



Empowering the Teaching of Malaysian Indigenous Language via Knowledge Sharing

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Abstract

It is always a great challenge for a teacher to sustain the interest of the indigenous students and getting to know them by using their language could help. However, very minimal teaching resources are documented and available for the usage of the indigenous language educators. Each educator are knowledgeable about the language and its teaching. By sharing their knowledge over a suitable platform, they could learn from each other on how to sustain the students' interest and also the language itself. In Malaysia, primary school teachers, who are teaching Bahasa Semai, one of the indigenous languages that exist in Malaysia, could be assisted with computing technology that will allow them to specifically share their knowledge about Bahasa Semai and how to teach it. The purpose of this paper is to highlight the functionalities needed in developing a portal that could assist in teaching Bahasa Semai. Agile development methodology was adopted in developing the portal. Upon completion of the development, potential users, who are Bahasa Semai educators and coordinator were interviewed and they were positively satisfied with the end result. The portal will be available online upon the completion of its second cycle and should be able to give great benefit to educators, students and coordinator.

Keywords: indigenous language, knowledge sharing, portal, Bahasa Semai.

1. Introduction

Indigenous people or Orang Asli is the minority people in Malaysia. According to International Work Group for Indigenous Affairs, the indigenous peoples of Malaysia represented around 12% of the 28.6 million population in 2014. The indigenous people population could be categorize into 3 major ethnic groups which comprises of different tribes that is uniquely differ by culture and language. According to [13], there are Senoi, Semang and Proto Malay. Figure 1 shows the distribution of Orang Asli by ethnic in Peninsula Malaysia [18]. Orang Asli language could be classified into Aslian and Proto-

Malay. [15] discovered that the Aslian languages form a branch of the Mon-Khmer language family and geographically range through most of the Malay Peninsula. Bahasa Semai that is conversed by the Semai ethnic group belongs to the Aslian language. The language is remain the purest and widely use in comparison with other indigenous language used by Malaysian Orang Asli.



Figure 1: Distribution of Orang Asli Population in Peninsula Malaysia.

Electives languages that vary from Tamil, Chinese, Iban, KadazanDusun and Bahasa Semai were being introduced to primary schools students at standard 3, 4, 5 and 6, under Malaysian Kurikulum Standard Sekolah Rendah (KSSR) program. By 2001, the Pahang and Perak states had 24 schools that taught Bahasa Semai, with 41 trained teachers plus 19 more resource teachers and in 2014, the number had grown to 28 [7]. With an overall lower level of participation in education by Orang Asli student in comparison with non Orang Asli student in this country, the engagement or participation in Bahasa Semai class is important for Orang Asli students. Hence, Malaysian Ministry of Education (MOE) under the Ethnic Language Department not only offer Bahasa Semai but also trained the teachers to understand the language in detail and developed a proper teaching syllabus which tally with the educational structure. There is also an effort to document the language for easy reference. It is relevant to support the educators in having a deeper understanding regarding the Semai language subject in order to improve the teaching of the subject and hence, improves the Orang Asli students' performances.

With the current problems in Orang Asli education, it would be more efficient for the small yet growing number of Bahasa Semai educators to share the reference and their knowledge in teaching the language among each other's. In order to share, they may leverage on the recent web portal and knowledge sharing technologies. The usage of a portal will improve the educator's Bahasa Semai skills as well as tips that could attract student attention in class. This paper aims to create a portal that could offer assistance in information and knowledge sharing, exclusively among Bahasa Semai educators and discover any significant functionality towards sustaining Bahasa Semai language.

2. Literature Review

A. Orang Asli Education in Malaysia & Its Problem

Education is being utilized by the Malaysian Government to improve Orang Asli life. [10] highlighted that the effort to ensure Orang Asli life is improved through proper education assistance was conducted by having Jabatan Kemajuan Orang Asli (JAKOA), a department that has been entrusted by the Ministry of Rural and Regional Development, with the authority to manage Malaysian Orang Asli educational related matters. [17] Suggested that introducing ethnic language into education system is one way on how a language can be sustained and preserved from being extinct. By introducing an approach that will sustain their language, it is hope that it will help in sustaining their interest towards education.

With numerous efforts that educate on the importance of education and supports towards it, Orang Asli schools attendance and their achievements until tertiary education is still arguable. There has been an improvement in the level of awareness on the significance of going to schools among Orang Asli students. However, the number of Orang Asli students who dropped schools and did not finish their education at least until the end of secondary schools are still very high and poverty is the main reason why this is happening [11]. Orang Asli that still practice nomad lifestyle are struggling with high level of poverty but with the assistance of Federal Land Development Authority (FELDA) and Rubber Industry Smallholders Development Authority (RISDA), many of them have reduced their poverty level. Orang Asli students also dropped schools when schools did not attract

them due to bully or issues with other students because of their differences. Apart from that, teachers did not understand their differences as the Orang Asli were a slow learner because they did not receive full exposure as compared to the others [11].

