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Input-Based Incremental Approach versus Image Schema Instruction for Improving Preparatory Schoolers' English as a Foreign Language Vocabulary Acquisition

Dr. Mohammad Abu El-Magd Mohammad Abu El-Magd
Associate Professor of TEFL, Ismailia Faculty of Education
Suez Canal University, Egypt

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المريد الاللكتروني للباحث : mohammad.abu.elmagd@edu.suez.edu.eg

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النهج التدريجي القائم على المدخلات مقابل التدريس بالمخططات المصورة لتحسين إكتساب مفردات اللغة الإنجليزية كلغة أجنبية لدى طلاب المدارس الإعدادية

المخلص

هدفت الدراسة إلى تحسين إكتساب مفردات اللغة الإنجليزية كلغة أجنبية لدى طلاب المرحلة الإعدادية بالمدارس الحكومية والمقارنة بين طريقتين فى تدريس المفردات: النهج التدريجي القائم على المدخلات و التدريس بالمخططات المصورة من أجل تحسين اكتساب المفردات بصورة أفضل. وكان التصميم التجريبي للدراسة هو تصميم الثلاث مجموعات للنهج شبه التجريبي. وكانت عينة الدراسة مقسمة على ثلاثة مجموعات لثلاثة فصول من ٣٣ طالب: مجموعة ضابطة تكتسب المفردات بالممارسات التقليدية لتعليم المفردات ومجموعتين تجريبيتين إحداهما تكتسب المفردات باستخدام النهج التدريجي القائم على المدخلات والاخرى تكتسب المفردات باستخدام التدريس بالمخططات المصورة. وهناك أداتان من إعداد الباحث وهى إختبار مفردات لقياس إكتساب الطلاب لها، وثلاثة إستمارات لإستطلاع رأى الثلاثة مجموعات فى ضوء فهم المفردات وتذكرها وممارستها من أجل إكتسابها بصورة أفضل. وأسفرت نتائج الدراسة عن التأثير الإيجابي المرتفع لكل على حده من طريقتين التدريس قيد التجريب على تحسين إكتساب المفردات لدى المجموعتين التجريبيتين وكذلك عند مقارنة كل منهما بالممارسات التقليدية المتبعة لدى المجموعة الضابطة. ومع ذلك ، فإنه لا توجد طريقة لها تأثير إيجابي أكثر إرتفاعا من الاخرى عند مقارنة حجم تأثير كلا من الطريقتين التجريبتين معا. كما كانت كل طريقة منهما مرضية ومفيدة لدى المجموعتين التجريبتين نظرا للمزايا والسمات الخاصة التى تقدمها كل طريقة منهما من أجل إكتساب مفردات اللغة الإنجليزية كلغة أجنبية بصورة أفضل.

الكلمات المفتاحية: نهج التدريجي القائم على المدخلات ، التدريس بالمخططات المصورة ، إكتساب مفردات اللغة الإنجليزية كلغة أجنبية.

ABSTRACT

This research aimed to improve the EFL vocabulary acquisition among preparatory schoolers at public schools and to compare between Input-Based Incremental Approach (IBI) and Image Schema Instruction (ISI) for better EFL vocabulary acquisition. The research design was three group pre and post-test quasi-experimental design. The participants were divided into three groups of 33 1st year preparatory schoolers per class: IBI experimental group, ISI experimental group and control group. Two tools were developed, validated and implemented by the researcher: a vocabulary test to examine schoolers' vocabulary acquisition and three opinionnaires to elicit the three groups' opinions in terms of understanding, memorizing and practicing vocabulary for better acquisition. It was concluded that IBI and ISI had high positive effects on improving the participants' vocabulary acquisition when testing their effect sizes individually and with respect to the control group's conventional classroom vocabulary teaching practices. But when compared to each other in effect size, neither IBI nor ISI had a higher positive effect than the other. IBI and ISI were beneficial to improving the EFL vocabulary acquisition among the experimental participants for the special features and qualities provided by each of them for better vocabulary acquisition.

KEY WORDS: Input-Based Incremental Approach, Image Schema Instruction, EFL Vocabulary Acquisition.

