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Schema Activation and Krashen's Comprehensible Input in Reading and Language Instruction

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Abstract

The study looks at the processes of schema activation and the application of Krashen's Comprehensible Input Hypothesis (ci+1) in online class. The study relies primarily on schema theory to find out how essential reading aspects integration would help Thai university students immerse themselves in learning new vocabulary. More than eighty Business English major students with different levels of English proficiency were assessed using the benchmarks for evaluating the effects of utilization of reading and language instruction during the second semester of 2020 academic year. The learners' reactions and results of their performance based on the application of essential reading abilities in reading instruction, including the transition from one activity to another opened an opportunity to consider the application of this strategy in the university for EFL teachers. The article is summarized by providing recommendations to reinforce the utilization of schema activations and utilization of CI+1 as necessary tool for improving reading comprehension of learners to match with Common European Framework of Reference (CEFR) commercial learning materials.

Keywords: Schema Activation, Comprehensible Input, Language Instruction

1. Introduction

The paper presents the results of the study which was conducted to 86 second year students who were taking Business English in Multimedia subject at Southeast Asia University (SAU) during the second semester of 2020 academic year. The main objective of the research is to describe how the essential reading abilities such as mechanical aspect, meaning aspect, and metacognitive aspects are being observed in class and explore the benefits they provide to the reading acquisition of students. This study will also focus on the potential value of integrating Krashen's (1982) Comprehensible Input Hypothesis to match with Common European Framework of Reference (CEFR) commercial learning materials purchase decision. The CEFR levels for Business English majors from 1st, 2nd, 3rd and 4th year are: A1 (basic), A2 (elementary), B1 (pre-intermediate), and B2 (intermediate), respectively.

By using the CEFR benchmarks as the standard for being internationally recognized medium for choosing the appropriate level of textbooks for learners' proficiency, it is somewhat undeniably difficult for lecturers and students. Pabres, Assavatesamongkol, & Hemara (2021) cite in their study that the students' levels of language proficiency at SAU have not been assessed based on international norm of college admissions (e.g. entrance examination, basic English language proficiency test, and strict scholastic background screening). At SAU, anyone can enroll and choose the course that the student wishes to take without being rigorously screened or tested if they would qualify or not.

The study was conducted via MS Teams platform. The integration process for each aspect of essential reading abilities was set for an hour. The explanation of the vocabulary was done by activating the students' schema using the following words:

ubiquitous computing

biometrics

synchronized

invisibly

embedded

pervasive

These words were all explained in English including intermittent insertion of Thai words while showing corresponding pictures. Because of these pre-reading tasks, the vocabulary was easily and accurately pointed out by the students based on the pictures except for the word “*ubiquitous*”. The pre-reading activity lasted more than the expected time because of the language used in class. In contrast, when this type of teaching does not involve pictures, explaining new vocabulary to learners would last for more than an hour before moving to the next activity.

Pabres et.al (2021) claims that input is paramount to students' learning. When the input provided is way beyond the students' reach, there is a chance that learners' may be overwhelmed. On the other hand, the findings also pointed out to avoid the information that are too close to student's level that they may not be challenged at all (*ibid*).

When introducing a concept or story, it is important for the teacher to call attention to aspects of the concept or story that may connect to the reader's prior knowledge Rosenblatt's (1978). If little or no prior knowledge exists, it must be built. Pedagogy's theory of reader response encourages readers to interact with text to construct meaning (*ibid*). Thus, the modality of reading is affected by the particular text type, the aims of the reading and the reading context, (Guerra, 2003).

Vacca , *et al.*, (1996) observe that teachers easily recognize the important parts of a text, but most students don't. Instead, they tend to read every passage in every chapter in the monotonous way. Each word, each sentence, each paragraph is treated with equal reverence. No wonder a gap often exists between the text material and the student (p.105).

In addition, Spor and Schneider (2003) cite that in reading, problem solving often takes the form of the students asking themselves when confronted with a word that they do not know, "*How do I decipher this word?*" This conscious recognition of what one does or does not know is a form of metacognition and empowers students to work independently and systematically in reading improvement. In Pabres' (2015) study of Thai learner's foreign language learning and acquisition, he found out that the behaviors of students play a significant factor in any kind of learning especially when unsupervised.

2. Literature Review

2.1 Schema activation

Bringing learners and text together is not without its risks or its rewards. Without risks, teaching often lacks adventure and innovation (Vacca and Vacca, 1996). When students use reading and writing to learn, there's little room for assign-and-tell practices, passive learning, or students sitting in straight rows with little opportunity for interaction. Teachers who create active learning environments in their classrooms know that something not worth doing isn't worth doing well (*ibid*).

