Blended Learning: Investigative the Role of Sangapac Online Learning Platform in the Growth of First Grade Student's Khmer Vocabulary Scores

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Abstract: *Computer-assisted to language teaching on the offline form has been around for years. With the development of technology for education within the last decade, language teaching has been assisted by virtual platform making the learning experience more diverse and responsive. The purpose of this study is to investigate the role of Sanagpac online learning platform in the growth of first grade student's Khmer vocabulary scores by using blending learning for primary school in Phnom Penh, Cambodia. 108 first-grade students and two main key persons interviewees in academic 2018-2019 were included in the analysis. The researcher used both quantitative and qualitative methods to analyze the data in this study by employing the Sanagpac Anuwat Platform as pre-test and post-test assessments and semi-structure interview. The researcher used descriptive and inferential statistics were investigative the in the growth of first grade student's Khmer vocabulary scores and the interviews were transcribed a school principal's and founder of Sangapac Anuwat's perspective on the role of Sangapac online learning platform in the growth of first grade student's Khmer vocabulary score. The results indicated the pre-test and post-test Khmer vocabulary scores of the first-grade students through Sangapac Anuwat platform were almost double increase. Furthermore, the results showed that the role of Sangapac online learning platform perceived by a school principal and founder of Sangapac Anuwat were many positive impact positions to promote teachers, instructors and students. To conclude, the results of this study should be considered blending learning to provide the extensive learning environment and positive effectiveness for learners learning anytime and anywhere.*

Keywords: Blending learning, Role of blending learning, Sangapac online learning platform, Students' growth, and Vocabulary scores

1. Introduction

Means for education has been revolutionized from blackboard and white chalk to whiteboard and color marker. Currently, the role of electronic screen and figure is replacing the board and chalk. The traditional approach of making the teaching and learning to happen only in the classroom with some of form of homework support will not be effective and sufficient to support children to develop knowledge and skills for the 21st century living. Rooney (2003) has recognized that the emergence of blended learning is one of the main educational developments resulting from this change of communication styles. Gordeslioglu and Yuzer (2019) reported that creating major structural changes in educational programs with the integration of digital learning tools in schools, online learning, distant education, blended learning and open educational resources through the use of learning management systems utilized to support teaching and learning. Moreover, the fast progress in blended learning has brought noteworthy changes and affected the demands of modern societies in the twenty-first century. The blended learning plays a significant role in educational system. The Ministry of Education, Youth and Sport noted that the long-term goal of creating and improving high quality and ethical human capital based on improving a knowledge-based society with Cambodia without the lack of information and communication technology as a blended learning (MoEYS, 2010).

Encouraging education ministers, policy-makers, non-governmental organizations and educational stockholders, in the educational field, the educating education service output and management, the expansion of information and communication technology as a teaching and learning tool, and development of distance learning and blended learning opportunities are being promoted (MoEYS, 2010). In order to meet the expectations of modern society and economic development, the Ministry of Education, Youth and Sport created and incorporated blended learning into the national curriculum for students from grade 4 to 12 (Som, 2018). Basic Education Equivalency Program (BEEP) is the blended learning program designed to provide flexible alternative education for out-of-school youths to complete basic education and to allow Cambodian youths to pursue their educational interest in accordance with the Ministry of Education, Youth and Sport, the Ministry of Labor and Vocational Training and The United Nations Educational, Scientific and Cultural Organization (Som, 2019).

Although different studies in literature review have confirmed the positive effects of blended learning on learning and teaching, there is a lack of research to examine the role of Sangapac online learning platform in the growth of first grade student's Khmer vocabulary scores. Khmer learners use some repetitive and traditional vocabulary teaching and learning techniques such as memorizing or motivating learners to memorize long-list words to achieve a good result of Khmer language tests. This is one of Khmer learners' challenging issues that in some cases make learners disappointed in attempted learning Khmer language. According to Ministry of Education, Youth, and Sport (2015) reported that more than 50 percent of those who took the test scored below the passing rate by the national assessment in grades 3 and 6 reflected the poor learning. In this study, an attempt was made to the role of Sangapac

online learning platform in the growth of first grade student's Khmer vocabulary scores developed by Sangapac Publisher to support their Khmer learning as extracurricular practices. In consistent with Va (2019) described about opening remarks by Minister of Post and Telecommunication agreed that e-learning is the initiative for a broader learning network to encourage e-learning in order to achieve the goal of advanced skills by investing less money and time in the near future. Therefore, critical questions that cannot be ignored and which this study endeavors to address are as follows:

1) To What extent is the mandatory practice improved the growth rate on Khmer vocabulary score for the first grade adopted by Sangapac online learning platform?
2) How is a school principal's and founder of Sangapac Anuwat's perspective on the role of Sangapac online learning platform in the growth of first grade student's Khmer vocabulary score?