Background

Without vocabulary, nothing can be conveyed since vocabulary constitutes the crucial organ and blood of language as claimed by Harmer (2007, pp. 21-22). Therefore, vocabulary is the core of English as a Foreign Language (EFL) learning for its paramount determinacy of the language communicative competence (Guan, 2020). Accordingly, vocabulary teaching should allow learners to acquire EFL vocabulary efficiently in a way that helps them profoundly recall the target vocabulary lastly.

Of such helpful vocabulary instruction pedagogies are Input-Based Incremental Approach (IBI) and Image Schema Instruction (ISI). IBI is an evidence-based approach to vocabulary instruction that focuses on how meaning-oriented language instruction can provide learners with what they need for successful EFL vocabulary acquisition (Barcroft, 2018). It asserts that most vocabulary acquisition occurs implicitly within context as learners acquire meanings of words gradually and unconsciously (Lewis, 2020). On the other hand, ISI focuses on the explicit teaching of vocabulary via image schemas that work as mental structures offering a way to ground cognitive processes such as drawing inferences, understanding and reasoning (Hedblom, Kutz & Neuhaus, 2015).

Context of the Problem

In the preparatory stage at Egyptian public governmental schools, schoolers encounter difficulties while learning EFL vocabulary in a way that obstructs their vocabulary acquisition as extrapolated by the results of the preliminary EFL vocabulary test. That test was administered in the 2nd term of the academic year 2021-2022 in three classes of 42 1st year preparatory schoolers at three public governmental schools. The test results revealed schoolers' low EFL vocabulary acquisition. Those results were confirmed in the pilot open interviews with the ELT supervisors at Ismailia Inspectorate as well as EFL teachers and senior teachers at three public governmental schools in Ismailia.

Such interviews were carried out by the end of the 2nd term of the academic year 2021-2022 in order to figure out the reasons for preparatory schoolers' poor EFL vocabulary acquisition. Questions were asked about preparatory schoolers' ability to recall the learnt vocabulary as well as the role of EFL classroom practices to allow for successful EFL vocabulary acquisition. The findings showed three main deteriorative reasons for the preparatory schoolers' unsuccessful EFL vocabulary acquisition. First, the EFL classroom teaching practices are translation-centered and rehearsal-based as they ignore vocabulary contextualization for long-term retention and successful recall. Second, EFL classroom practices do not follow the visual-memory associated techniques that focus on the visualization of

abstract vocabulary in learner' brain; however, teachers make preparatory schoolers slog through lists of vocabulary. Third, vocabulary practice is neither intensive nor extensive. It is not intensive since vocabulary drills are given as home assignments that are not reviewed by the teacher for constructive feedback. It is not extensive as vocabulary is not reviewed repeatedly over tasks with escalating difficulty.

In this respect, IBI and ISI were recommended as possible solutions for better vocabulary instruction that could help preparatory schoolers acquire the target EFL vocabulary more successfully. IBI was chosen to overcome the first and third deteriorative factors as it calls for presenting vocabulary implicitly within reading input as well as extensive vocabulary practice via tasks with gradual levels of difficulty that end with vocabulary use for highly effective vocabulary acquisition. ISI was also selected to put an end to the first and second deteriorative factors as it focuses on explaining vocabulary explicitly via schematic visuals that are multimodal and promote the embodiment of vocabulary knowledge in learners' cognitive schemata for long-term vocabulary retention and easy recall leading to better vocabulary acquisition.

Consequently, IBI and ISI were used separately for EFL vocabulary instruction to compare their effects on improving 1st year preparatory schoolers' EFL vocabulary acquisition.

Statement of the Problem

In spite of the pivotal role of vocabulary in language learning, findings of the pilot open interviews confirmed the 1st year preparatory schoolers' low EFL vocabulary acquisition which was extrapolated from the preliminary vocabulary test.

Questions

This research sought to find answers to the following questions:

1. What are the features of the Input-Based Incremental Approach for improving the preparatory schoolers' EFL vocabulary acquisition?
2. What are the features of the Image Schema Instruction for improving the preparatory schoolers' EFL vocabulary acquisition?
3. What is the effect of Input-Based Incremental Approach on improving the preparatory schoolers' EFL vocabulary acquisition?
4. What is the effect of Image Schema Instruction on improving the preparatory schoolers' EFL vocabulary acquisition?
5. To what extent will Input-Based Incremental Approach versus Image Schema Instruction affect the preparatory schoolers' English vocabulary acquisition?

