

Rural and Urban Secondary Students Vocabulary Size and Vocabulary Learning Strategies in Practice: A Study in Bhutan¹

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Abstract

The present study aimed at investigating the Bhutanese rural and urban secondary students' English vocabulary size, vocabulary learning strategies (VLS) in practice, and the relationship between the two. The participants were 200 students (110 males and 90 females) from 11 to 16 years old from two different schools in Bhutan, 100 from each school. Adopting the quantitative approach, a comparative design in particular, a previously used vocabulary size test and questionnaire were modified to collect the data. The results revealed that the student-participants on average were medium VLS users and had achieved 83.16% vocabulary coverage of the 3000 most frequently used English words. However, there existed a significant difference in both vocabulary size and VLS in practice between rural and urban participants. As for the choice of VLS, although participants' responses to items on VLS showed slightly different mean values, the general pattern of the responses revealed students in the selected context most frequently used the cognitive strategies and least often the determination strategies which showed the best correlation ($r=0.57$, $p < 0.01$) with vocabulary size. Implications for practice and recommendations for future research were drawn based on the findings.

Resumen

El presente estudio tuvo como objetivo investigar el tamaño del vocabulario en inglés de los estudiantes de secundaria rurales y urbanos de Bután, las estrategias de aprendizaje de vocabulario (VLS) en la práctica y la relación entre ambos. Los participantes fueron 200 estudiantes (110 hombres y 90 mujeres) de 11 a 16 años de dos escuelas diferentes de Bután, 100 de cada escuela. Adoptando el enfoque cuantitativo, en particular un diseño comparativo, se modificaron una prueba de tamaño de vocabulario y un cuestionario, los dos previamente utilizados para recopilar los datos. Los resultados revelaron que los estudiantes participantes en promedio eran usuarios medios de VLS y lograron una cobertura de vocabulario del 83,16% de las 3000 palabras en inglés más utilizadas. Sin embargo, existió una diferencia significativa tanto en el tamaño del vocabulario como en la VLS en la práctica entre los participantes rurales y urbanos. En cuanto a la elección de VLS, aunque las respuestas de los participantes a los ítems de VLS mostraron valores medios ligeramente diferentes, el patrón general de las respuestas reveló que los estudiantes en el contexto seleccionado utilizaron con mayor frecuencia las estrategias cognitivas y con menos frecuencia las estrategias de determinación que mostraron la mejor correlación. ($r=0,57$, $p<0,01$) con tamaño de vocabulario. De los hallazgos se extrajeron implicaciones para la práctica y recomendaciones para futuras investigaciones.

Introduction

Vocabulary size of any language is considered the most essential component of language acquisition (Wangdi, 2020). It is often viewed as the heart of language learning (Coady & Huckin, 1997). Many previous studies (e.g., Adolphs & Schmitt, 2003; Koizumi & In'nami, 2013; Krashen, 1982; Noreillie et al., 2018; Peters & Webb, 2018; Rodrigo et al., 2004; Vu & Peters, 2021) have highlighted the importance of vocabulary size in second language learning. Consequently, there has been growing interest from researchers in recent years on discovering the average vocabulary size of students, vocabulary learning strategies (VLS) in practice among students, and its relationship with learners' vocabulary size in different countries. However, little is known about Bhutanese learners in these matters, especially of lower secondary students with merely six to seven years' exposure to English. The belief is that these learners should obtain a reasonable vocabulary size to have a smooth transition to higher secondary schools. Therefore, this study was needed to help institutions and teachers understand the need of students to help improve their vocabulary size and VLS strategies in use. This study aimed at investigating the existing English vocabulary size/knowledge of the Bhutanese secondary schools' students, VLS in use, and their relationship with their vocabulary size. Further, to gain a deeper understanding of VLS in use by the Bhutanese students, a comparison was drawn between rural and urban students in respect to vocabulary size and VLS in practice. This will allow teachers to tailor pedagogy in the interest of students' vocabulary improvement.