2. Literature Review

2.1 Definition of Blended learning

Blended learning has been defined to differentiate authors and years. Shraim and Khlaif(2010) described blended learning as a method that combines face-to-face teaching in the classroom with a proper use of technology. Bonk and Graham (2012)called blended learning as the combination of traditional face-to-face instruction and computer-aided instruction. Tayebinik and Puteh (2013)explained the idea of using blended learning instead of traditional or online learning because it encourages a greater sense of commitment and community than traditional face-to- face or complete online teaching and learning methods. VanDerLinden (2014)defined that blended learning is a general concept used to describe a wide spectrum of technical integration: blended learning occurs on a continuum of minimal online interaction at one end and limited face-to-face interaction at the other. Senffner and Kepler (2015)explained blended learning is a flexible, scalable, and meaningful way of teaching and learning in anytime and anywhere that they prefer without being limited to groups or partners. Riel, Lawless, and Brown (2016)outlined that blended learning environments offer places to meet, interact and work on practical projects for online and face-to-face learners. Kintu, Zhu, and Kagambe (2017)expressed that blended learning is based on unique features that form the primary basis for this concept. Zhang and Zhu(2018)mentioned that the blended learning approach facilitates an "accessible, flexible, active, interactive, encouraging, and inspiring" teaching and learning environment (p. 268)

2.2 The Potential Roles of Blended Learning

Blended learning has been used the potential roles based on deterrent platforms. Osguthorpe and Graham(2003) described that a blended learning system was used for six reasons: (1) blended learning presents pedagogical richness. For example, some blended learning programs are structured to enable learners to go through three stages: a) self-paced online learning to obtain context knowledge, b) face-to-face learning laboratories based on active learning and

implementation experience rather than lecture, and c) online learning and support to transfer learning to the workplace environment; (2) blended learning opens access to knowledge; (3) blended learning facilitates social interaction; (4) blended learning facilitates personal agency; (5) blended learning offers cost-effectiveness and provides an opportunity to reach a large, globally distributed audience with reliable, semi-personal content delivery in a short period of time. Essentially, travel expenses can be minimized by transferring part of face-to - face learning to blended learning, and by shifting some media-rich content to face-to - face learning, the cost of material production and infrastructure rigging can be reduced; and (6) blended learning provides ease of revision.

Neumeier (2005) presented a framework for developing a blended learning environment. This framework consists of six parameters that identify the key factors in designing a blended learning environment for language learning and teaching. These parameters are: (1) mode, (2) model of integration, (3) distribution of learning content and objectives, (4) language teaching methods, (5) involvement of learning subjects, and (6) location. Allan(2007) recognized a number of resources and technologies that can be used to create successful blended learning environments, namely: (1) classroom tools which are commonly used in face-to-face learning scenarios such as interactive whiteboards, PowerPoint and response systems for audiences;(2) virtual communication tools that allow users to participate in online discussions and events, including audio files, e-lists, discussion boards, chat or conference groups, newsgroups, email, surveys , questionnaires, videoconferencing and web forms; (3) social networking software, now widely used by students and staff in their personal lives, and becoming more prevalent in the context of learning and teaching, such as instant messaging and phone calls, social networking sites, podcasts, virtual worlds, video clips, weblogs and wikis; (4) e-learning systems as online environments that incorporate a variety of e-learning support resources including conferencing systems, group collaboration software, virtual learning environments and group sites; (5) mobile learning using mobile phones, tablet and laptops.

Bekele and Menchaca(2008) identified positive influences of blended learning on (1) student performance; (2) student involvement and motivation; (3) increased access and flexibility; (4) increased cost-effectiveness; and (5) more active and deeper learning compared to traditional classes. According to Al Fiky (2011), the benefits of blended leaning are summarized as follows : (1) the engagement and involvement among students; (2) enhancing learning and performance; (3) affecting teachers' approaches of other aspects; (4) developing self-learner, a source of instant feedback, time saving and motivation; (5) increasing student learning outcomes and reduce instructional delivery costs; (6) maximizing classroom space and/or reduce the number of overcrowded classrooms; (7) allowing institutions to offer more classes at peak demand times of the day and increasing flexibility in scheduling, (8) reducing paper and photocopying costs.

