champa kingdom.

- The Cham people who are now the ethnic minority in Vietnam.

- Cham language is a group of Austronesian. Therefore Cham language is close relationship with Malay language(Coedes, 1939; Lafont, 2011).

- Cham Script inscriptions appear on *Dong Yen Chau* stone stele (Tra Kieu) in 4th century and the Cham are using this script system until today. (Lafont, 2011)
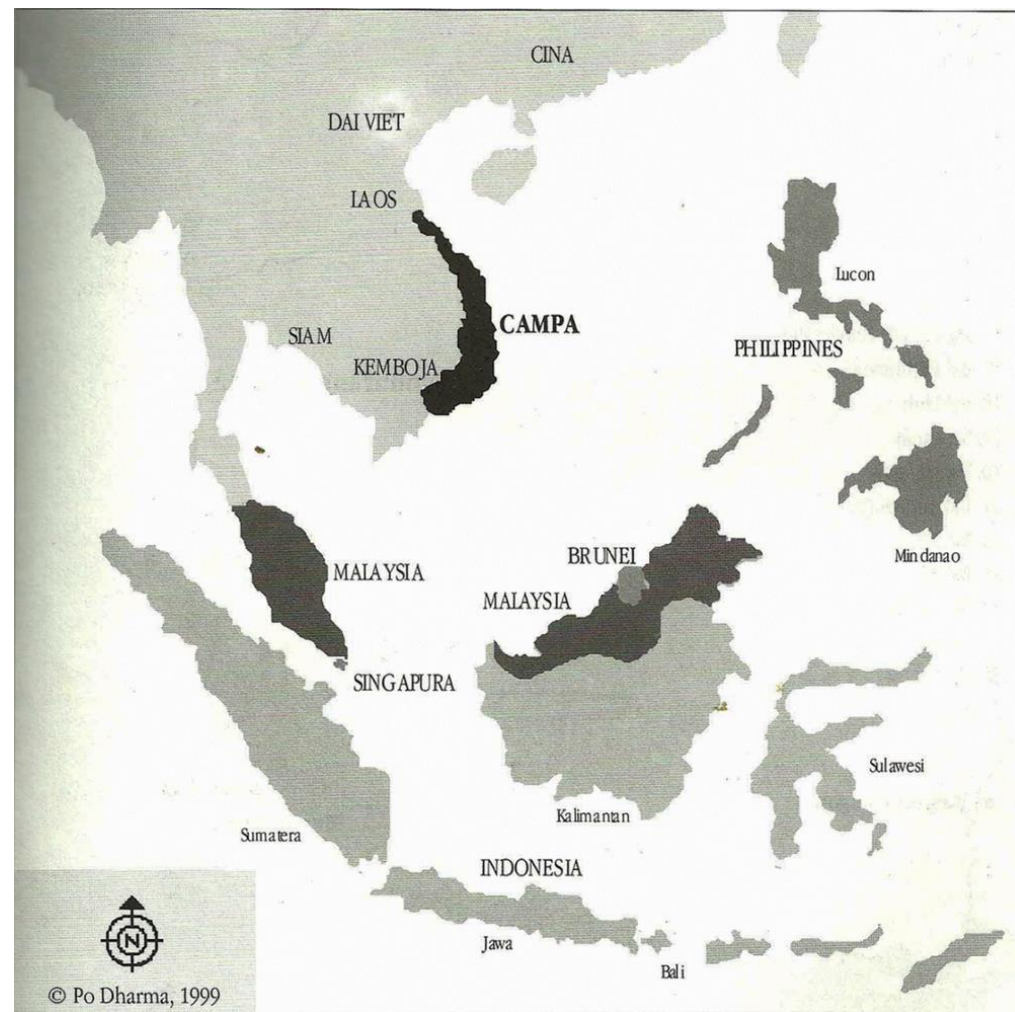
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CHAMPA AND DAI VIET

Sources: Danny Wong Tze Ken, *The Nguyen and Champa during 17th and 18th Century: A Study of Nguyen Foreign Relations*, Paris-San Jose: International Office of Champa (IOC-Champa), Champaka, Monograph 5, 2007, p.192

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CHAMPA AND THE MALAY WORLD

Sources: G.Moussay and Duong Tan Thi, Peribahasa Cam-Dictons and Proverbes Cam.

Kuala Lumpur: Kementerian Kebudayaan, Kesenian dan Pelancongan Malaysia & EFEO, 2002, p.13

- The Cham script was systems from the Sanskrit alphabet in southern India.

- Cham people have used Indian Sanskrit and then they have improved this Sanskrit completely and become the Cham script.

- In Vietnam, some organizations and individuals have created a number of Cham fonts to support for compilation of Cham documents.

