[1]Clarence S. Ordonia

[2]Thelma D. Palaoag

E-Balikas: English to Ilocano Language Mobile Translator Application

Abstract: - The tourism sector relies primarily on communication. Both industry practitioners and tourists must be able to communicate using a medium that both parties can understand. The purpose of this study is to create a mobile application that provides an English to Ilocano language guide for tourists visiting Ilocos Norte. The e-Balikas mobile application delivers interactive Ilocano translations for popular English words such as essential expressions, directions and places, and emergency and safety needs. The descriptive-developmental approach was used in the study, which also embraced the concepts and practices of SCRUM as a framework for building the application. Usability testing was also carried out utilizing the USE tool to assess the application's usability and acceptability among identified tourists to Ilocos Norte via random sampling. The application enables responders to search and translate frequently used terms and phrases related to essential expressions, directions and places, and emergency and safety needs. Additional features include a visual of the word or phrase, along with the pronunciation, and audio playing to allow the user to hear the actual native speaker pronunciation. The respondents agreed that the objectives are met in terms of user friendliness, functionality, and portability. With an average mean of 4.53, it is assumed that the majority of respondents were "Very Satisfied" with the application. The e-Balikas application meets the respondents' needs for English to Ilocano translations and also improves the English to Ilocano language guides, and they were grateful for the benefit of information technology. Furthermore, the application performs as intended, with a high level of dependability and security. It is also adaptable enough to be readily installed and set on a wide range of devices and it adheres to established portability criteria.

Keywords: English to Ilokano, Mobile application, Mobile translator, Tourism

I. INTRODUCTION

Communication is a natural instinct in all living creatures. It is the essence of existence. It keeps the human relations machinery running properly. Every living thing needs to communicate among themselves and with others [1]. Tourists who are not from the area and are not proficient in the local dialect, in particular, need to improve communication with the residents. When attempting to speak with locals, tourists and individuals in general prefer verbal communication. Language is an essential element in communication, and it is difficult to achieve meaningful results without it [2, 3]. A language barrier can impede communication [4]. It is believed that reducing the language barrier can contribute to a more positive tourist experiences while exploring a locality [5].

With the advancement of technology, particularly the Internet, several opportunities for improving translation have arisen, with translators increasingly utilizing the Internet in their professions. According to [6,] mobile phone applications are developed with the explicit goal of aiding the speed and consistency of human translators, hence lowering total translation project costs while preserving contractual translator wages and an acceptable level of quality. Mobile translation applications are human or machine translations that are conducted on mobile devices or realized through apps that run on mobile systems [7]. A short search through the app stores today reveals a big number of translation apps that handle a wide range of languages.

A quick browse through the app stores today reveals a big number of translation apps that handle a wide range of languages. These programs' cost and functionality, like as speech-to-text choices and camera-based translation, allowed them to develop enormous popularity among users, particularly translators. Recent versions of these applications use more sophisticated technologies, such as augmented reality [8, 9, 10, 11], artificial intelligence and machine learning [12, 13], to improve their accuracy and functionality.

[1] MIT,Mariano Marcos State University,

[2] DIT, University of the Cordilleras

[1]csordonia@mmsu.edu.ph, [2]tpalaoag@gmail.com

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Tourists may benefit from the great capabilities of mobile applications in a simple and timely manner. A tool, such as a language guide, might assist tourists and locals communicate verbally and in writing. With the advent of mobile development technologies, a user-friendly electronic version of a language guide will undoubtedly facilitate teaching and learning while also helping tourists. The developer conducted this study with the communication needs of tourists in mind in order to produce an English to Ilocano Language Translator Application for tourists who may utilize a language guide while staying in the province of Ilocos Norte.

The developer created an Android application that can translate from English to Ilocano. The application can demonstrate appropriate pronunciation of widely spoken Ilocano words and phrases helpful for travelers, as well as display relevant graphics to assist the user. The words and phrases comprised fundamental Ilocano expressions, directions and places, and Ilocano emergency and safety needs on demand.

With a focus on language translation, this research can help the native region of Ilocos Norte's thriving tourism business. A smartphone may be thought of as an appropriate platform for such an application. Non-Ilocano-speaking visitors who visit the province with smartphones will have a tool that will allow them to communicate with local locals in their home language as well as study the basics of the Iluko on their own.