According to Tomlinson & Whittaker(2013) stated there are several academics and educational think-tanks proposing distinct blended learning models. These models include: (1) Face-to-face driver-where the teaching is powered by the instructor and digital tool increases;(2) Rotation-students rotate between an individual online study schedule and face-to- face classroom time; (3) Flex – The majority of the curriculum is provided through a digital platform and teachers can be consulted and assisted face to face;(4) Labs – All curricula are provided via a digital platform but in a consistent physical location. In this model, the students typically take typical classes as well. (5) Self-blend – Students opt to improve their traditional learning through online course work; and (6) Online driver – Students complete the entire course with possible instructor check-ins through online platform.

2.3 Impact of Vocabulary in Using Blended Learning

A large number of positive effects were identified by most of the researchers who have studied blended learning approach and its role in enhancing vocabulary knowledge. Pazio (2010) illustrated the promise of blended learning in increasing vocabulary skills helped students eliminate most spelling errors and improve high quality of writing. Furthermore, Tosum (2015)mentioned blended learning assisted students' scores on vocabulary assessment increase. Khalili, Tahririan and Bagheri (2015) pointed out the vocabulary training by using blended learning displayed the great difference between the two groups of learners with regard to their acquisition of new vocabulary in the other words and multimedia software was positive impact and strong interaction with the operation on students learning vocabulary. Damayanti and Sari (2017) noted the factors influencing student vocabulary mastery through the introduction of blended learning such as involving in learning process, increasing and applying vocabulary appropriately, rising students attention, participating in discussion, and interesting a new online class by familiar with internet connection in their daily life.

Pertiwi (2018) indicated that the students appreciated and improved their mastery of vocabulary by using blended learning. Krishnan and Yunus (2019) highlighted the use of blended learning as a vital option for low-skilled students to improve their vocabulary skills and comprehension of sentence structures through digital literacy, which is able to inspire and encourage them to reach their full potential. Markanastasakis (2019) stressed the acquisition of vocabulary using blended learning to inspire students to engage in a learning aspect and to help them enjoy the process. Masita (2020)stated using blended learning method in teaching vocabulary showed that vocabulary teaching model based on blended learning method create an interactive and learning atmosphere and the selection of learning applications that suitable with students need to make the teaching and learning activities more fun, easy to understand, and keep following the development of teaching and learning methods. However, this study showed that the students are not familiar with the learning application, so they found difficulties using smartphone in accessing learning application and the internet connection is unstable, so the teacher should prepare another activity.

2.4 Related Studies in Blended Learning

Xu, Glick, Rodriguez, Cung, Li and Warschauer (2020) reported that this study conducted in a large public university in Mexico to analyze the impact of a technology-enhanced blended program on students' English course grades and course completion rates. The results showed that there is a significant between traditional face-to-face instruction and blended learning and positive impact on students' course grades and course completion rates. This study also indicated that blended learning environments hold promise to provide high-quality and cost-effective language instruction. According to Albiladi and Alshareef (2019), they conducted in the use of blended learning in English as a second or foreign language context. This study combines traditional and online teaching modes and the promise of blended learning rests on the strengths of both teaching approaches. The results of this study showed that blended learning can be used effectively to improve the learning experience in English, develop language skills and encourage the motivation of the students to learn the language.

Ahmad, Osman, Wahab and Suryani (2018)showed that the learners' feedback on their experience with the university's learning management system in their English Language learning Investigate 68 English Language Learners from Malaysia's public university attending a Level 1 English language course. The study found that learners viewed their experience of blended learning with LMS as well as their experience of learning grammar and vocabulary through an LMS as a positive experience. Ghazizadeh and Fatemipour (2017) showed that the effect of blended learning on the reading proficiency of Iranian EFL learners. This study was employed aquasi-experimental design by selecting sample of the study among sixty intermediate-level Iranian EFL learners who were randomly assigned to two groups. The findings showed that blended learning has a statistically significant positive impact on the reading proficiency of Iranian EFL learners. In the English language classes, blended learning can be adopted to promote the learning process, especially that of reading skills.

Banditvilai (2016) detailed that enhancing students' language skills through blended Learning. The study showed that the students' accomplishments and attitudes were compared between the control group and the experimental group to measure the potential of available technology to assess the capacity of available technology for language skills growth and learner autonomy.In addition, the results of this study indicate that online practice is directly beneficial in improving the four language learning skills, as well as autonomous learning and learner motivation. Aldalalah and Gasaymeh (2014) explored the effect of locus of control and anxiety level on the Jordanian educational technology students perceived blended learning competencies and obstacles. The findings indicated that blended learning competencies and blended learning obstacles is significant between students with external locus of control performed and internal locus of control students. Furthermore, the study showed that moderate anxiety students performed in blended learning competencies and blended learning obstacles significantly better than low and

high anxiety students. The study eventually showed that the low and high anxiety student in blended learning obstacles were no significant deference.