- These Cham fonts are designed on Unicode standard; however assigning characters (code points) to represent a character or diacritics of Cham language is slightly different.

- This is disadvantages for using and storage of Cham documents.

OBJECTIVE

- For this research, we propose a solutions to survey the keyboard platform and design Cham fonts for Windows and Macintosh.

- Research questions are as follows:
  - What is the choice of platform that should be created for Cham fonts?
  - What is the level acceptance of the Cham font in term of use, convenience, and quality?

METHODOLOGY

Research was implemented using a quantitative and the application was developed using ADDIE model.

Cham Font Analysis

The total numbers of Akhar Thrah characters: 86

Removing some duplicated characters, such as H, i, o, and r, respectively (H and 1)= "1", (i and 3)= "3", (o and 5)= "5", (r and 6)= "r".

The total number of characters that needed to be designed: 82

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Table 1. Total Cham font characters to create

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Cham Font Design

Number of characters are designed: 82.

Added seven new punctuation characters: ', ", :, •, ?, (,).

Total number of characters that needed to be designed was 90

Table 2. Code point values corresponding to each Cham script character

Ke	Uni	Cam	Key	Uni	Cam	Ke	Uni	Cam
0	0030		R	0052		p	0070	
2	0032		S	0053		q	0071	
4	0034		T	0054		r	0072	
7	0037		U	0055		s	0073	
8	0038		V	0056		t	0074	
9	0039		W	0057		u	0075	
:	003A		X	0058		v	0076	
;	003B		Y	0059		w	0077	
<	003C		Z	005A		x	0078	
=	003D		[	005B		y	0079	
>	003E		\	005C		z	007A	
?	003F		]	005D		{	007B	
@	0040		^	005E		|	007C	
A	0041		_	005F		}	007D	
B	0042		`	0060		~	007E	

C	0043		a	0061		!	0021	
D	0044		b	0062		"	0022	
E	0045		c	0063		#	0023	
F	0046		d	0064		$	0024	
G	0047		e	0065		%	0025	
H	0048		f	0066		&	0026	
I	0049		g	0067		'	0027	
J	004A		h	0068		(	0028	
K	004B		i	0069		)	0029	
L	004C		j	006A		*	002A	
M	004D		k	006B		+	002B	
N	004E		l	006C		,	002C	
O	004F		m	006D		-	002D	
P	0050		n	006E		.	002E	
Q	0051		o	006F		/	002F	

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Cham Font Development

These fonts designed based on Cham dictionary and Unicode.

Three Cham fonts: EFEO Panrang, EFEO Panrik, and EFEO Udong.

Typeface of EFEO Panrang is designed based on Moussay's Cham-Vietnamese-French dictionary.

Figure 1: Code point location of EFEO Panrang

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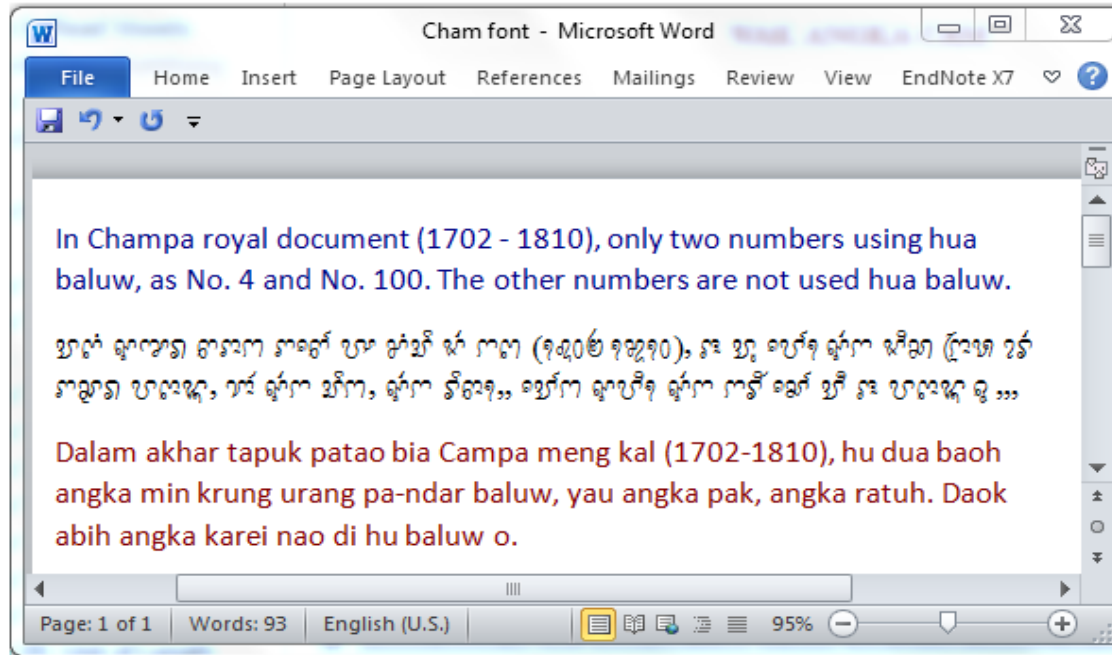The Times New Roman and EFEO Panrang in Microsoft Word document

Figure 2: Times New Roman and EFEO Panrang in MS Word document

EXPERIMENTS

Exploring the Preferable Keyboard Platform

RQ: What is the choice of platform that should be created for Cham fonts?