B. Empowering Orang Asli Teacher with Computing Technology

In teaching, having fundamental knowledge of the subjects is very important. Pedagogical Content Knowledge methodology that has been enforced by MOE to all teachers highlighted that it is necessary for teachers to have depth of knowledge in the subjects that they teach in school. By leveraging on computing technology, teacher will be able to understand their subject better and also improvise on their teaching skills. Through technology, teachers can get access to new knowledge, tools and teaching methods that will help them during the teaching process [14]. Apart from that, [8] highlighted that computing technology have proven to be a great help to teachers in getting deeper knowledge and learning new teaching techniques to be implemented in schools. One of the available computing technology is portal. Portal is a term for a World Wide Web site that is or proposes to be a major starting site for users when they get connected to the Web or that users tend to visit as an anchor site [12]. The most important functionality of portal is their ability to synchronize and support knowledge development phase, which includes knowledge sharing [3]. A portal is suggested to achieve the objective of knowledge sharing and provide a communication platform for all teachers that teach Bahasa Semai in schools. The portal is developed to encourage the knowledge sharing for example, sharing teaching methods with other teachers and to provide the teachers with a computing technology that can be a trusted sources for them to refer and sustain for longer period. A teacher is a knowledge worker that possesses knowledge of a certain matters or area. [16] said that the knowledge that they have, automatically made them as the center of knowledge that has the ability to analyze, understand and share the knowledge to other people. The portal could also archive the Bahasa Semai language and its teaching. The originality and sustainability of Bahasa Semai is important as the language is one of the oldest Aslian languages and it reflects the Senoi group identity. Bahasa Semai cannot be found in any written document as it is only speak and practice through orally and passed from generations to generations [4]. This portal will help the teachers in mastering the language; hence making sure the language originality is preserved through the correct methods in using it and formal learning in schools.

Other ethnic language like Maori, the New Zealand native language did have their own website to promote their ethnic and language. Similarly, UNESCO and University of West Indies Language Unit, had launched Caribbean Indigenous and Endangered Languages (CIEL) at <http://www.caribbeanlanguages.org.jm/>. The objectives are to showcases and promotes the preservation of over 20 indigenous languages in the

Caribbean. For a more specific group, Gathang Community Portal, an indigenous language portal is available at <http://www.firstvoices.com/en/Gathang>. It strives to expose the information regarding their community to the world, connecting the past, present and future for all their Aboriginal people by acknowledging and documenting the language of the Birrbay, Guringay and Warrimay of Australia people. Another portal that is relevant to the teaching and preservation of indigenous language is <http://indigenous.sl.nsw.gov.au/>. It is developed under the initiative of The Rediscovering Indigenous Languages project that aims to make accessible the rich archival collections of the State Library of New South Wales. The site features historic word lists, records and other documents relating to Indigenous Australian languages.

Locally, Bahasa Iban, which being practice by people in Borneo also owned a portal, bhsiban.wordpress.com that is created by the committee of Bahasa Iban, for the usage of teachers in schools. The website allows Bahasa Iban teaching team to share syllabus and teaching materials. The internet allows people to share their language. Thus, strengthen the efforts of sustaining the ethnic language so that everyone would know about an ethnic existence and their identity [5]. Apart from that, it will allow teacher to share or record their teaching experience in better understanding and teaching the Orang Asli students. It is worth to highlight that most of the highlighted websites are sharing their ethnic language and culture to the public. However, in this paper, the portal is created exclusively for teaching team of Bahasa Semai to strengthen their teaching skills by sharing the teaching materials. It is also significant to have the portal due to the existence of the online Semai dictionary, which is not available elsewhere.

3. Methods

Agile methodology was adopted for this project in outlining what need to be done and how should it be done towards project success. Agile methodology allows iteration especially in fixing any errors during development stage. By referring to Figure 2, Agile methodology could be segregate into few cycles and development.