Peterson and Van DerWege's (2002, p. 437) believes that metacognition in reading involves a turning inward—at first purposefully and later automatically—to examine how students comprehend a text so that we can alter our interpretations of it and so elaborate and deepen our understandings. Strategic reading fosters metacognition in readers because it implies a systematic and structured approach to comprehending text. Harvey and Goudvis (2000, p. 5) emphasized that, “strategic readers address their thinking in an inner conversation that helps them make sense of what they read; they search for the answers to their questions”.

Spor, *et al.*, (2003) emphasized that in order to effectively help a student, teachers must first determine the nature of the student's reading problem and apply the three reading cues: graphophonemic, syntactic (*structure cues*); and semantic (*meaning*) must be applied.

Spor, *et al.*, (n.d.) explained the following aspects in their research as follows:

“Graphophonemic or *grapho* stands for the written letters (*graphemes*) that the reader sees, and phonemic stands for the language sounds (phonemes) of those letters. These sounds need not to be audible. They may exist in reader's mind. The reader is learning the alphabetic code that represents the oral language in writing. When a reader combines the multiple sounds, the reader is said to be decoding. Graphophonemic cues do not refer to the illustrations in a text, but rather to the letters, words, punctuation marks, and even the size of the print (*ibid.*)”

Syntactic or *structure* cues relate to the structure and grammar of language. Typically, the pattern of the English language is subject, verb, and object. Structure cues or syntactic cues are based upon the word order, or syntax of the text. Students use the structure of language in the text, interpreted through their own knowledge of language—to make sense of the text.

Semantic or *meaning* cues often depend upon vocabulary development as well on the primary cues of who, what, where, when, and how. These cues involve students' prior knowledge. Semantic (*meaning*) cues come from the text itself, from the illustrations and/or from the reader's prior knowledge. Students need to combine their background knowledge with the information from the text to construct meaning. Students learn informally from their life experiences; and while they have some commonalities, there may also be wide variations in an individual classroom. Comprehension occurs when the reader's informal and formal experiences interact with text, and all of the semantic cues that exist in the text.

2.2 Krashen's Input Hypothesis

Schütz (2019) describes Krashen's (1982) Input Hypothesis as the latter attempt to explain how the learner acquires an L2. This theory relates to acquisition, not the learning of a language and is the progression along the natural order as the learner improves and receives input that is a step beyond his/her current stage of linguistic competence.

Krashen (1982) maintained that the learner improves and progresses along the natural order when he/she receives L2 input that belongs to level $i+1$. He also mentioned that not all learners can be at the same level of linguistic competence at the same time, therefore, the natural communicative input is the key to designing a syllabus to ensure that each learner will receive some $i+1$ input that is appropriate for his/her current stage of linguistic competence.

Comprehensible input helps students avoid undesirable hindrances in learning and it encourages success through the correct alignment of instructional structures that are neither problematic nor too complicated to understand for their level.

Based on the literature review, the gap between text and the reader can be narrowed and addressed by using the $CI+1$ and through the activation of their schema by utilizing essential reading abilities such as mechanical aspect, meaning aspect, and metacognitive aspect.

3. Discussion and Data Analysis

The study was carried out in the second semester of 2020. The study included students from Business English department at Southeast Asia University. Currently, there are 86 students attending the class and all of them are studying Business English in Multimedia. Despite the fact that learners are all English majors, it is still difficult for them to understand some words since the medium of instruction is in English. (Some parts of the teaching activities, dialogues, questions, and example of teaching materials will be shown in the succeeding pages.)

The evaluation tools used in the research is Reoperez's (2016) Rubrics for Assessing Reading and Language Instructions which specify the following: mechanical aspect, meaning aspect, and metacognitive aspect. Research variables in this research are the teaching approach (*student centered*) by using the essential aspects of reading abilities (independent variable); and the students' performance (dependent variable) during the paired role-play based on the reading