Bhutan is one of the smallest Asian countries which has remained isolated from the outside world for so many years due to its unique geographical location. The population of the nation was approximately 777,486

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people as of 2021. Among this population, 42.6% reside in urban centers, while the remaining 57.4% live in remote rural areas (Wangdi & Rai, 2022). Bhutan is one among many non-colonized countries in the world. For this specific reason, although the English language came comparatively late to Bhutan, it has been used as a medium of instruction at schools since 1964 (Tshewang et al., 2017; van Driem, 1994). Despite English having remained as a medium of instruction and an administrative language since 1960s (van Driem, 1994), the outcome of English language competency among the Bhutanese learners seems to still fall below the expected (Wangdi & Namgyel, 2022). Also, it is quite surprising to learn from the literature that Bhutanese students as English speakers are largely not known. More surprisingly, Bhutan as an EFL language learner had been missed by even sociolinguistics expert (Kachru, 1990). According to Kachru's concentric circle, which includes inner circle, outer circle, and expanding circle, Bhutan should be placed in the either outer or in an expanding circle along with other countries. Given this, it would be of interest to researchers and educators around the globe to learn how students less known in the literature are striving to acquire the English language. Further, based on our observation there seems to be a lack of pedagogical, theoretical, empirical research studies concerning English language teaching in Bhutan. This was an added reason for carrying out this study. More so, it is of our interest to establish a theoretical basis for future researchers concerning the vocabulary size and VLS in use by the Bhutanese secondary students

Literature Review

Importance of vocabulary in second language acquisition

The comprehensible input theory notes that vocabulary is critical to ensure comprehensible input for L2 learners to improve their L2 language skills (Krashen, 1982). It was noted that if learners do not understand the vocabulary they hear, it would not be a comprehensible input for the learners. For them, it would be just a completely new set of languages, basically impeding the speakers and interlocutors from having a successful conversation. The significance of lexical knowledge in attaining comprehensible input was similarly emphasized by Rodrigo et al. (2004). Additionally, earlier arguments stated that the "lack of grammatical knowledge hinders successful transference of meaning, however, absence of vocabulary impedes the transmission of meaning completely" (Wilkins, as cited in Barcroft, 2004, p. 201). These assumptions of the importance of vocabulary size over grammar are very important for the current research as it aims at promoting the awareness of vocabulary size and vocabulary learning strategies in the Bhutan context. However, the essence of syntactic or grammatical knowledge while acquiring L2 language is not completely sidelined. Grammar also carries equal roles in mastering the target language skills.

Another indispensable contribution of having adequate L2 vocabulary size is that it not only helps learners improve their ability to have a successful conversation, but it also makes L2 learners potentially better in other L2 communicative tasks. It is believed that learners with a greater vocabulary size are inclined to have better reading (Laufer & Aviad-Levitzky, 2017; Peters & Webb, 2018), writing (Matthews & Cheng, 2015), speaking (Koizumi & In'nami, 2013), and listening (Noreillie et al., 2018) abilities. Therefore, it is safe to conclude that the vocabulary size of any L2 language is an essential component in its acquisition (Adolphs & Schmitt, 2003).

Vocabulary learning strategies and vocabulary size (VSL) knowledge of L2 Learners

VLS, which is a part of language learning strategies can be roughly defined as the activities initiated by any L2 language learners or educators to help facilitate the learners' lexical knowledge (Tilfarlioglu & Sherwani, 2018). It is suggested that the use of appropriate learning strategies enable learners to be independent, self-directed, and autonomous. Earlier experts on vocabulary acquisition (e.g., Gu, 2010; Kafipour et al., 2011; Sanaoui, 1995) have shown that students' vocabulary size can be improved significantly by using vocabulary learning strategies. VLS and vocabulary learning in second language acquisition have been a popular topic for researchers for the past couple of decades (Gu, 2010). As a result, there are many VLS taxonomies developed and classified in different dimensions by different researchers (e.g., Gu & Johnson, 1996; Lessard-Clouston, 1994; Sanaoui, 1995; Schmitt, 1997). One of the most complete, precise, and widely used VLS taxonomies was found to be Schmitt's Taxonomy. This taxonomy is categorized into five main dimensions: determination (DET), social (SOC), memory (MEM), cognitive (COG) and metacognitive

(MET). These dimensions according to Schmitt (1997) may be summarized as follows. DET strategies are those employed by learners to look for the meaning of words without receiving help from teachers or peers. SOC strategies refer to techniques that learners employ to learn words through interaction with other learners. MEM strategies are those used by learners to learn new words by relating them to their existing vocabulary knowledge. COG strategies involve learners in a more mechanical process of learning words. MET strategies are concerned with decision-making, monitoring and evaluation of the learning progress. The question is whether the use of these proposed VLS really helps increase the L2 vocabulary size among students or not (Ahmadi et al., 2012). Especially in ESL and EFL contexts where learners need extra efforts to acquire any kind of skills associated with the target English language, including vocabulary, grammar, reading, writing, and speaking.