6. How are the conventional classroom teaching practices as well as the Input-Based Incremental Approach vs Image Schema Instruction satisfactory and beneficial to the 1st year preparatory schoolers' English vocabulary acquisition?

Hypotheses

1. There is a statistically significant difference between the mean scores of the IBI experimental group's and control group's EFL vocabulary acquisition in the post-administrations of the EFL vocabulary test in favor of the IBI experimental group.
2. There is a statistically significant difference between the mean scores of the pre- and post-administrations of the EFL vocabulary test among the 1st year preparatory schoolers of the IBI experimental group in favor of the post-administration.
3. There is a statistically significant difference between the mean scores of the ISI experimental group's and control group's EFL vocabulary acquisition in the post-administrations of the EFL vocabulary test in favor of the ISI experimental group.
4. There is a statistically significant difference between the mean scores of the pre- and post-administrations of the EFL vocabulary test among the 1st year preparatory schoolers of the ISI experimental group in favor of the post-administration.
5. There is no statistically significant difference between the mean scores of the IBI experimental group's and ISI experimental group's EFL vocabulary acquisition in the post-administrations of the EFL vocabulary test.

Objectives

The current research aims to:

1. Improve the 1st year preparatory schoolers' EFL vocabulary acquisition.
2. Compare between IBI and ISI for better EFL vocabulary acquisition.

Delimitations

1. 1st year preparatory schoolers at a public governmental school in Ismailia.
2. EFL vocabulary items of Units 1,2,3 in the 1st year preparatory set book of the 1st term "New Hello" assigned by the Egyptian Ministry of Education in the academic year 2022-2023 for public governmental schools. In every unit, around 15-20 new vocabulary items are introduced in reading texts as mentioned in the "New Hello" teacher's guide (Chilton, Darrand & Hart, 2019, p.4)

Review of literature and related studies

1. Vocabulary

1.1 Rationale for Vocabulary Acquisition

Vocabulary is an essential part in English language teaching (Pan & Xu, 2011). This is due to the fact that vocabulary supports the four macro language skills and inadequacy of vocabulary knowledge can obstruct language learning (Yu, 2020). From this perspective, effective utilization of language depends ultimately on learners' stock of vocabulary since improvement in language learning can be clearly shown by learning more words and expressions (Abduramanova, 2020).

As for language testing, vocabulary is a measure of learners' language level. The number of words can show learners' potential in language as the single simplest sort of evaluation of where learners are in a language is their acquired vocabulary size (Kaufmann, 2022). This is because vocabulary and comprehension are closely interrelated (Vu & Peters, 2021).

Vocabulary plays an essential role in language communication at the spoken and written levels. For oral communication, human speech is made of words (Yu, 2020). On the other side of communication, the proportion of words known in a text is a significant factor that can affect comprehension (Vu & Peters, 2021). To conclude, successful vocabulary acquisition helps learners to become more independent in language communication (Zhu, 2020).

1.2 Vocabulary Acquisition and Instruction

Vocabulary acquisition is the process of learning new words as it is concerned with how learners expand the number of vocabulary items they understand when learning a new language whether it is a native or foreign language (Alcocer, 2021 and Wollacott, 2022). As English is one of the major languages that contain the greatest number of words, acquiring a sufficient amount of its vocabulary is a formidable task (Schmitt, 2007). In order for learners' successful vocabulary acquisition, making the most of vocabulary instruction requires careful planning for cultivating vocabulary more effectively (Zhu, 2020). Efficient vocabulary instruction falls in any of the following two essential categories as indicated by Pan and Xu (2011).