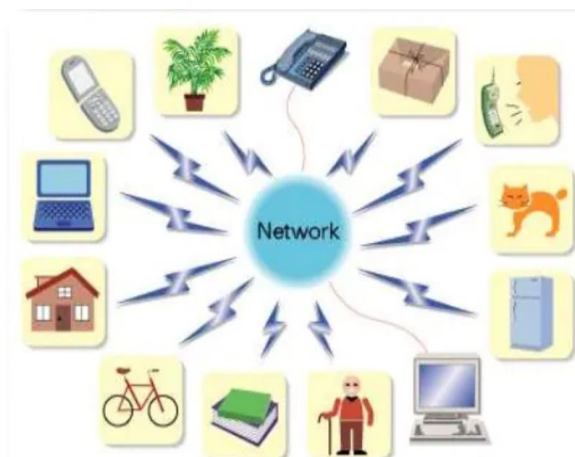
activity. Additionally, Krashen's Comprehensible Input was also integrated to overcome difficulties in foreign language learning. Krashen (1982) highlights the importance of CI+1 as not all learners can be at the same level of linguistic competence at the same time.

4. Results

The principle for classroom practices framed by Krashen are very simple. Teachers are instructed to provide understandable input for students to read and listen to. It is also paramount that the teacher's language (TL) is easy to understand, therefore the input will also render understandable. In Table 1 (a - d), prior to the reading activity, the subject showed different types of photos for **ubiquitous** and asked students to identify the appropriate word for the pictures through mechanical aspect. (See illustration 1)

Table 1 Results of teaching new vocabulary on mechanical aspect and what it does.

MECHANICAL ASPECT	YES	NO	N/A
a. Activates the schema of the students either through a question, a statement, or an opinion before any teaching is done.	√		
b. Provides learning activities that integrate the learning modalities, i.e., the auditory, visual, and kinesthetic modalities. E.g., watching a film or listening to a song and combining it with writing or other activities that make use of other modalities.	√		
c. Teaches sight vocabularies (for emergent literacy classes only).			√
d. Provides learning activities that helps develop mastery of oral language.	√		



Picture 1: Ubiquitous (Image: Elshafee, 2016)

Teacher: What is this? (*scrolling to a picture*)

Students: *A network?*

Teacher: What does it mean when you said network?

Students: (*Prolonged silence*)

Teacher: It means *our daily-life is interconnected online*.

Students: Hmmm.... (*Collective silence again*)

Teacher: Please. Give examples of ubiquitous computing, then.

The remaining part of schema activation was very productive because most of the discussion was conducted using pictures. It was just a matter of minutes and seemed all of the students understand the meaning of the vocabulary. Pronunciation drills were also included to help the students get familiarized with the unknown letters and words (*graphemes*) and their corresponding sounds (*phonemes*).

Table 2 Results of teaching new vocabulary on meaning aspect and what it does.

MEANING ASPECT	YES	NO	N/A
a. Helps the students make connections between their life experiences with the text that they are reading through activities and discussion.	√		
b. Unlock difficult terms/concepts prior to learning.	√		
c. Integrates vocabulary learning all throughout the lesson.	√		

d. Integrates listening comprehension either by asking questions or pointing out to the meaning of a word while reading a text aloud.	√		
e. Helps the reader construct meaning out of the text through direct guidance, e.g., telling them to stop when they don't understand what they are reading, asking them to focus on thought chunks instead of individual words.		√	

Above **(Table 2)** shows how the students were assisted of unlocking difficult vocabulary in the text that they are about to read. The approach used in unlocking difficult vocabulary is purely student-centered, and later the students were asked to give some examples on their own through the following questions.

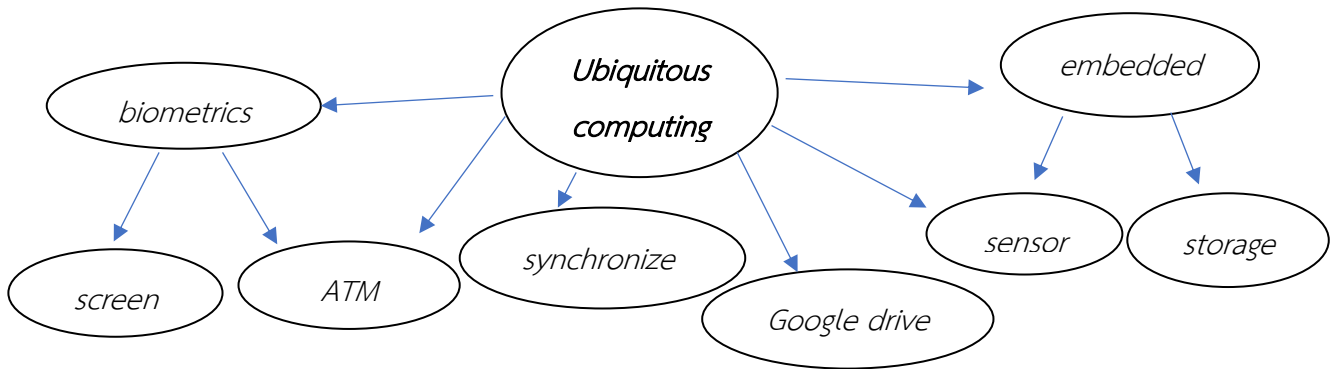
1. Have you ever experienced being disconnected from the Internet?
2. What did you feel being unable to browse the websites?
3. What do you call it when you can access your files using your cloud storage on multiple devices?
4. Give examples of ways to access your files without using a physical storage.
5. What's the difference between a camera that uses a film and a digital camera?
6. What kind of technology do they have. Give examples.