Figure 2: Agile Methodology [6]

The project was split into two cycles and the first cycle included four developments. The project was initiated in 2015. At the initial phase, user requirements were gathered from the Bahasa Semai teachers and the coordinator of the Ethnic Language Department under the Ministry of Education (MOE). The portal need to be maintained by administrator and should allow functionalities access only for its targeted or registered user, who are the Coordinator that coordinate the teaching of Bahasa Semai in Malaysia and teachers that teach Bahasa Semai in schools all over Malaysia. Thus, there are 3 type of access- administrator, registered user (coordinator & teacher) and public guest. The portal includes functions that allow log in and log out to the portal, access to Bahasa Semai dictionary, upload and download of materials, view user profiles and join discussion room. Registered user will be able to access all functions mentioned earlier but public guest should be able to view the main page only. This portal exclusively includes a database that store basic Bahasa Semai words for Dictionary function. The basic functionalities of a portal were constructed by using Bootstrap and XAMPP; and CSS, PHP, HTML and JavaScript.

Upon the completion of development 1, function integration and testing were conducted. The project faced problem in integrating the dictionary database and updating conversation in discussion. Once the problems in development 1 were resolved, the project continued with development 2 to include variety of files to be shared over the portal. A few file formats could be uploaded and downloaded via the portal. During development 3, the portal was not able to make available to the web. At the end of the development,

the user feedbacks were gathered through interview and observation. The same coordinator and set of teachers were involved in user requirement and user feedback session. With the

feedback provided by the user, the project is currently being improvised in Cycle 2.

4. Results

A. User Requirements

Apart from collecting inputs on any similar computing technology development for indigenous language, teachers who teach Bahasa Semai in selected schools, within the district of Perak Tengah were consulted in understanding process of the teaching and learning of Bahasa Semai; and the need of having computing technology in supporting those activities. They highlighted on the significance of having trusted reference materials that are accessible when they are on the move. In line to that, the Coordinator from the Ethnic Language Department under the Ministry of Education (MOE) also highlighted the need to communicate with teachers and share on knowledge regarding the teaching of Bahasa Semai [2].

B. Portal Development

After the collection of user requirement, portal design was constructed and developed. The Main Page (as in Figure 3) of this portal comprises of a brief introduction on indigenous language, latest news or event update on Bahasa Semai teachings and access page for registered user. About Us shares the contact details of the administrator of the portal. The Main Page also includes Useful links, relevant to indigenous community and Bahasa Semai teachings. Public user will be able to access the Main Page only.



Figure 3: Main Page

Registered User

Registered User for this portal includes the teachers who are teaching Bahasa Semai and the coordinator of Ethnic Language Department. For registered user, they will be able to access the core functionalities of the portal, which are the profile setting,

dictionary search, upload and download files; and discussion among Registered User. Upon self registration at the Main Page, Registered User should be able to register (as in Figure 4) and change their personal details by using the Profile function.

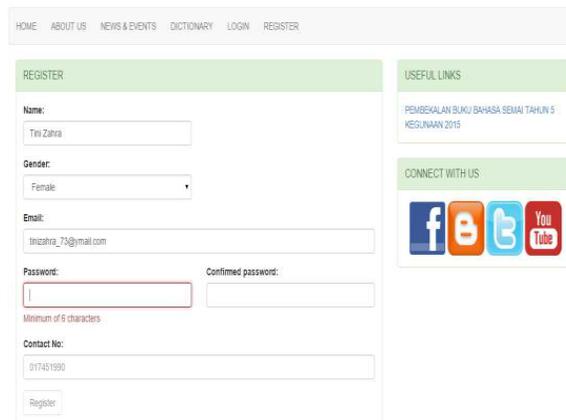


Figure 4 Register Page

DICTIONARY

Engrok Peninjam
Nombor
Genanti Muh
Kamus Semai-Bahasa Melayu

Show entries
Search:

BM		Semai
Dua (2)		Nar
Empat (4)		Empat
Enam (6)		Enam
Lapan (8)		Lapan
Lima (5)		Lima
Satu (1)		Nanek
Sembilan (9)		Sembilan
Sepuluh (10)		Sepuluh
Tiga (3)		Nik
Tujuh (7)		Tujuh

Showing 1 to 10 of 10 entries

Previous
1
Next

Figure 5 Dictionary Page

With the non-existence of an online written dictionary available to search for Bahasa Semai word definition, the portal include a simple dictionary function (as in Figure 5) that allow user to search for Bahasa Semai word and its Malay translation by using the filtered search or looking from categories such as Engrok Peninjam, Nombor, Genanti MuhPublic Files Sharing page (as in Figure 6) enables the Registered Users to view and download all uploaded material shared by the user. The Registered User may upload documents in PDF and Microsoft Words format to the portal library via the My Upload/Download Files function. Thus, the registered user will be able to share not only syllabus, teaching materials and also documents generated from their monthly or yearly meeting.