It is suggested that on average second language learners must acquire a minimum of 4000-5000-word families including proper nouns to get 95% coverage of lexical knowledge for unassisted reading comprehension (Laufer & Ravenhorst-Kalovski, 2010). Similarly, to deal with the written text and spoken language, learners need 8000-9000 and 6000-7000 word-family vocabulary, respectively to achieve 98% coverage (Nation, 2006). Besides reading, writing, and speaking, Adolphs and Schmitt (2003) asserted that learners need at least 3000 word-families to get 95% of coverage for daily conversation. Given what has been discussed so far, it is evident that L2 learners must acquire a huge amount of vocabulary to operate the target L2 language tasks successfully. Similarly, Kalajahi and Pourshahian (2012) commented that any L2 learners must have at least 3000 words to carry out the basic tasks associated with the English language and need 8000 words if the learners want to be identified as proficient.

The relationship between VLS and vocabulary knowledge

Much is written on the relationship between the VLS used by the students and their vocabulary knowledge. While some studies have found a positive correlation between VLS and vocabulary size (Alahmad, 2020; Khatimah, 2018), others have found a non-significant correlation (e.g., Maghsoudi & Golshan, 2017) or no correlation at all (SettarAbid, 2017). Memiş (2018) suggested vocabulary learning strategies as one of the effective steps to master vocabulary as it possesses a strong and significant relationship with vocabulary knowledge. However, the case was slightly different in the Iranian context. Maghsoudi and Golshan (2017) looked into the relationship between vocabulary learning strategies and vocabulary size with 90 Iranian university students. Their investigation revealed a non-significant correlation between vocabulary learning strategies and vocabulary knowledge. They pointed out that only a small and inverse correlation was found. Also, SettarAbid (2017) who investigated a relationship between VLS and vocabulary size with Iraqi students claimed that there is no relationship between students' vocabulary learning strategies in use with their vocabulary size.

As noted above, the literature on the relationship between vocabulary learning strategies and vocabulary size seems confounding and inconclusive. These inconsistent findings among previous research studies and a dearth of literature in the Bhutanese context were added reasons that encouraged the present study to investigate the relationship between the vocabulary learning strategy in practice by the students and their vocabulary knowledge.

Urban and rural knowledge divide

The existing disparity between urban and rural education has been a longstanding concern for policymakers, institutions, and teachers around the world. The disparity exists even in the affluent and developed countries like the USA (see Kormos, 2018). Talif and Edwin (1990) reveal that there exists a disparity in English proficiency among urban and rural learners. In their study which was conducted in Malaysian settings, they reported that urban learners performed significantly better in the English language proficiency test compared to rural learners. Likewise, many Asian countries such as Bangladesh (Hossain, 2016); Pakistan (Tayyaba, 2012); Indonesia (Soebari & Aldridge, 2016); Iran (Reaisie et al., 2020), and China (Hu, 2009) have highlighted the existing disparity between urban and rural education. Most of these studies have focused on aspects such as the disparity between urban and rural English language proficiency; the existing digital divide; English language learning strategies; students' motivations, amongst others. However, a literature search uncovered no studies that investigated the difference in vocabulary size or knowledge between urban

and rural students in Bhutan. Also, no previous studies were found in the Bhutanese context concerning the English language differences of the urban and rural settings educations including VLS in practice. Thus, this study also looked into the urban and rural vocabulary size divide and VLS in practice with the hope to develop a theoretical basis for Bhutanese teachers and researchers. Such a contribution can have pedagogical benefits and provide a basis for future researchers who wish to further the understanding of vocabulary learning in this context.

The Study

Admittedly, the existing literature contains a plethora of studies conducted across different contexts of foreign language teaching and learning on vocabulary learning strategies, each presenting concrete evidence that supports the effectiveness of strategies used by learners within their contexts. This has helped many language educators across the globe in adopting the most appropriate strategies to teach L2 vocabulary. However, this raises some questions: are these VLS being used by the Bhutanese students? If so, to what extent? Do previously recommended VLS work in rural Bhutan, where learners' opportunities for language exposure are limited to the four walls of the classroom, such as in many EFL contexts (Sutton et al., 2007). The belief is that their source of learning L2 vocabulary is limited to classroom activities (Muñoz, 2014). Considering this, and that vocabulary teaching is a fundamental concern of educators (Rossiter et al., 2016), this study was conducted with the following research questions:

1. What is the difference in vocabulary size and VLS used between rural and urban Bhutanese secondary school students?
2. What is the most prevalent VLS used among Bhutanese secondary school students?
3. What is the relationship between VLS and vocabulary size?