Table 3. Choice of keyboard platform via online questionnaire

Item	Agreed	Disagreed	Missing	Total
Macintosh platform	114 (69.9%)	49 (30.1%)	37 (0%)	200 (100%)
Windows platform	161 (95.8%)	7 (4.2%)	32 (0%)	200 (100%)

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EXPERIMENTS (cont.)

Acceptance Level from Respondents

Table 4: The level acceptance of new Cham font

No.	Item	Agree	Strongly Agree	Total
1	These Cham fonts display text clearly on Internet Explorer	35 (64.81%)	19 (35.19%)	54 (100%)
2	These Cham font display text clearly on Mozilla Firefox	35 (64.81%)	19 (35.19%)	54 (100%)
3	These Cham font display text clearly on Google Chrome	34 (62.96%)	20 (37.04%)	54 (100%)
4	Cham font character position run perfectly on Windows	19 (35.19%)	35 (64.81%)	54 (100%)
5	Cham font character position on keyboard are easy to use	23 (42.59%)	31 (57.41%)	54 (100%)
6	The Cham font size is similar with the Time New Roman font size	18 (33.33%)	36 (66.67%)	54 (100%)

Table 5.8: Number of respondents and total score for Cham font

Number of respondents	Total score
10	30
4	29
5	28
18	27
1	26
4	25
12	24

Table 5.9: Categories of total score for Cham font

Categories	Total score
Not Accepted	6–18
Accepted	19–30

Based on Table 5.8 and Table 5.9, it can be concluded that all 54 respondents (100%) accepted the new Cham font.

Acceptance Level from Experts

Table 7: Threshold Value and Percentage Consensus by Experts

The threshold (dm, n) for each item based on the expertise and the experts' percentage consensus (d ≤ 0.2) for all six items was 100%, more than the required value of 75%.

The value of d for the total construct is 0.08 (required d ≤ 0.2).

Thus, it can be concluded that all sixteen experts have come to a consensus that the Cham font is acceptable.

Experts	Items					
	I1	**I2**	**I3**	**I4**	**I5**	**I6**
1	0.05	0.05	0.05	0.038	0.125	0.05
2	0.05	0.05	0.05	0.038	0.075	0.05
3	0.05	0.05	0.05	0.038	0.075	0.05
4	0.05	0.05	0.05	0.038	0.125	0.15
5	0.15	0.15	0.15	0.038	0.075	0.05
6	0.05	0.05	0.05	0.163	0.125	0.05
7	0.15	0.15	0.15	0.038	0.075	0.05
8	0.05	0.05	0.05	0.163	0.075	0.05
9	0.05	0.05	0.05	0.038	0.075	0.15
10	0.05	0.05	0.05	0.038	0.125	0.15
11	0.15	0.15	0.15	0.163	0.075	0.05
12	0.05	0.05	0.05	0.038	0.125	0.05
13	0.05	0.05	0.05	0.038	0.075	0.05
14	0.05	0.05	0.05	0.038	0.075	0.05
15	0.15	0.15	0.15	0.038	0.125	0.15
16	0.05	0.05	0.05	0.038	0.075	0.05
Frequency d ≤ 2	16.00	16.00	16.00	16.00	16.00	16.00
Percentage item d ≤ 2	100%	100%	100%	100%	100%	100%
d value for total construct	0.08					

RESULTS

The three Cham fonts:
- EFEO Panrang (99.28%)
- EFEO Panrik (99.98%)
- EFEO Udong (99.80%)

Table 8. The Cham font survey results

	EFEO Panrang	EFEO Panrik	EFEO Udong
Not Accepted	0%	0%	0%
Almost	0.71%	0.02%	0.20%
Accepted	99.29%	99.98%	99.80%

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CONCLUSIONS

Cham fonts have design based on Unicode and using for both Macintosh and Windows platform.

Cham fonts: EFEO Panrang, EFEO Panrik, EFEO Udong are easy to use and the Cham font size similar to Times New Roman.

These Cham fonts to bring significant benefits for the Cham community and will be useful in learning and teaching the Cham language.

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Thanks for listening

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