HOME ABOUT US NEWS & EVENTS DICTIONARY

PUBLIC FILES SHARING

Show entries Search:

#	Name	Uploaded By
1	linguistic.pdf	Rasia Yas
1	moe bhs semai.pdf	Rasia Yas
1	E-Semai Teaching Portal (ESTP).pdf	user1

Showing 1 to 3 of 3 entries Previous Next

USER MENU

- Profile
- My Upload/Download Files
- Public Files Sharing
- Discussion Room
- Logout

USEFUL LINKS

PEMBEKALAN BUKU BAHASA SEMAI TAHUN 5

Figure 6 Public Files Sharing Page

Apart from that, Discussion Room page (as in Figure 7) is also available for the Registered User. Discussion Room is for the teachers and coordinators to share and discuss any

matters regarding the teaching of Bahasa Semai. The discussion can be both; in real time via chatting and also archived.

HOME ABOUT US NEWS & EVENTS DICTIONARY

DISCUSSION ROOM

My feed All posts Search Log in

Start a new topic...

- Channels
 - General
- Online 1
 - +1 anonymous

- nodame arowien 5w in General
Mesyuarat Bulanan
- nodame arowien 7w in General
about bhs semai
- nodame arowien 7w in General
new topic
- nodame arowien 7w in General 2
topic 1

USER MENU

- Profile
- My Upload/Download Files
- Public Files Sharing
- Discussion Room
- Logout

USEFUL LINKS

PEMBEKALAN BUKU BAHASA SEMAI TAHUN 5 KEGUNAAN 2015

Figure 7 Discussion Room Page

The administrator access allows the user to administer the portal. The administrator could be one of the users from the registered user. Administrator may add or delete new user, manage

uploaded files, monitor discussion room and also add or delete the existing Bahasa Semai Dictionary in the portal (as in Figure 8).

The screenshot displays the Administrator Access Page, divided into two main sections: 'DICTIONARY' and 'ADMIN MENU'.

DICTIONARY Section:

- Header: Engrok Peninjam, Nombor, Genanti Muh, Kamus Semai-Bahasa Melayu
- Input fields: BM, Semai, Imakne
- Buttons: Insert
- Display options: Show 10 entries, Search: [input field]
- Table:

BM	Semai	Imakne	Action
Adu	Adu	Engrok Kerja	Delete
Imi	semai	imakne	Delete
buat	beh	Engrok Kerja	Delete

Showing 1 to 3 of 3 entries. Navigation: Previous 1 Next

ADMIN MENU Section:

- Admin Profile
- Manage Users
- Manage Dictionary
- Manage Uploaded Files
- Discussion Room
- Logout

USEFUL LINKS Section:

- PEMBEKALAN BUKU BAHASA SEMAI TAHUN 5 KEGUNAAN 2015

CONNECT WITH US Section:

- Facebook, Blogger, Twitter, YouTube icons

Figure 8 Administrator Access Page

C. Users' Acceptance & Feedback

User Acceptance testing was conducted with six teachers from two different schools in Perak Tengah area; Sekolah Kebangsaan Chenderong Kelubi, Tanjung Tualang and Sekolah Kebangsaan Ayer Denak, Tronoh. The test was conducted by meeting the teachers and asking them to respond to the test cases. Since the numbers of teachers who are teaching Bahasa Semai are not as many as the other subjects, observation was conducted when the teacher is using the portal and interview was conducted to further solicit their feedback. An open-ended questions was asked to the six teachers and based from the feedback received,

all developed functions matched with their earlier requirements. The Dictionary, Sharing and Discussion page complies to their needs. Apart from that, the results show;

- 6 out of 6 teachers agreed that the portal is a good system that can help them in sharing information in teaching Bahasa Semai subject.
- 6 out of 6 teachers voted three most significant needs in the portal is Introduction to Bahasa Semai page, Dictionary page and Discussion Room page.
- 5 out of 6 teachers said the portal could help them to learn and know better about Bahasa Semai.

- 1 teacher mentioned that since his first language is not Semai language, he could use Dictionary function in learning the language faster.

“This portal can help me in delivering Bahasa Semai subject in school because this language is not my first language”

(Bahasa Semai Teacher in Sekolah Kebangsaan Chenderong Kelubi, Tanjung Tualang)

Overall, positive feedback was received and the teachers also suggest few recommendations for the portal to make it better. Upon completing the recommendations, the portal will be made available for the teacher usage.