Methodology

This study used a quantitative research design. This design was deemed suitable since it allows for description as well as for investigation of relationships (Zangirolami-Raimundo et al, 2018). The sample for this study included students from two different government-run secondary schools in Bhutan. These two schools were selected by the researcher based on convenience sampling. A total of 200 (100 from rural and 100 from urban) schools' students were selected for this study. The age range of the participants was from 11 to 16 years old and consisted of 90 females (45%) and 110 males (55%). The participants were grades 7 and 8 students. All the participants were native Bhutanese students of diverse ethnic groups who were studying the same English course under the same curriculum, education policy, prescribed and designed by the Ministry of Education, Bhutan. Before launching the study, ethics approval was secured from the Institutional Review Board (IRB) of Walailak University (Approval No. WUEC-21-129-01)

Instruments

The adaptation and the use of the two instruments in this study are discussed in the following sections.

Vocabulary Size Test

The vocabulary size test instrument was adapted from Schmitt et al., (2001). The original vocabulary size test consisted of 30 items from each 2000, 3000, 5000, and 10000 frequently used words and advanced academic words. However, considering that non-native English speakers need to acquire roughly 3000 most frequently used words to carry out daily communication tasks successfully in the English language (Adolphs & Schmitt, 2003), only 3000 of the most frequently used words were considered for this study. In addition, Nation (2013) suggested that learners who have studied English for six years must have a vocabulary size of around 3000 words. This best describes the current participants since they were class 7 and 8 students, meaning they have been studying the English language for roughly six-seven years. This was an added reason why we have chosen the 3000 most frequently used words. From 3000 words, the test consisted of 30 items and ten different sections each having six words and three meanings given to match (Schmitt et al., 2001). The sample of the test item is presented in Table 1, where participants were required to choose the most appropriate three from six words given in the list and then match it with the corresponding definition given on the right-hand side.

Options	Questions
bull	_____ formal and serious manner
hell	
champion	_____ winner of a sporting event
dignity	
museum	_____ building where valuable objects are shown
solution	

Table 1: Sample of Vocabulary Size Test

Vocabulary Learning Strategy Questionnaire.

The VLS questionnaire was adapted from Lessard-Clouston (1994) and then modified as per the suitability of this study. It consisted of 30 5-point Likert scale items on VLS ranging from ‘never’ to ‘always’ and a few demographic questions. It consisted of seven items on Metacognitive Strategies (MET), five items on Cognitive Strategies (COG), six items on Social Strategies (SOC), six items on Determination Strategies (DET), and six items on Memory Strategies (MEM). The Cronbach alpha reliability value of the questionnaire was 0.890.

Data collection and analysis

Before proceeding to the data collection, written consent from both the head of schools and the class teacher was obtained. Both students and parents were also informed through schools that the data was being collected solely for the purposes of this research and that it would not affect their final grades. They were also presented with the option to withdraw from participation, should they choose to do so.

Firstly, a vocabulary size test was administered to participants. The test which lasted around 30 minutes was closely monitored by the research assistant and the concerned class teacher. Vocabulary size for each student was then marked by, first dividing total words (3000) by a number of words tested (30) and then multiplying the total number of correct answers. For example, if the participants obtained 30 out of 30 (total score), their vocabulary size was 3000 words ($3000/30 \times 30$). Next, the modified paper-based questionnaire was distributed to participants of this study.

Once the data was collected, it was encoded on Excel and then imported to SPSS version 25 for the analysis. To answer the first and second research questions, descriptive statistics such as mean, standard deviation and independent-sample t-test were used. The questionnaire items of the VLS were interpreted as follows: The average mean value ranging between 1.0 and 2.4 on the 5-Likert scale was labeled as ‘low strategy user’. Mean value ranging between 2.5 and 3.4 was labeled as ‘medium strategy user’, and mean value between 3.5 and 5.0 was labeled a ‘high strategy user’ (Oxford, 1990).

For the third research question, which aimed at examining the relationship between the VLS and vocabulary size, a Pearson correlation coefficient was used. Pearson Correlation coefficients were interpreted as follows: The Pearson’s correlation coefficient r value +1 and -1 is considered a perfect correlation; followed by r value +0.7 to +0.9 and -0.7 to -0.9 as a strong correlation; r value +0.4 to +0.6 and -0.4 to -0.6 as a moderate correlation; and r value +0.1 to +0.3 and -0.1 to -0.3 as a weak correlation (Akoglu, 2018).