The first category is related to the strategies of teaching vocabulary in context where sources are identified for presenting new words with their meanings, uses and forms. Here, vocabulary should be introduced repeatedly inside the context of the language input. In this respect, Febrianti (2013, p. 23) refers to the frequent presentation of new vocabulary as a key principle for successful vocabulary acquisition since the more exposure of language learners to key words, the more likely they remember them. Also, Shoakramovna (2021) compared the vocabulary

teaching strategy of using context clues with other strategies such as personalized lists, root analysis and word maps. The findings revealed the better effect of using context clues for learners' competent vocabulary acquisition since it encouraged learners to guess the definitions of words via reading passages and helped learners make connections to such words and remember their meanings via quizzes.

The second category is related to the strategies of creating mental linkages by association for long-term vocabulary retention and smooth recall such as the use of imagery links. Here, Ismail, Zaid, Mohamed & Rouyan (2017) indicated, in their research, the positive impact of using contextual cues such as realia, pictures, illustrations and examples to depict the connection between words and their meanings so as to ease the explanation of new words and key vocabulary among EFL learners.

Accordingly, IBI and ISI were recommended in this research to determine their effects as successful strategies for improving preparatory schoolers' vocabulary acquisition since IBI focuses on contextualized teaching of vocabulary with repeated exposure within language tasks of gradual difficulties in multiple contexts and ISI enhances vocabulary acquisition via image schemas as some sort of mental imagery associative links promoted by word definitions and examples.

2. Input-Based Incremental Approach (IBI)

This section reviewed literature and related studies for IBI in order to answer the first research question.

2.1 Definition

Barcroft (2012, p.3) refers to IBI as an approach to vocabulary instruction that focuses on how target vocabulary is presented to the learners as input and how tasks are designed to support the incremental build-up of different aspects of vocabulary knowledge over time. Fichtner and Barcroft (2019) define IBI as "an approach that emphasizes presentation of target vocabulary in the input and the gradual development of multiple aspects of vocabulary knowledge over time". In light of these definitions and the research variables, IBI can be procedurally defined as "An approach to presenting the key vocabulary via oral spoken meaning-oriented discourse which is based on a comprehensible and illustrated reading input as well as to designing vocabulary tasks of escalating difficulty for incremental build-up practice of different aspects of vocabulary knowledge in a way that improves the preparatory schoolers' EFL vocabulary acquisition".

2.2 Features

IBI can be distinguished as it emphasizes frequent presentation of vocabulary while using meaningful reading input as the key driver for language acquisition (Kaufmann, 2017) as well as the incremental developing of vocabulary knowledge (Barcroft, 2016, p. 22). In their experimental study, Fichtner and Barcroft (2021) proved the positive effectiveness of such distinguished features of IBI in teaching German as a second language vocabulary.

The overall approach is mostly implicit with an element of explicit vocabulary instruction since it calls for vocabulary acquisition via comprehensible reading input with spoken discourse for vocabulary explanation (Lewis, 2020). It provides context where learners can get the use of vocabulary and their meaning (Yaghoubi & Seyyedi, 2017). Hence, IBI promotes both intentional and incidental vocabulary learning (Barcroft, 2016, p.25). However, IBI primarily focuses on vocabulary contextualization which creates an atmosphere in using words in a way that improves learners' vocabulary retention with extensive vocabulary practice to build-up vocabulary knowledge. (Irwandi, Quaidy & Albert, 2018).

This approach is task-based and leads to successful EFL vocabulary acquisition for it depends on the input-based presentation followed by output-based vocabulary practice tasks as shown in the studies conducted by Namaziandost, Dehkordi and Shafiee (2019) as well as Duong, Perez, Desmet and Peters (2021). In their studies, the findings indicated that both input-based and output-based tasks had similar positive significant effects on vocabulary acquisition.

2.3 Tenets

The following are the main principles of effective vocabulary instruction via IBI as indicated by Lessard-Clouston (2014) and Barcroft (2016, pp. 22-23):

- 1. A vocabulary acquisition plan should be developed and implemented.**
- 2. Key vocabulary should be frequently presented in the input.**
- 3. Vocabulary learning should be promoted both intentionally and incidentally.**
- 4. Key vocabulary should be presented via meaning-bearing comprehensible input.**
- 5. Key vocabulary should be presented in an enhanced manner.**
- 6. The forced output should be restricted during the initial stages.**
- 7. The forced semantic elaboration should be limited during the initial stages.**
- 8. Learning vocabulary meanings and usage are promoted over time.**