5. Conclusion

As a conclusion, the portal was successfully developed in assisting the sharing of information and knowledge among Bahasa Semai educators. In completing the portal, literature survey and interviews with the coordinators and educator were conducted. Bahasa Semai did not have any written dictionary available over the net or any portal to support the educators. Thus, we have identified that the portal must include Bahasa Semai dictionary, sharing material and discussion room functionalities. These functionalities could support the growth of idea in preserving Bahasa Semai through the knowledge sharing activities over the portal. The portal will also be a great assistance for teachers in finding reference during needed times. Bahasa Semai is not known to many people and the teachers that are teaching this subject in schools has no computing technology that can assist them in teaching and learning process. The portal can assist the teachers to share any knowledge regarding Bahasa Semai with each other's in a more convenient and structured ways. The portals' mobility and rich content is important for the teachers in getting the reference that they need. The continuity and appreciations towards the language also can be cultivated through the developed portal. It is relevant in making sure of the language continuity and originality is preserved. All in all, the portal will be a great help for teachers that teach the subject in schools and also can be a knowledge sharing platform among them and the Coordinators.

The portal should be made available for the usage of the educators over the web, once it is able to support other format of material to be shared, ie; video, games and PowerPoint slides. Instead of English, the portal could be available in Bahasa Malaysia and Bahasa Semai. Thus, educators may practice their Bahasa Semai and it will widen the language usage.

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References

- [1] Abdullah, R., Mamat, W. H. W., Zal, W. A., & Ibrahim, A. M. (2013). Teaching and Learning Problems of the Orang Asli Education: Students Perspective. *Asian Social Science*, 9(12), 118.
- [2] Alwi, A., Mehat, M. & Arshad, N.I (March 2016). E-Semai Teaching Portal (ESTP) – Preliminary Study in Assessing the Teaching of Bahasa Semai, *International Journal of Advances in Soft Computing and Its Application*, 8(1), 58-69.
- [3] Benbya, H., Passiante, G. & Belbaly, N. A. (2004). Corporate Portal: A Tool for Knowledge Management Synchronization, *International Journal of Information Management*, 24, 201–220
- [4] Boucher-Yip, E. F. (2004). Language Maintenance and Shift in One Semai Community in Peninsular Malaysia, Doctoral, University of Leicester (UK).
- [5] Cornell, S., & Hartmann, D. (2006). *Ethnicity and race: Making identities in a changing world*. Sage Publications.
- [6] Elezovic, E. (2012). *Agile Methodology*. Retrieved from <http://www.adfkickstart.com>
- [7] Ghani, Alias Abd. (2015). Revitalizing the Indigenous Semai Orang Asli Language in Malaysia. Retrieved from <http://apiar.org.au/?conference-paper=revitalizing-the-indigenous-semai-orang-asli-language-in-malaysia>
- [8] Hennessy, S., Harrison, D., & Wamakote, L. (2010). Teacher Factors Influencing Classroom use of ICT in Sub-Saharan Africa. *Itupale Online Journal of African Studies*, 2(1), 39-54.
- [9] International work group for indigenous affairs. (n.d). *Indigenous Peoples in Malaysia*. Retrieved from <http://www.iwgia.org/regions/asia/malaysia>
- [10] Kamaruddin, K. (2008). Educational Policy and Opportunities of Orang Asli: A Study on Indigenous People in Malaysia. *Journal of Human Resource & Adult Learning*, 4, 86-97.
- [11] Michael, E., & Chuen, E. M. (2012). Education and Health Awareness among Indigenous People: A Study in Perak, Malaysia. *ARNP Journal of Science Technology*, 2, 745-749.
- [12] Norlin, C. & Bliss, G. (2005). Portal, Retrieved from <http://whatis.techtarget.com/definition>
- [13] Nicholas, C. (2005). The Orang Asli: First on the Land, Last in the Plan. *The Bumiputera Policy: Dynamics and Dilemmas*, 21(1), 315-329.
- [14] Owston, R. D. (1997). The World Wide Web: A Technology to Enhance Teaching and Learning? *Educational Researcher*, 27-33.
- [15] Phillips, T. C. (2005). *Linguistic Comparison Of Semai Dialects*. Unpublished manuscript. Economic Planning Unit, Prime Minister's Department, Malaysia
- [16] Prensky, M. (2008). The Role of Technology. *Educational Technology*, 1-3.
- [17] Shaeffer, S. (2003). Language Development and Language Revitalisation: An Educational Imperative in Asia. In *Proceedings from the Conference on Language Development, Language Revitalization, and Multilingual Education in Minority Communities in Asia*. Retrieved from www.sil.org/asia/ldc/plenary_papers/sheldon_shaeffer.pdf
- [18] Vengadesan, M. (2009, April 26). In Danger of Dying out. Retrieved from <http://www.thestar.com.my/story/?file=/2009/4/26/lifefocus/3759480&sec=lifefocus>