Sucaromana (2013) conducted that blended learning with face-to-face learning among university students studying English as a foreign language in Thailand. This study was adopted the experimental design as the control group using face-to-face learning and treatment groups in using blended learning. The results of the research showed that the students had significantly a better attitude towards English as a subject, higher levels of intrinsic motivation for learning English, and better satisfaction with the blended learning environment. Finally, the students who were taught using blended learning had significantly a better attitude towards English as a subject and higher levels of intrinsic motivation for learning English, as well as greater satisfaction with the blended learning climate than the usage face-to-face learning.

Tehrani and Tabatabaei (2012)found that the impact of blended online learning on Iranian EFL Learners' vocabulary achievement. The result of t-test between pre-test and post-test showed a statistically significant difference between the treatment and control group regarding their vocabulary knowledge. Shih (2011) investigated that can Web 2.0 technology assist college students in learning English writing? Integrating Face book and peer assessment with blended learning at a technological university in Taiwan participating in an 18-week English writing class with 23 first-year students. This study was conducted in pre-test and post-test of English writing skills, survey questionnaire for a self-developed and in-depth interviews student. The results indicated that it would be useful and successful for college-level English writing classes to integrate peer assessment using Facebook into learning English writing. Students may develop their English writing skills and comprehension not only from co-operative learning but also from in-class instruction. Moreover, this integrated Facebook instruction can significantly boost the interest and encouragement of the students.

Zygadlo (2007) guided that the influence of blended learning on the acquisition of new vocabulary and in turn the development of language. The researcher used pretests and posttests with 46 students from a school in Izabelin, Warsaw Poland. Before these tests were administered, the students in the experimental group were taught using blended learning with strategies such as self-study, use of computer tools, and face-to-face instruction. The study indicated that students learned better when blended learning was used, than when it was not used following the dynamism of strategies used to learn. The study also showed that student autonomy was promoted and motivation was improved. Al-Jarf (2006)explored the effect of blended learning on college readers. The results showed that the experimental and control groups in their reading skills as measured by the post-test was significant differences. This study also can suggest that reading achievement in the experimental group improved by using online instruction.

3. Research Mythology

3.1 Research Design

This study was conducted using mixed methods. According to Creswell (2009), this search design contains of two different but associated segments. The quantitative data was adopted the quasi experimental approach with one group pre-test and post-test design and qualitative data was collected by interview. Before the data was collected, the students, a school principal and a founder of Sanapac online learning platform were informed that their identity would remain anonymous in this study.

3.2 Description of the School Setting

Happy Chandara School was created by the French Organization "Toutes à l'Ecole". This school is supported by donations from individuals and foundations from European countries, including France, Belgium and Luxembourg. Happy Chandara School is composed of a primary, a secondary and a high school as well as a vocational training center, a boarding school and Students home. This school offers high quality free education to underprivileged young girls coming from the Prek Thmey area, located about 20 km south of Phnom Penh. In 2018-2019 academic year, the director of primary school was initially employed the Sangapac online learning platform to use for first-grade students with 108 female students via the laptop using a random sampling approach with four different teachers and classes by means of in three months during the second semester.

3.3 Descritption of the Website

Sangapac online learning platform consisted of three features in the website (www.sangapac.com). Learning feature contains a lot of learning tasks for each lesson developed primarily based on word taken form Ministry of Education, Youths and Sports Khmer textbook lesson. Each task is built progressively in accordance to Bloom Taxonomy in order for children to learn the languages and develop critical thinking skills. Assessment feature contains a lot of test items. Every student or the same student at different attempts will experience different test items every time they take the assessment. The records will help parents and teachers adjust their support according to help students learn more effectively.

3.3.1 Learning feature
This website pages for teachers, parents, or guidance recognize activities for young learners' performance. Teachers or instructors can choose subject, grade and lesson for young learners. Learning feature will be more effective if it is consistent with the subjects, classes and lessons that the young learners are learning with the teacher at school. These activities are organized as additional activities for young learners to practice to read, to write and to use words that are consistent with the content of the Khmer textbook lessons published by the Ministry of Education, Youth and Sports. There are many learning activities and vary from lesson to lesson or from one grade to another. Student activities, objectives, and procedures are described below. These

activities are designed for young learners: (1) Reading words: requires young learners to read word and identify meaning by using additional pictures; (2) Writing words: requires young learners to practice writing words by pressing the consonants and vowels correctly in order to form words that match the picture or sound; (3) Understanding word meanings: requires young learners to understand word meaning before using word; (4) Using words: requires young learners to know each word clearly to use word in context; and (5) Strengthen critical thinking skills: requires young learners to think word meanings, sentence meanings, and context meaning.