9. Tasks are gradually and increasingly demanding over time from less to more difficult levels.

2.3 Vocabulary instruction via IBI

Barcroft (2012, pp. 45-48) as well as Fichtner and Barcroft (2019) point out the following common steps in their sample lessons to teach vocabulary via IBI:

1. Identifying the key vocabulary.
2. Defining the target vocabulary clearly as part of oral discourse while reading the input text with learners.
3. Using pictures and illustrations to depict and reuse all of the target vocabulary.
4. Reviewing the target vocabulary by having learners practice the target vocabulary via the following quizzes:
 - a. A matching quiz where learners match the words with their definitions
 - b. A production quiz where learners fill in the blank by writing the forms of target vocabulary after reading their definitions.
5. Allowing learners to discuss the reading topic in pairs or groups by using the target vocabulary.
6. Asking learners to write the new vocabulary arising from the discussions on the board and define them.
7. Initiating a discussion about alternative meanings and uses of the target vocabulary after providing the class with a list of such vocabulary.

2.4 Proposed IBI Framework

In light of Barcroft's sample lesson layout for IBI and according to the tenets of IBI, the following is a proposed framework for using IBI to improve preparatory schoolers' vocabulary acquisition:

Figure (1)

Proposed IBI Framework



(Proposed by the researcher)

According to figure (1), the starting two classes of each unit are input-based when it comes to presenting the key vocabulary within reading texts and the following four classes of each unit are incremental when it comes to the practice of target vocabulary in gradually and increasingly demanding tasks when it comes to the difficulty level of the quizzes that preparatory schoolers engage. Accordingly, there are three main stages for IBI to help preparatory schoolers improve their EFL vocabulary acquisition:

a. Presentation stage:

This stage occurs in the first two 40-minute classes of each unit to present the target key vocabulary of the whole unit implicitly within reading texts of the set book and repeatedly via spoken meaning-oriented discourse. In the discourse, the teacher reads the text and discusses the introduced key vocabulary with the preparatory schoolers via examples from the reading texts and/or by using gestures and realia. Here, the teacher elicits the meaning of the target vocabulary from the schoolers while using illustrations such as pictures and flash cards to clarify and depict them. Then, clear definitions are provided to confirm the schoolers' understanding. Also, different aspects of vocabulary knowledge such as

synonyms, antonyms, collocations and word form (noun, adjective, verb, adverb, preposition) are demonstrated.

b. Practice Stage:

This stage takes place in four 40-minute classes after the first two 40-minute classes of presenting and discussing the unit's key vocabulary with the preparatory schoolers so that there is one task for each 40-minute class. It aims to help them use the target vocabulary repeatedly over time as they are frequently exposed to the target vocabulary while practicing four types of vocabulary tasks with gradual difficulty levels. These tasks include quizzes that are non-graded as they provide preparatory schoolers with constructive feedback for incremental development of vocabulary knowledge in multiple contexts of different types of tasks.

The least demanding vocabulary practice task provides a matching quiz where preparatory schoolers have five matching questions with multiple items in each to join words with their definitions, synonyms, antonyms and/or collocations. Then, a vocabulary practice task of higher difficulty in which schoolers have a passage fill-in-the-blank quiz where they have a list of provided key vocabulary from which they write the missing words in a reading passage. Schoolers have six small reading passages in this quiz. After that, preparatory schoolers practice vocabulary productively in the third and fourth tasks. In the third task, they have pictures attached to key vocabulary. Here, schoolers take a writing quiz where everyone is asked to write between 35 and 45 meaningful sentences in light of the provided pictures by using the key vocabulary and considering their form and collocations. In the fourth and final task, which is the most demanding one, preparatory schoolers take a speaking quiz in which each one is assigned in one minute to provide one-sentence answers orally to three questions related to the topics of the reading and to put two or more key words from a provided list of vocabulary in one sentence orally.

c. Formative Assessment Stage:

This stage aims to check out preparatory schoolers' acquisition of the unit's target EFL vocabulary in a stand-alone 40-minute class following the four vocabulary practice classes as a replacement for the review class of lesson 7 (the unit's final and review lesson). Here, preparatory schoolers take a multiple-choice (MCQ) quiz by the end of each unit. Each MCQ quiz is a graded 40-minute quiz with 45 multiple choice items to ensure the preparatory schoolers' mastery level of target vocabulary acquisition. According to their score in the quiz results, they move on to the next unit if they get 90% or more. Otherwise, they are unsuccessful and need to go back again to acquire the vocabulary of the current unit.