II. METHODOLOGY

This study used a descriptive-developmental approach, as well as the principles and practices of SCRUM as a methodology, to build the e-Balikas: English to Ilocano Language Mobile Application for tourists visiting the Ilocos Region.

The descriptive method was used because it accurately portrays the nature of the situation at the time of the investigation. It entails collecting data that characterizes events and then organizing, tabulating, depicting, and describing the data. In addition, it employs description as a technique for organizing data into patterns that arise during analysis

A. Population

The research invited the participation of Ilocos Norte tourists because they would be the ones who will continuously utilize the application. To determine the terms and phrases most commonly used by visitors visiting Ilocos Norte, the developer interviews the provincial tourism officer as well as tourism officers from various towns in Ilocos Norte, including Pagudpud, Bangui, Paoay, and Batac. The developer created a survey questionnaire based on the most commonly questioned words and phrases in terms of their fundamental expressions, directions and locations, and emergency and safety requirements.

Table 1. Respondents of the Study

Towns	Sample
Pagudpud	30
Bangui	30
Paoay	50
Batac	60
Total	**170**

These responders included both local and foreign visitors or tourists. According to the data, the vast majority of responders were of local origin. This is consistent with official data indicating that the bulk of visitors to Ilocos Norte are of local origin.

B. Sampling Method

A sampling method was used in which each member of a population had an equal chance of becoming a member of the sample. To carry out this sampling approach, the developer first established the population, then listed all of its members, and finally picked members to form the sample. The lottery sampling or fish bowl technique was used for this procedure. This approach includes selecting a sample at random from the sampling frame using random number tables. Each tourist on the master list was given a number. These numbers were written on paper and selected from a box; the procedure was repeated until the sample size was attained.

C. Development Tools

The developer utilized both private and open source technology to develop the system. The Android operating system and the Java programming language were utilized. The Eclipse IDE was also utilized as a tool in the development of the Java application. Similarly, the Android SDK and Android Virtual Device were deployed using the Windows Operating System. The developer utilized SQLite RDBMS for the database, Laravel Framework for the web server, and MySql for the database.

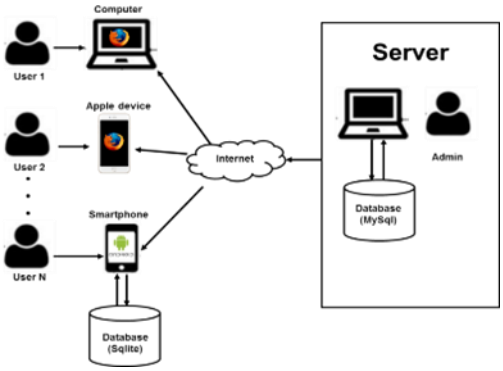

Figure. 1 System Architecture

Figure 1 depicts the system architecture of the English to Ilocano Language Mobile Application. It is essentially a two-tier client-server architecture with a front-end and a back-end. The user front-end is the interface through which users interact with the system. The front-end will display the user interface that is displayed by a locally installed program, such as the Android application, or, in the event of non-Android client devices, a conventional web browser. The Android-based front-end provides additional capabilities than its web browser-based equivalents, such as the ability to work offline. This demands the availability of a local database, as indicated in the figure, in order to save information on the client Android-based device.

The front end allows the user to make requests to the system's back end in a transparent manner. It comprises of a web server and a SQL database that is accessible online. The web server is used to publish or deploy material to the web for access by web-based clients, whilst the database serves as a central store of data for both Android and non-Android clients. These customers might be utilizing either the researcher's proprietary Android app or regular web browsers. An Internet connection connects the clients to the server.

III. RESULTS AND DISCUSSIONS

D. Features of the Application

The Home Screen is the initial interface that appears when the e-Balikas program is launched. Figure 2 depicts the web-based application, while Figure 3 depicts the mobile-based application.