Results

This section includes results based on each research question. The findings are descriptively presented under each of the three objectives of this study

Difference in vocabulary size and VLS used between the rural and Bhutanese secondary school students?

Vocabulary size score

To assess the vocabulary size of the sample the overall mean and standard deviations were calculated. The result as presented in Table 2 indicates that participants scored an average of 24.95 out of a maximum of 30 in the vocabulary size test. This result can be interpreted as a relatively good score with 83.16% (2495)

vocabulary coverage of 3000 most frequently used words, but a look at the standard deviations points out that the real scores deviate from the mean.

Sample	Mean	SD	Interpretation	Coverage (%)
200	24.95	4.69	2495	83.16

Table 2: Vocabulary size of the sample

An independent sample t-test was then performed to examine the possible differences in vocabulary size between students in urban and rural education settings. As indicated in Table 3, a significant difference in vocabulary size between urban and rural students was observed with a mean difference of 6.240. The average mean value of urban students in vocabulary tests was 28.07 out of 30, whereas for rural students it was only 21.83 out of 30. The two groups had a significant score difference at $p < 0.01$.

Schools	N	Mean (from 30)	SD	F	Sig.	t	Sig. (t-tailed)	Mean difference	Std. Error difference
Urban	100	28.07	2.44	19.343	.000	12.583	.000	6.240	.496
Rural	100	21.83	4.316			12.583		6.240	.496

Table 3: Vocabulary size difference between rural and urban students

Additionally, there was a notable difference in average mean values between the urban and rural students in terms of VLS in practice. The independent sample t-test performed to investigate the statistical difference between the VLS used by the rural and urban students is presented in Table 4. The results indicated that the VLS use of the urban students ($M = 3.41$, $SD = 0.52$) as compared to the rural students ($M = 2.83$, $SD = 0.46$) was significantly different ($t(198) = 8.3$, $p < 0.05$).

	School	N	Mean	SD	Std. Error mean
Average mean	urban	100	3.41	.515	.051
	rural	100	2.83	.458	.045

Schools		F	Sig	t	df	Sig. (t-tailed)	Mean difference
Average mean of rural and urban participants	Equal variances assumed	2.143	.145	8.294	198	.000	.572
	Equal variances not assumed			8.294	195.28	.000	.572

Table 4: T-test of difference between urban and rural students in terms of VLS use

Most prevalent VLS used among Bhutanese secondary Sschool Sstudents.

Analysis of the vocabulary learning strategies.

In order to assess the most prevalent VLS used by the sample, a descriptive analysis was carried out and the results are presented in Table 5. Out of the five different strategies, cognitive strategies ($M=3.33$, $SD = 0.497$) were reported as the most frequently used VLS by participants. Followed by social strategies ($M = 3.26$, $SD = 0.740$), memory strategies ($M = 3.14$, $SD = 0.694$), and metacognitive strategies ($M= 3.08$, $SD = 0.632$). On the other hand, the determination strategies ($M=2.93$ on average) were reported as the least used strategies by participants. Nevertheless, on the whole, participants were found to be medium VLS users.

Category	Items	M	SD	Frequency
Cognitive Strategies	Q15, Q16, Q18, Q21, Q25	3.33	.497	medium
Social Strategies	Q4, Q6, Q10, Q17, Q22, Q30	3.16	.740	medium
Memory Strategies	Q5, Q14, Q20, Q24, Q27, Q29	3.14	.694	medium
Metacognitive Strategies	Q1, Q2, Q3, Q7, Q8, Q9, Q13	3.08	.632	medium
Determination strategies	Q11, Q12, Q19, Q23, Q26, Q28	2.93	.612	medium

Table 5: Descriptive analysis of VLS (category) used by the participants (n=200)

VLS item analysis

To gain a deeper understanding of VLS used by participants, item analysis was done and is presented in Table 6. The results showed that participants were, in general, medium VLS users ($M = 3.12$). Of 30 items on vocabulary learning strategy, the participants' responses to the MET (items 3, 7 and 9), SOC (items 6 and 17), COG (items 18 and 21), MEM (items 24 and 27) were high, meaning the average mean was above 3.5. likewise, although most of the items were reported as used at medium frequency, their frequency in using the following items (e.g., 4, 8, 19 and 23) were low.