3.3.2 Assessment feature
Before and after the young learners do all the activities in each lesson and they require test the lesson on their own as pre-test and post-test. Almost every word in each lesson is rearranged as a test format to measure a young learner's learning outcomes. Each assessment subject has many questions. Therefore, as young learners taken each test, they will notice that the questions in each subject are not completely the same. The young learners can take multiple tests to become more able to read, write and apply correctly. The young learners can review each assessment item to see which questions are wrong and which questions are right. The young learners can take multiple tests for each lesson or monthly and semester exams until they score equal or above the standard set by the teacher or instructors.

3.3.3 Analytic feature
All activities that young learners do are automatically recorded. These records are categorized by date, subject, duration, and activity type. This section also shows which learning activities young learners do right and which young learners do wrong. The teacher or instructors can assign exercises in this section for the young learners to rehearse.
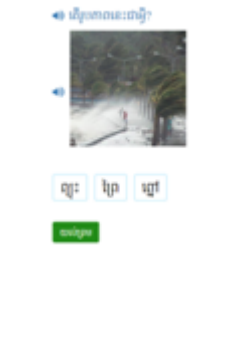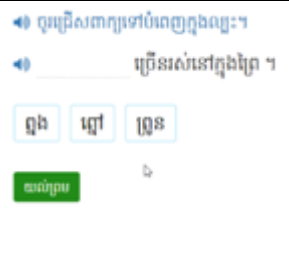
3.4 Data Source

This study was selected data source from the platform of Sangapac (Sangapac Anuwat, 2017) to generate data in this study by logging in main account of each class that permission from a primary school director. The researcher found many lessons that first-grade students conducted in task assessment recorded by finding the last lesson that were consistent with each class as lesson 87, retrieving from platform and generate to SPSS program to analysis in pre-test and post-test. The pre-test and post-test questions were comprised of 10 multiple-choice questions which tested the first-grade students on Khmer vocabulary scores. The words and question formats were chosen specifically for checking the students on their vocabulary skills. It was designed to assess the student's vocabulary proficiency divided into four sections. The first section was two items containing of consonants with vowels (CV). The second one was two items consisting of words with pictures (WP). The third one was three items such as combining words (CW) and the last one was three items including completing words in the sentences (CWS). Moreover, 108 female students conducted pre-test and post-test assigned through instant exchanged in an online text-based Computer. Semi-structured interviews were conducted with the school principal and founder of Sangapac online learning platform who participated in the

study to get more information that contribute to answer the research questions. The interview consisted of 8 parallel questions answered individually. The participants' responses on the questions were recorded after taking permission from them to do that.

3.5 Data procedure

Two phases of data procedure were conducted in this study. Firstly, in order to determine the effectiveness of Sangapac online learning platform of Khmer students' practice, the study compared the assessment record of the average growth of Khmer vocabulary scores of pre-test and post-test. The pre-test and post-test were tested by the students before starting and after ending new lesson. All participants attended to Sangapac online learning platform every two hours per week based on school schedule for three months. At the beginning of the lesson, 108 participants were required to take pre-test about 3 minutes test paper of 10 multiple-choice questions randomly taken from the test bank of about 60 questions in each lesson through instant exchanged in an online text-based computer. Sangapac online learning platform were then also chosen to be practicing content of the course for a whole lesson by doing the task practice procedure about 30 minutes. Each lesson was designed into seven fragmental activities mentioned here:

No	Activities	Samples
1	The listening and repeating the words displays the general oral dictation format, where learners can click and repeat on the given word as many times as they desire before they proceed. The main focus of this activity is to help the learners learn to how pronounce the words correctly.	
2	The matching word with picture proves the classic multiple-choice questions, where the learners must click on the correct one of three words based on the given picture. The main purpose of this activity is to help the learners be more familiarized with the same word, while also being able to see the new words beforehand.	
3	The matching picture with words is an opposite of the matching word with pictures, where the learners must click on the correct one of three pictures based on the given word. The main focus of this activity is to help the learners be more familiarized visually.	