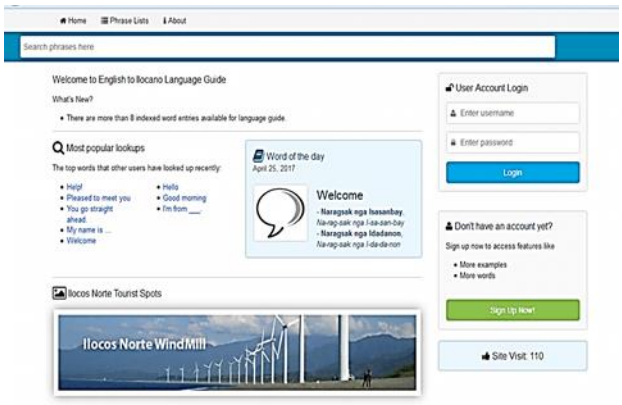

Figure 2. Web-based Application Home Screen

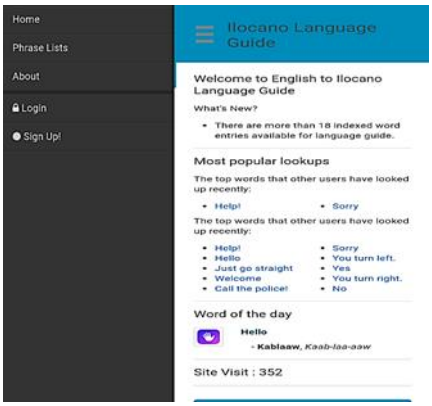

Figure 3. Mobile-based application Home Screen

Figure 2 depicts a web application with a menu on top and a search box. It also shows the most popular lookups, the word of the day, and the number of visitors to the site. While Figure 3 depicts the mobile application, it has a drawer to display the menu that will be presented on all application interfaces. When the user taps on the menu icon on the application's Home screen, the Application Main Menu appears. It is made up of a list of program functionalities in the form of menu items that the user may pick by tapping.

When the user selects the Phrase Lists item from the Application Main Menu, the list of categories interface appears, as illustrated in Figure 4. The mobile-based application list of categories is shown in Figure 5.

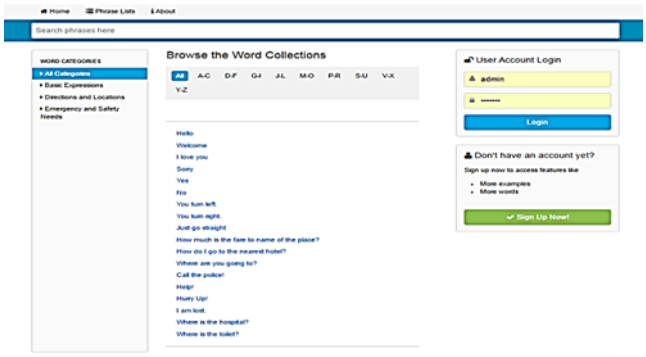

Figure 4. Web-based Application List of Categories

Figure 5. Mobile-based Application List of Categories

It shows a list of phrase categories from which the user may choose Basic Expressions, Direction and Locations, and Emergency and Safety Needs. It will provide a list of English words and phrases in that category. The Translation interface appears when the user selects an English word or phrase from one of the categories of words and phrases indicated in Figure 6. The mobile-based application of translation is shown in Figure 7.

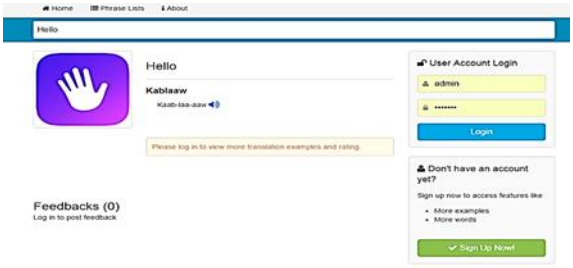

Figure6. Web-based Application of Translation

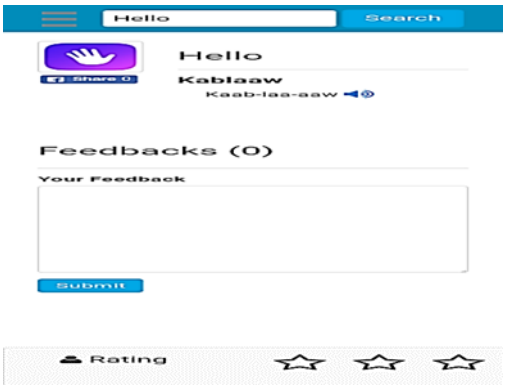

Figure 7. Mobile-based Application of Translation

The Ilocano translation of the selection will be given in text form, along with a picture of the word or phrase and a pronunciation instruction below it. By clicking on the audio playback button, the user may hear the genuine native speaker pronunciation.

The search interface on this plate consists of a text field where the user may type to find words and phrases, as illustrated in Figure 8. The mobile-based application of search is shown in Figure 9.