Some of the highly used strategies by current participants were 'I watch TV programs, movies, etc. in English to improve my vocabulary' (item 3), 'I read books in English regularly to improve my vocabulary' (item 7), 'I follow English directions to perform various tasks (reading recipes, following instructions, etc.)' (item 9), 'I write letters/chat to people/friends/family in English' (item 6), 'I ask teachers the meaning of unknown words' (item 17), 'I learn words through verbal repetition' (item 18), and 'I make a list of some difficult words' (item 21).

Category	Item	Strategies	Mean	SD	Frequency
MET	1	I practice by doing vocabulary exercises.	3.38	0.86	medium
MET	2	I listen to English programs on the radio.	2.50	1.13	medium
MET	3	I watch TV programs, movies, etc. in English to improve my vocabulary.	3.52	1.03	high
SOC	4	I have conversations in English with English native speakers.	2.29	1.03	low
MEM	5	I talk to myself in English (mentally or out loud).	2.82	1.20	medium
SOC	6	I write letters/chat to people/friends/family in English	3.70	1.25	high
MET	7	I read books in English regularly to improve my vocabulary.	3.57	1.03	high
MET	8	I read a newspaper in English regularly.	2.13	1.13	low
MET	9	I follow English directions in order to perform various tasks (reading recipes, following instructions, etc.).	3.61	1.12	high
SOC	10	I ask classmates for meaning.	2.87	1.02	medium
DET	11	I categorize the new words into different groups such as words related to animals, weather, etc.	3.32	1.16	medium
DET	12	I look up English words I encounter during the week in my bilingual or English-English dictionary.	3.45	1.07	medium
MET	13	I play English vocabulary games on my mobile phone to increase my vocabulary.	2.87	1.19	medium
MEM	14	I practice the English vocabulary I have just learned.	3.08	1.01	medium
COG	15	I keep good written records of the new English words I am learning in class or outside of class.	2.79	1.14	medium
COG	16	I practice the new words I have learned in writing.	3.46	0.74	medium
SOC	17	I ask teachers the meaning of unknown words.	3.74	1.25	high
COG	18	I learn words through verbal repetition.	3.62	0.91	high
DET	19	I figure out the meaning of unknown words from context.	2.27	0.96	low
MEM	20	I evaluate what words I have learned after the class/lesson.	2.76	1.06	medium
COG	21	I make a list of some difficult words.	3.75	1.15	high
SOC	22	I ask teachers to give synonyms of the word that I don't understand.	3.46	0.99	medium
DET	23	I look at how a certain word is used differently in a different context.	2.23	1.03	low
MEM	24	I repeat the new words frequently.	3.56	1.06	high
COG	25	I try to learn new words by making it into a sentence.	3.03	0.99	medium
DET	26	I use flashcards to learn new vocabulary.	3.41	1.02	medium
MEM	27	I picture the usage of new words in my mind.	3.54	1.03	high
DET	28	I listen carefully to the teachers when they are explaining new words and use the dictionary to find the meaning.	2.93	1.14	medium
MEM	29	I try to remember the words in a context in which it has been used.	3.07	0.993	medium
SOC	30	I find my mistakes in learning new words and correct them through group work activity	2.91	1.123	medium
Average			3.12		

Table 6: Variation in VLS used by the participants

The relationship between VLS and vocabulary size.

To investigate the relationship between VLS and vocabulary size of participants, the Pearson correlation coefficient was used. The overall analysis presented in Table 7 shows a significant positive relationship between all five VLS and vocabulary size. However, out of the five VLS, determination strategies (DET) had the strongest, though moderate, correlation with vocabulary size ($r=0.57$, $p < 0.01$), and memory strategies ($r=0.25$, $p < 0.01$) had the weakest correlation with vocabulary size.