4	The arranging words in order is where the learners must arrange the words in the correct order based on the consonants and vowels. The main resolution of this activity is to help the learners remember better with the consonants and vowels through repeated exposure.	
5	The constructing word with picture is similar to that of a normal vocabulary dictation, but due to the flexibility of the Khmer language as a whole, the given word is deconstructed in its entirety. The goal is for the learners to spell the word in the correct way and order. The main focus of this activity is to help the learners learn how to spell the words correctly with regards to vowel and consonant placements.	
6	The listening and dictation words is an extension of the constructing word with picture, where instead of listing down just the given word's consonants and vowels, given inside a virtual-like on-screen keyboard. The main focus of this one is to help the learners learn how to spell the words correctly though, with even lesser help and added confusion due to the on-screen keyboard.	
7	The completing words in the sentence is where the learners must input the correct word in conjunction with the sentence. This purpose is to apply word in contextualization and help the learners how to read sentences correctly and clearly.	

After finishing practicing completely, 108 participants were required to do multiple-choice task assessment on vocabulary scores for 3 minutes as post-test assigned through instant exchanged in an online learning text-based computer. The cycles of three-month practice on three tasks including task practice procedure, task content and task assessment were saved on the class Web-wide. The latest task assignment was taken in this study in order that learners could follow the design of the study and complete the tasks appropriately. Secondly, Semi-structure interview was conducted with a school principal of Happay Chandara Happy Chandara Primary School and a founder of Sangapac online learning platform. The researcher contacted them via phone call and introduced them to the purpose of the study.

After getting permission from them to interview and record, the researcher made an appointment to interview by phone call for about 45 minutes individually.

3.6 Date Analysis

After collecting data from pre-test and post-test and two interviewers, the researcher used the SPSS Version 26 for quantitative method and tape recorded, then transcribed for qualitative method. Descriptive statistics were utilized to analyze the data for this study. Descriptive statistics provide information on frequency distribution, minimum, maximum, mean, and standard deviation to count data set and inferential statistic for pre-test and post-test. Data from the responses were clustered by themes including segments of information and interpretation.

4. Research Findings

After collecting and analyzing data from pre-test and post-test of first-grade student and interview two main keys participants, the researcher record and grouped the findings regarding participant use and create of blended learning as the role of Sangapac online learning platform in the growth of first grade student's Khmer vocabulary scores. Results from this study are divided into two sections. The first section analyzed descriptive statistic as mean, standard deviation, maximum, and minimum and inferential statistic through tests such as independent T-test on first-grade students doing multiple-choice task assessments by Sangapac online learning platform to answer the first research question. For the second section, data from the responses were clustered by themes including segments of information and interpretation to answer the second research question by analyzing a school principal's and founder's perspective on the role of Sangapac online learning platform in the growth of first grade student's Khmer vocabulary score.

Before presenting the analyses of two research questions, here demographic data related to the sex of students and four classes of first-grade students are presented. A summary of the demographic characteristics of the participants who provided the valid responses. The demographic variables of students as a single-gender school was a proportion of all female testers (100%, N=108) who participated both pre-test and post-test in this research study. The four surveyed students' classes were the equivalent number of students, which is 27, per class. Moreover, the school principal and founder of Sangapac Anuwat as interviewees are males, who is 38 and 48, completed successfully master and doctoral degrees separately. The last 5-year experiences of school principal were an administrative office at Policy and Department in Mistry of Education, Youth and Sports and the founder of Sangapac Anuwat was a Vice Dean at Faculty of Education, Royal University of Phnom Penh. The current position of school principal is a head of administrative office at Policy and Department in Ministry of Education, Youth and Sports and the current position of founder of Sangapac Anuwat is an editor and research consultant.

4.1 Result of the growth rate on Khmer vocabulary scores

The first research question examined in this study was: "To What extent is the mandatory practice improved the growth rate on Khmer vocabulary score for the first grade adopted by Sangapac online learning platform?". This question was to investigate the mean, standard deviation, minimum, maximum and the mean differences in the levels of students " student's ability in doing pre-test and post-test of Khmer vocabulary scores for the first grade". Table 4.1 presented the mandatory practice improved the growth rate on Khmer vocabulary scores.