3. Image Schema Instruction (ISI)

This section reviewed literature and related studies for ISI in order to answer the second research question.

3.1 Image Schemas and their benefits

Image schemas are not ordinary images (Gärdenfors, 2007). Ordinary images depict how the world looks like or resembles a mental picture whereas image schemas are more abstract, general and schematic images that represent information about the spatial relations between objects and the surrounding physical movement (Stadler, 2020). Since image schemas are the fundamental ingredient in human cognition particularly the linguistic cognition (Hedblom, Kutz & Neuhaus, 2015), they can be used to represent concepts in an economical and more memorable way without relying on language (Evan & Green, 2006). Thus, acquisition of new information occurs when such information is suitably fitted and well-connected with human cognitive schemata (Khodadady & Elahi, 2012). In this respect, El Yaafouri (2018) states that ISI based strategies are employed to elicit layers of understanding in order to connect existing schema to new academic concepts.

Several experimental researches attempted to test the possible benefits of using image schema theory in EFL classrooms to provide meaningful learning instead of blind memorization. According to Bouchenek's study (2017) on impact of ISI on the acquisition of polysemous prepositions, image schemas can be used as a powerful tool to describe meanings of different language items like prepositions since they help learners go beyond the surface meaning of vocabulary. This is in line with Mitsugi's study (2018) in which the effectiveness of ISI was proved in teaching prepositions.

For other language items, image schema theory was used in Royani's and Lestari's study (2017) to figure out the beneficial usage of image schema theory in teaching phrasal verbs in TOEFL preparation classes. The results pinpointed a significant improvement in the beginner-level learners' mastery of phrasal verbs due to the power of image schemas which embodied the concept of phrasal verbs by constructing their abstract meaning in a concrete visualization arising from human mind and cognitive experiences.

In order for optimal learning of polysemy, Mitsugi conducted a study (2017) in which ISI was compared against the translation-based instruction and proved more effectiveness in teaching polysemous vocabulary because of the explicit explanation about the concept of core meaning and semantic extension that helped learners avoid confusion resulting from overlapping descriptions in the inventory of meanings. In Yu's study (2022), the effects of image schemas on the acquisition of polysemy were reviewed. The

findings proved the image schemas as a powerful teaching tool to make it easier for the EFL learners to understand and retain words with their semantically related meanings because of the image schema-based interconnection between the peripheral meanings of words and the core meaning instead of instructing the various meanings of words exhaustively.

To promote long-term retention of English vocabulary, Guan (2020) extrapolated from his study on the application of image schema theory that image schemas were worthy of the efforts exerted and time spent on their preparation as they helpfully made learners remember words, their meanings and uses more effectively.

3.2 Definition of ISI

ISI is relatively abstract representation derived from the everyday interaction in our worldwide surrounding environment in a way that reflects the thesis of grounded cognition by using image schemas to create a relationship between the embodied experiences that have predictable consequences and the conceptual structure as well as to provide conceptual building blocks for complex and abstract concepts (Duboony, 2015). It is a relatively burden-free and visual teaching method that depends on abstract patterns of mental representations mixed with sensory and perceptual experiences of physical objects in everyday life (Shintani, Mori & Ohmori, 2016). It can also be defined as a form of vocabulary instruction in which the word learning process is intervened by the use of image schema (Bouchenek, 2017). Yu (2022) refers to ISI as a pedagogical method that depends on the usage of image schemas to provide learners with the main meanings of vocabulary on which they can understand the other uses of such vocabulary in different contexts. In light of Image Schema and ISI definitions as well as the research variables, ISI can be procedurally defined as “A visual method of vocabulary instruction that uses image schemas to structure the mental representation of words by linking them metaphorically with cognitive schemata in terms of spatial analogies and physical objects in everyday life for the embodiment of preparatory schoolers' vocabulary learning experiences in a way that improves their EFL vocabulary acquisition”.