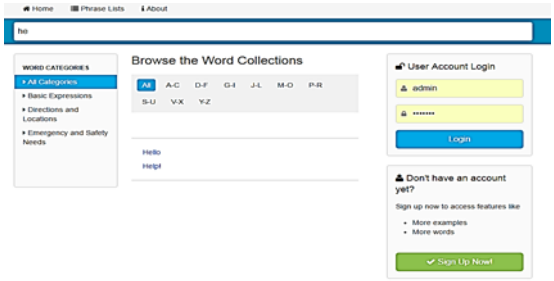

Figure 8. Web-based Application of Search

Figure 9. Mobile-based Application of Search

After typing the word and pressing enter, or tapping on the Go button on the on-screen keyboard or the search button on the mobile app, the search results will be presented. The user may then choose to see the chosen translation by clicking on any of the search results.

By tapping on the microphone icon on the Search Interface, the Figure 10, Voice Search interface is activated.

Figure 10. Mobile-based Application of Voice Search

It offers as an alternative method for entering search text for the user by using the user's voice as input. Tap on the microphone symbol, which functions as a toggle, to pause voice entry.

E. Usability of the Application

Usability focuses on the fundamental usability criteria, such as how easily users can grasp, immerse, absorb, and engage with the program. This section reflects the respondents' degree of satisfaction in terms of user friendliness, functionality, and portability.

The Likert scale was used to organize the questions. Every question or statement in this survey type has five options. The options show each respondent's level of agreement with the given question. Table 2 shows the assessment of the level of satisfaction in terms of user friendliness.

Table 2 Respondents' Overall assessment of the e-Balikas application with regards to User-Friendliness

Category	AWM	Description
1. User comprehends how to use the apps easily.	4.25	Satisfied
2. The apps is easily accessible when needed.	4.49	Satisfied
3. User uses the apps without much effort	4.61	Very Satisfied
4. User friendly and entered clear and well defined apps	4.48	Satisfied
	4.45	**Satisfied**

Table 2 above provides the overall evaluation of the e-Balikas application in terms of its user-friendliness attribute. Each weighted mean in the table is the average of all weighted means from each corresponding category, with each reflecting consolidated data from tourist respondents who visited the towns of Pagudpud, Batac, Paoay, and Bangui. The third item had the highest average weighted mean score of 4.61. The category with the lowest average weighted mean is the first item, with a mean of 4.25. With an overall mean of 4.45, this indicates that the majority of respondents were satisfied with the application's usability.

Moreover, Table 3 shows the assessment of the level of satisfaction in terms of functionality.

Table 3 Respondents' Overall assessment of the e-Balikas application with regards to Functionality

Category	AWM	Description
1. The apps performs the required tasks	4.63	Very Satisfied
2. Results are as expected	4.58	Very Satisfied
3. The apps interacts with another system	4.52	Very Satisfied
4. The apps prevent unauthorized access.	4.55	Very Satisfied
5. Produces updated information/data	4.49	Satisfied
	4.55	**Very Satisfied**

Table 3 above summarizes the overall evaluation of the e-Balikas application in terms of functionality. The average weighted mean for the second category is 4.63, while the average weighted mean for the fifth category is 4.49. With an aggregate mean of 4.55, this indicates that the majority of respondents were extremely happy with the application's functioning.

Furthermore, Table 4 shows the assessment of the level of satisfaction in terms of portability.

Table 4 Respondents' Overall assessment of the e-Balikas application with regards to Portability

Category	AWM	Description
1. The apps can be moved to other environments	4.58	Very Satisfied
2. The apps installed easily	4.61	Very Satisfied
3. The apps complies with portability standards	4.59	Very Satisfied
4. The software easily replaces other software	4.61	Very Satisfied
5. Checks errors whenever sorting is done	4.62	Very Satisfied
	4.55	**Very Satisfied**

Table 4 above summarizes the overall evaluation of the e-Balikas application in terms of portability. The category with the highest average weighted mean is the sixth, with a mean of 4.62. The group with the lowest average weighted mean, on the other hand, is the first, with a mean of 4.58. With an aggregate mean of 4.60, this indicates that the majority of respondents were very satisfied with the application's portability.

Table 5 also provides the overall evaluation of the e-Balikas application. The category with the highest weighted mean is Portability (4.60). The category with the lowest average weighted mean, on the other side, is User friendliness, with a mean of 4.45.