Table 4.1: Khmer vocabulary scores analyzed in the study

Khmer vocabulary test	N	Min	Max	Mean	S.D
Pre-test					
Consonant with vowel	99	1	2	1.75	0.44
Word with picture	102	1	2	1.60	0.49
Combine words	85	1	3	1.54	0.61
Complete word in the sentence	69	1	3	1.51	0.66
Grand Total Pre-test	108	0	8	5.29	1.67
Post-test					
Consonant with vowel	108	1	2	1.94	0.25
Word with picture	108	1	2	1.94	0.23
Combine words	108	1	3	2.61	0.58
Complete word in the sentence	107	1	3	2.58	0.64
Grand Total Post-test	108	6	10	9.05	1.05

As showed in the table 4.1, Khmer vocabulary scores in pre-test and post-pest including combining consonant with vowel, matching word with picture, combining words to single meaning, and completing word in the sentence were analyzed. Initially, the grand total pre-test of Khmer vocabulary scores that 180 first-grade students did was minimum of zero score and maximum of 8 scores gotten with grand total mean and standard deviation (M = 5.29, S.D = 1.67) whilst grand total post-test of first-grade students' Khmer vocabulary scores was minimum of 6 scores and maximum of 10 scores gotten with grand total mean and standard deviation (M= 9.05, S.D = 1.05). This study showed the mean score of first grade student learning Khmer vocabulary was almost double increase.

Table 4.2: Differences students' pre-test and post-test scores

	Deference between pre-test and post-test							
	95% Confidence Interval							
	Mean	*SD*	*SE*	*Lower*	*Upper*	*t*	*df*	*p*
Total Pre-test Total Post-test	3.759	1.245	0.120	3.522	3.997	31.390	107	.000

*** *p*< 0.001

Table 4.2 displays the results of the mandatory practice improved the growth rate on Khmer vocabulary score for the first grade adopted by Sangapac online learning platform after the pre-test and post-test in academic year 2018-2019. This assessment test was including four sections: (1) Combining consonant with vowels; (2) matching words with pictures; (3) combining words to single meaning; and (4) completing the word in the sentence. The Khmer vocabulary scores of pre-test and post-test were analyzed in an analysis of variance with the first-grade students as the independent variable. The increase in Khmer vocabulary scores in the first-grade students was significant difference between mean

(M=3.57, SD=1.245), T (1, 107) = 31.390, p < 0.001. Inspection of the 95% confidence intervals around mean indicated that there was a significant increase in Khmer vocabulary scores for participants in the first-grade students in practicing learning Khmer vocabulary adopted by Sangapac online learning platform.

4.2 Result of on the role of Sangapac online learning platform

The second research question examined in this study was: "How is a school principal's and founder of Sangapac Anuwat's perspective on the role of Sangapac online learning platform in the growth of first grade student's Khmer vocabulary scores?" In order to respond this research question, researcher interviewed a school principal and founder of Sangapac Anuwat's perspective on the role of Sangapac online learning platform in the growth of first grade student's Khmer vocabulary scores. Once the interviews were transcribed, a school principal's and founder's responses were categorized and coded into different themes. Here is a school principal's and Sangapac Wanuwat founder's perspective on:

- Teachers and instructors: (1) be easily accessibleto the teaching materials and assigning students doing anything that teachers needed. "*Sangapac online learning platform contributed to the easy life of teachers and instructors to support of learners.*" (2) control any activity for student learning lesson and doing assessments. "Teachers *and instructors could afford full control and know everything about activities that learners have done on the platform.*"(3) manage time-on task. "*All information was recorded from the time of the lesson activities and history of tests.*"(4) don't check worksheet. "*Teachers and instructors could look at the problem where learners did right and wrong.*" (5) reduce copying paper."*The machine automatically corrected on students' tasks as soon as they finished.* "and (6) notify low and fast leaners.*"Teachers and instructors could look at the problem where learners did right and wrong in lesson activities and history of tests.*"

- Students: (1) be self-confidence. "*learners could learn themselves to practice one activity to others as low level to high level."* (2) bemore fun for everyone. "*Learners were happy to using the Sangapac Platform because they had computers to support learning including sound, pictures and many activities for them to practices."*(3) motivate and challenge with practice scoring and testing results.*"If learner did less than 80% of task assessment, learners would learn the same lesson a few times."* (4) be self-learning and self-evaluation, *"learners knew the way of learning in this platform as doing task assessment, practicing lessons, and checking where they did right and wrong."*(5) train to become skillful; "*learners learned to identify words, read words, and repeated words as instruction many times."*(6) master basic skill."*learners did same activities many times until they did almost correct as reading words, writing words, understanding word meanings, using words, and strengthen critical thinking skills."* (7) be time-on task behavior. *"learners knew the scheduled for learning and doing task assessment."* (8) provide flexible alternative learning. *"learners could learn anytime and*

anywhere."(9) spend less money and time; *"learners spent less than a cup of coffee price."* and (10) be transparency test's score.*"Learners made sure our test's score with time limited and random exercises."*