	Test Score	Cog	Soc	Mem	Met	Det	
Test Score	Pearson Correlation	1	.429**	.375**	.255**	.401**	.565**
	Sig. (2-tailed)		.000	.000	.000	.000	.000
	<i>N</i>		200	200	200	200	200
COG	Pearson Correlation		1	.791**	.534**	.585**	.600**
	Sig. (2-tailed)			.000	.000	.000	.000
	<i>N</i>			200	200	200	200
SOC	Pearson Correlation			1	.538**	.564**	.578**
	Sig. (2-tailed)				.000	.000	.000
	<i>N</i>				200	200	200
MEM	Pearson Correlation				1	.608**	.448**
	Sig. (2-tailed)					.000	.000
	<i>N</i>					200	200
MET	Pearson Correlation					1	.675**
	Sig. (2-tailed)						.000
	<i>N</i>						200
DET	Pearson Correlation						1
	Sig. (2-tailed)						.000
	<i>N</i>						

Table 7: Result of Pearson Correlation

Discussion

Several research studies have claimed that vocabulary size is one of the cardinal aspects of second language acquisition (Koizumi & In'nami, 2013; Matthews & Cheng, 2015; Peters & Webb, 2018; Wangdi, 2020). Thus, this study has investigated the estimated vocabulary size of the Bhutanese students, VLS in practice, and the relationship between VLS and vocabulary size. Although the design of this study was context-dependent, the findings and discussion presented in this paper may potentially help in understanding the importance of vocabulary size and VLS in contexts similar to those of the current study where English is learned as a foreign language. Nation (2013) had estimated that the second language learners should acquire at least 3000 most frequently used words with six years of exposure to the target language. However, the result of the current study indicated participants having only 83.16% of vocabulary coverage of the 3000 most frequently used words though they had around 6-7 years of exposure to the English language. This suggests that Bhutanese secondary school students, in general, lack the required vocabulary size to be able to participate in meaningful conversation (Adolphs & Schmitt, 2003). Additionally, there was a significant difference in vocabulary size and VLS in practice between the two selected groups: rural and urban in this study. This should not be surprising since other studies have already established that urban school students perform better than their rural counterparts (Hossain, 2016; Reaisi et al., 2020; Soebari & Aldridge, 2012). Urban students were found to have significantly higher vocabulary sizes compared to rural students (Vu, & Peters, 2021). This could be because of the frequency in which these students were subscribed to practice VLS. The findings revealed urban students to be more frequent VLS users compared to rural students. That said, although it is inevitable to narrow down the gap of knowledge divide between urban and rural students as several factors are at play, this study suggested EFL teachers and students, particularly the Bhutanese, should give a closer look into VLS provided in this paper. As this study found urban students using VLS more frequently and also with higher vocabulary size, there seems potential in which VLS in practice plays a vital role in learning English vocabulary.

As for the VLS in practice, out of the five different strategies, the cognitive strategies were reported as the most frequently used VLS by participants. The finding was consistent with Rabadi and Al-Muhaissen (2018) and Suwanarak (2019), but not with Al-Khresheh and Al-Ruwailli (2020) and Khokhar and Sangi (2019) who posited memory strategies as one of the most used VLS by second language learners. The frequent use of the cognitive strategies by participants revealed that participants were inclined to self-initiate vocabulary learning strategies, such as making a list of difficult words, learning words through verbal repetition, and practicing the new words learned in writing. A possible reason could be that most of the cognitive strategies are related to the most common vocabulary learning methods and tasks implemented in the classroom (see Table 4). On the other hand, the determination strategies were reported as the least used strategies by participants. This could possibly be attributed to their age and inadequate vocabulary size to carry out higher-level linguistic tasks like 'figuring out the meaning of unknown words from the context' and 'looking for the unknown words in a different context'. Ellis (2010) highlighted that novice L2 learners cannot carry out the tasks which require deeper processing linguistic ability. Nonetheless, VLS items analysis indicated participants having positive attitudes towards English language learning. There was a clear indication of an attempt made by learners, especially from those in urban school, to improve their English vocabulary by using different types of VLS. Finally, many studies have shown a strong positive relationship between VLS and vocabulary size, implying the potential use of VLS in improving vocabulary (e.g., Alahmad, 2020; Khatimah, 2018). This relationship was affirmed by the present study as well. A significant correlation was found in this study between all the listed strategies (COG, SOC, MEM, MET, and DET) and vocabulary size. The findings of this study rejected the findings of SettarAbid (2017) where no relationship between VLS and vocabulary size was found. Taking into account these findings, English language teachers and students are suggested to implement VLS extensively and correctly to maximize the vocabulary size of learners. The belief is that strategic learners are likely to have better knowledge of the target language (Gu, 2010; Kafipour et al., 2011; Lessard-Clouston, 1994; Sanaoui, 1995). Further, learners with rich vocabulary size are associated with having better language skills (Kafipour et al., 2011; Tilfarlioglu & Sherwani, 2018). Therefore, the simplest step towards the betterment of the English language competency in ESL/EFL contexts seems to be considering a change in vocabulary teaching and VLS based on research evidence to improve learners' language proficiency.