Table 5. Respondents' Overall Assessment of the e-Balikas Application

Category	AWM	Description
1. User Friendliness	4.45	Satisfied
2. Functionality	4.55	Very Satisfied
3. Portability	4.60	Very Satisfied
	4.53	**Very Satisfied**

With an aggregate mean of 4.53, this indicates that the majority of respondents were **Very Satisfied** with the application.

IV. CONCLUSION

The developer believes that the utilization of the e-Balikas program meets the respondents' requirements for English to Ilocano translations and also improves the English to Ilocano language guides, showcasing the significance of information technology.

After completing an in-depth investigation of the computing status of the Mobile English to Ilocano Language Guide Application for Ilocos Norte visitors, including a survey of its users and system developers, the program was evaluated, designed, and developed. The findings revealed that the program allows respondents to search and translate their commonly used terms and phrases in the following categories: basic expression, directions and places, and emergency and safety needs.

The e-Balikas Mobile application was deemed highly useful by the majority of respondents in the following categories: basic expression, directions and places, and emergency and safety requirements.

In terms of user friendliness, functionality, and portability, the e-Balikas mobile application is very straightforward to use and learn since it provides entire operating options that demonstrate accurate Ilocano pronunciation. The application performs as intended, with good dependability and security. It is also adaptable enough to be readily installed and set on a wide range of devices. It adheres to established portability criteria.

REFERENCES

[1] G. Bucăţa and M. Rizescu, "The Role of Communication in Enhancing Work Effectiveness of an Organization", Land Forces Academy Review. 22. 10.1515/raft-2017-0008.

[2] D. Graff, N. Meslec, & M. A. Clark," Perceived analogical communication in design teams: Development and validation of a scale. Design Studies", 2020.

[3] B. Uslu, "The effect of foreign language acquisition on preschool children's self- regulation and social skills. European Early Childhood Education Research Journal, 1-20. 2020.

[4] I.A.S Buarqoub, "Language Barriers to Effective Communication," Utopía y Praxis Latinoamericana, vol. 24, núm. Esp.6, pp. 64-77, September 2019.

[5] Haarhoff, R. and Hass, A., "Exploring the Link between Pleasant Tourist Experiences and Linguistic Competence: A Case Study for the Gariep Dam, Free State", African Journal of Hospitality, Tourism and Leisure, Volume 8 (1) - (2019) ISSN: 2223-814X

[6] I. Garcia, "Computer-aided translation: systems", in Sin-Wai, C. (Ed.), Routledge Encyclopedia of Translation Technology, Taylor & Francis Group, New York, pp. 68-87, 2015.

[7] N.X. Liu and M. Watts, "Mobile translation experience: current state and future directions", in Xu, X. (Ed.), Impacts of Mobile Use and Experience on Contemporary Society IGI Global, PA, pp. 193-212, doi: 10.4018/978-1-5225-7885-7.ch012, 2019.

[8] H.C. Ouertani and L. Tatwany, "Augmented reality-based mobile application for real-time Arabic language translation", Communications in Science and Technology, Vol. 4 No. 1, pp. 30-37, doi: 10.21924/cst.4.1.2019.88, 2019.

[9] M. Pu, N. Abd Majid, and B. Idrus, "Framework based on mobile augmented reality for translating food menu in Thai language to Malay language", International Journal on Advanced Science Engineering and Information Technology, Vol. 7 No. 1, pp. 153-159, doi: 10.18517/ijaseit.7.1.1797, 2017.

[10] A.J. Saudagar and H. Mohammad, "Augmented reality mobile application for Arabic text extraction, recognition, and translation", Journal of Statistics and Management Systems, Vol. 21 No. 4, pp. 617-629, doi: 10.1080/09720510.2018. 1466968, 2018.

[11] K. Wolk, "Incorporating domain-specific neural machine translation into augmented reality systems", PACIS 2020 Proceedings, Vol. 14, available at: https://aisel.aisnet.org/ pacis2020/14.

[12] L. Tomasello, "Neural machine translation and artificial intelligence: what is left for the human translator?", Unpublished Dissertation, UniversitadegliStudi di Padova, available at: http://tesi.cab.unipd.it/62159/1/ Laura_ Tomasello_2019.pd.

[13] J. van der Meer, "Translation technology–past, present, and future", in Angelone, E., Ehrensberger-Dow, M. and Massey, G. (Eds), The Bloomsbury Companion to Language Industry Studies, Bloomsbury Academic, London, pp. 285-310, 2020.