5. Discussion and Conclusion

This part deals with the details of discussion on the findings from the research. This research study tried to examine "To What extent is the mandatory practice improved the growth rate on Khmer vocabulary score for the first grade adopted by Sangapac online learning platform?" It tried to answer two main questions. As explained in the findings, this study showed the mean score of first grade student learning Khmer vocabulary was almost double increase which mean and standard deviation of pre-test (M = 5.29, S.D = 1.67) whilst mean and standard deviation of post-test(M= 9.05, S.D = 1.05). Furthermore, in an analysis of variance with first-grade students as the independent variable, the Khmer vocabulary scores for pre-test and post-test were analyzed. In first grade students, the increase in Khmer vocabulary scores was a significant difference between mean (M=3.57, SD=1.245), T $(1, 107) = 31.390$, $p < 0.001$. This result indicated that the first-grade students increasingly improved vocabulary scores on sections combining words to single meaning and completing word in the sentence was almost twice while combining consonant with vowel and matching word with picture were almost correct. The students may be likely to reduce most spelling errors and be acquisition of new vocabulary; involving in learning process and rise student attention; increase and apply vocabulary appropriately; be autonomous learning and improve comprehension of filling gaps in the sentence; inspire students to engage in learning activities more fun and to help learners to understand easily; and provide high-quality, cost-effective, access and flexibility. The results from this study are consistent with the statements that blended learning in increasing vocabulary skills helped students eliminate most spelling errors and their acquisition of new vocabulary (Pazio, 2010; Khalili, Tahririan & Bagheri; 2015) and blending learning involve in learning process, increase and apply vocabulary appropriately and rise student's attention (Shih, 2011; Damayanti & Sari, 2017; Albiladi & Alshareef, 2019). The positive impact of blending learning to improve their vocabulary skills, comprehension of sentence structures through digital literacy and self-learning (Zygadlo, 2007; Banditvilai, 2016; Ghazizadeh & Fatemipour; 2017;Krishnan & Yunus, 2019; Masita, 2020). Plus, the blending learning inspire students to engage in a learning aspect and to help them enjoy the process and make easy to understand (Sucaromana, 2013; Markanastasakis, 2019; Masita, 2020) and blending learning provide high-quality and cost -effective language instruction and access and flexibility (Bekele & Menchaca, 2008; Al Fiky, 2011; Xu, Va, 2019, Som, 2019; Glick, Rodriguez, Cung, Li & Warschauer, 2020).

As mentioned in second research finding, on the role of Sangapac online learning platform in the growth of first grade student's Khmer vocabulary scores previewed by a school principal and founder of Sangapac online learning platform showed there are twofold of the role of program platform to help teachers and instructors and students

namely: (1) teachers and instructors are easily accessible; control students any activity; manage students time on task; don't check worksheet; reduce copying paper; and notify low and fast learners. (2) students are self-confidence; more fun for learners; self-learning and self-evaluation; motivate and challenge with practice scoring and testing results; train to become skillful; master basic skill, time-on task behavior; provide flexible alternative learning; spend less money and time; be transparency test's scores. The results from this study are consistent with the statements that the role of blending learning as the engagement and involvement among students, enhancing learning and performance and increasing flexibility in scheduling (Osguthorpe & Graham, 2003; Neumeier, 2005; Bekele & Menchaca, 2008; Al Fiky, 2011; Damayanti & Sari, 2017; Krishnan & Yunus, 2019; Markanastasakis, 2019). Moreover, the role of blending learning helps learners to develop self-learners, to increase students learning outcomes, time saving and motivation, to provide the majority of the curriculum in platform, to complete the entire course with possible instructor check-ins through online platform, and to reduce paper and photocopying costs (Allan, 2007; Tomlinson & Whittaker, 2013; Aldalalah & Gasaymeh, 2014; Markanastasakis, 2019; Masita, 2020; Xu, Glick, Rodriguez, Cung, Li & Warschauer, 2020).

To conclusion, this study is attempted to blending learning: investigative on the role of Sangapac online learning platform in the growth of first grade student's Khmer vocabulary scores. The finding showed the mean score of first grade student learning Khmer vocabulary was almost double increase. It is assumed that pre-test and post-test Khmer vocabulary scores of the first-grade students through Sangapac Anuwat platform were extensive learning environment and positive effectiveness for learners. Additionally, the results showed that showed the role of Sangapac online learning platform perceived by a school principal and founder of Sangapac Anuwat were many positive impact positions to promote teachers, instructors and students of learning anytime and anywhere. Thus, the minister of education, policymakers, non-government organization, student's family, and stakeholders should consider choosing blending learning to encourage learning as the new way of learning in the 21st century skill and a 4.0 industrial age which are advancing learner to widespread learning environment and to get positive achievement or the study should be discussed for further studies.

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