Conclusions and Implications

The present study investigated the vocabulary size of Bhutanese secondary students, difference in vocabulary size and vocabulary learning strategies employed by rural and urban Bhutanese secondary school students, and finally the relationship between vocabulary size and vocabulary learning strategies using quantitative research design. In doing this, our first finding revealed that the average vocabulary size of the participants fell below the required threshold to be able to effectively communicate in the target English language. The participants had acquired approximately 2495 out of 3000 most frequently used words in English, indicating 83.16% vocabulary coverage only. Second, there was a significant difference in favor of urban students in their vocabulary size and vocabulary learning strategies in practice. Urban students had significantly higher vocabulary size and were more inclined towards using vocabulary learning strategies compared to rural students in this study. Furthermore, the study also found that there was a significant relationship between VLS tested in this study and vocabulary size.

The findings of the current study can be implicated both theoretically and practically in the field of foreign language teaching and learning. As to the theoretical aspect, and according to the literature that could be accessed, this is the first study that attempted to investigate the Bhutanese secondary students' baseline vocabulary size and VLS in practice. The findings of this study could be considered significant because they provide the basis for future research. Future research studies should examine factors that inhibit vocabulary size development of students in Bhutanese secondary school students as well as those in other parts of the world. This could throw light on the way student use of VLS differs from one context to another. While students in the Bhutanese context were most frequently inclined to use cognitive strategies, the literature has indicated that students in other contexts frequently use memory strategies to learn vocabulary (e.g., Al-Khresheh & Al-Ruwailli, 2020; Khokhar & Sangi, 2019). Therefore, we suggest readers be careful before

generalizing the present findings. It is that the most suitable VLS for students in their respective contexts be examined before implementing it for the best practice.

As for practical implications, first, there exists a disparity of vocabulary size between urban and rural students. The Bhutanese urban students have significantly greater vocabulary size than rural students. It is not surprising because urban students were found to use VLS more frequently than rural students. The findings indicated that if students adopt VLS, they could have better vocabulary size. This implies that English language teachers in rural schools could be encouraged to incorporate strategies that could provide opportunities for students to adopt VLS as mentioned in this study. Further, policymakers could consider the urgent need for teachers in the rural setting to have supportive environments for the students to utilize VLS. This study also found that the Bhutanese secondary school students are medium VLS users. Alahmad (2020) have suggested that there is a strong positive relationship between VLS and vocabulary size. Likewise, Memiş (2018) has asserted that VLS is one of the effective steps to improve the vocabulary size of the students. Therefore, the students are suggested to use VLS extensively to improve English vocabulary size. Additionally, teachers are recommended to employ explicit strategies that encourage the use of VLS for vocabulary learning.

Finally, the findings of this study suggested that although determination strategies were moderately correlated with vocabulary size, it was the strongest among the other five strategies. Therefore, teachers and students are recommended to look closely into this matter and implement it in practice. For instance, adopting determination strategies such as helping students to categorize words in different groups (i.e., animals, things, etc.), encouraging students to frequently use English-English dictionaries, helping students to learn and compare words in different contexts and texts, and using flashcards in the classroom may help students learn vocabulary better. However, the participants in the selected context most frequently used the cognitive strategies. Among many cognitive strategies, participants reported using VLS such as watching English TV programs, chatting in English, reading instructions in English, asking teachers for the meaning, repetition of new words, listing difficult words, and generating a mental picture of the words as the most frequently used to help improve their English vocabulary knowledge. A potential implication of this finding is the need for teacher education programs to include training for teachers to implement classroom practices—a few of which are mentioned previously—that nurture the use of determination strategies.

Limitations and future research

As in any other studies, this study had some limitations. Firstly, the design of the study provides no empirical evidence on effectiveness of VLS on vocabulary size. Therefore, we suggest future researchers to conduct empirical studies to build on this present study. Secondly, the sample size of this study was small. Conducting a similar study with a bigger sample size may give more accurate vocabulary size of the Bhutanese students. Finally, a careful reading of literature concerning the English language teaching in Bhutan revealed that the Bhutanese educational setting is seriously suffering from pedagogical and empirical research studies in the areas of English language teaching and learning. This has somehow limited the present study when giving references concerning the English language teaching and learning in Bhutan. Thus, we recommend future researchers to explore English language teaching related areas in Bhutan.

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