Answering these questions orally for some low level students rendered them frustrated especially during online class. Most of them just ignored the questions. On the other hand, to other students under the medium to high level of language competence, they are proud to volunteer and answer most of the questions. These affirms Krashen's (1982) Affective Filter Hypothesis that most students in the low level category might be encountering self-doubt, low self-esteem, and high level of anxiety and tend to block the $CI\ i+1$ being provided. Krashen's (1982) Affective Filter hypothesis is also recognizable because most low level students might have raised their "affective filters" from the questions, thus diminishes the effectiveness of using the $CI=i+1$ principle.

Considering the duration and activities in the class as a whole, some metacognitive sub-aspect where not followed during the class (Table 3). Instead, a graphic organizer (*Illustration 2 Semantic web*) was used and asks the students what examples they can give regarding the new words.

Table 3 Results of teaching new vocabulary on metacognitive aspect and what it does.


METACOGNITIVE ASPECT	Yes	No	N/A
a. Asks questions that make the students think about how they arrive at a particular answer.		√	
b. Uses graphic organizers such as semantic webs, Venn Diagrams, story pyramid, story map, semantic maps, and the likes in teaching.	√		
c. Organizes small-group activities where the students can interact with each other.	√		
d. Provides direct instruction*	√		
e. Encourages students to respond to the text using their experiences and prior knowledge.	√		
f. Points out to the students the aesthetic aspects of the text, e.g., interesting storytelling technique, lyrical quality of the poem, vivid descriptions, memorable lines/dialogues, open-ended endings, etc.		√	



Picture 2: Semantic web (modified and enhanced for visual purpose)


This graphic organizer above visually depicts concepts and relationships among words discussed. Students were able to contribute many words during the discussions, but what are presented in Illustration 2 are the target words which the subject highlighted as the learners continued their reading activity. There are similar difficulties during independent reading in terms of comprehension with the new vocabulary; students do not totally connect the ideas and because of the time constraint, the lesson proceeded to the next part where students answer simple questions to measure what they understood. The materials for this reading activity are integrated with MS Forms online practice.

1

Which one is not an example of biometrics? 
(1 Point)

- ☐ A person who can access a system by using his fingerprint.
- ☐ A man who can enter a room by using his eyes.
- ☐ A person uses an ATM card to withdraw money.

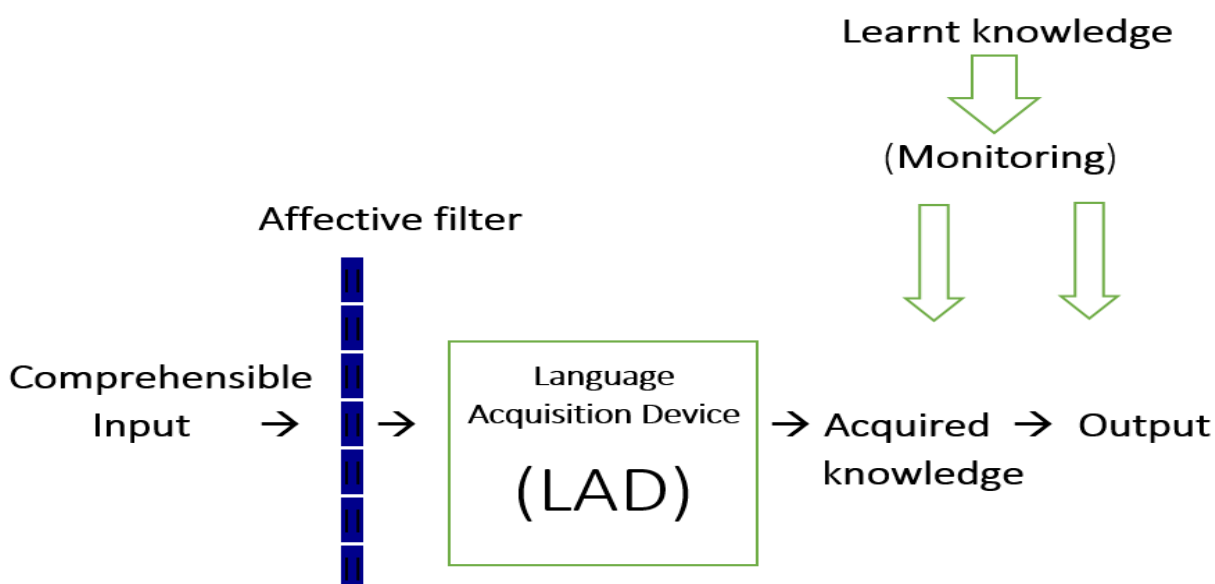
5

Your own idea: Give 3 examples of ubiquitous computing or systems. Explain how people use them in everyday life. (Don't use the examples in the article.) 
(11 Points)

Enter your answer

Picture 2 Sample questions via MS Forms (number 1 and 5)

On the other hand, using the Input Hypothesis $CI=i+1$ combined with online quizzes also improve the effectiveness of comprehensible input and progress of students for self-study. As for the applications of the $CI+1$, it works through scaffolding task so students don't feel that they are being left alone while doing their activities. If $CI=i+1$ is routinely used through spoken and written instructions and delivered in a sympathetic way, students' anxiety tend to decrease. Krashen's (1982) Affective Filter hypothesis is also recognizable because most low level students might have raised their "affective filters" from the questions, thus diminishes the effectiveness of using the $CI=i+1$ principle. (See Illustration 3.)



Picture 3 Combined Model of Second Language Acquisition and Productions (Krashen, 1985)

The results of the quiz using the same approach showed different results when the students were given the online quiz. For example, when Student 1 was asked to give an example about the question (see Figure 1, p. 9), Student 1 did not say anything, but when it is time for the online activity, Student 1 performed very well. The remaining part of the session is the conversation part where students work in pairs and create dialogues based on the vocabulary that they learned. This time, the students were required to use the vocabulary in the pre-reading activity on their own by formulating questions and sentences.

Table 4. Summary of students' correct responses in the online quiz after the discussion

New words and phrases	Results	
	n=67	%
1. biometrics	46	68.6
2. pervasive	36	53.7%
3. invisibly embedded	24	35.8%
4. synchronized	45	67.1
5. ubiquitous computing	66	98.5%

5. Conclusion and Recommendations

The results of the study revealed that students' prior knowledge and acquisition of new knowledge were stimulated when all steps of schema activation prior to-- and during the teaching session were introduced. This helped the students understand some context of the reading part at a faster rate. Some of the students, despite lacking of prior knowledge about the new words applied their metacognitive skills because of the CI+1 and the schema activation. These helped them understand the vocabulary; thus, the learners were able to connect the story to their own experiences based on semantic cues of the illustrations (See Illustrations 1 & 2, pp. 6 and 9).

Secondly, the students' backgrounds and the language used in the instruction played a vital role in reading acquisition. Most of the participants never practice what they learned after class or engage in any type of conversation to foreigners in English, not to mention the authors and other teachers in the university—also talk to them in Thai language. The insertion of Thai language during the discussion, and being familiar to the English accent were easily discriminated by the participants. It made the students transitioned from comprehending spoken words, one word to phrases, and to sentences.

Thirdly, the existence of huge difference in students' reactions even with all those reading strategies applied. It appears that the most difficult part for the students is to understand syntactic

cues when a non-Thai teacher explained new words. The opposite reactions appeared when some Thai words were used during the teaching process.

Lastly, the use of graphic organizer and the extensive use of images that clearly illustrate the information in the text provided the students opportunity to brainstorm ideas. In this part, the students did not even have to read the entire passage; only positive manifestation was observed during the class and their scores.

Recommendations

The results of this study manifested the positive influence provided to the students when the essential reading aspects and CI+1 are observed in class. It is recommended that all teachers, not just for the reading class, understand these aspects and integrate an active learning environment. The results also open the opportunity to apply these findings when purchasing books based on the CEFR levels. It is recommended that lecturers should consider the language proficiency of students to avoid mismatched materials against student's level.

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