3.3 Features of ISI

ISI is a type of explicit vocabulary instruction which provides learners with both vocabulary definitions and contextual examples via multiple exposures to image schemas followed by learners' engagement in active practice to foster deep processing about word meaning and use (Zimmermann, 2017). Makni's study (2014) in UAE as well as Khodadady's and Hesarzadeh's study (2014) in Iran showed the higher positive effect of ISI than translation-based instruction due to the effectiveness of the explicit

instruction of vocabulary via ISI that provides polysemous vocabulary in a gestalt-like way.

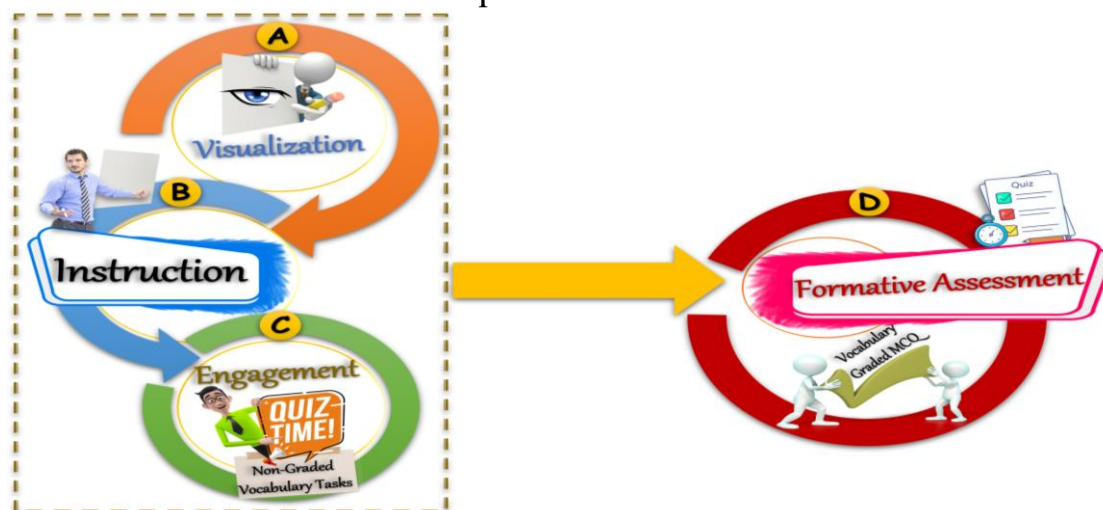
ISI calls for the semi-contextualization of vocabulary since it is ultimately based on visual imagery which is one of the semi-contextualizing approaches for foreign language vocabulary acquisition as referred by Yeganehpour and Zarfsaz (2022). Hereby, ISI can increase learners' ability to comprehend and use language appropriately since it involves the learning of vocabulary at a deeper cognitive level with more cognitive efforts in a way that makes the word learning process and the retention over time get enhanced (Yu, 2022).

3.4 Vocabulary Acquisition Strategies via ISI

According to El Yaafouri (2018), there are two main strategies to activate the background knowledge of the EFL learners across all language learning levels: *visualization of language items* by using image schemas and *learners' involvement* by making image schemas engaging. When teaching polysemous vocabulary, there are three main stages as explained by Yu (2022): *employment of image schemas* so that learners can deeply understand the meanings of words and their relations, then *Instruction of underlying image schemas* instead of relying on providing first language equivalents and finally, *focusing on nuances among words with similar meanings* so learners can scrutinize how such words relate to and differ from each other.

3.5 Proposed ISI Framework

Figure (2)
Proposed ISI Framework



(Proposed by the researcher)

In light of the features of ISI, El Yaafouri's schema strategies for EFL learners and Yu's stages of teaching polysemy via ISI, a proposed framework was developed for using ISI to improve preparatory schoolers' vocabulary acquisition as shown in figure (2). According to the figure, there

are four main stages for ISI to help preparatory schoolers improve their EFL vocabulary acquisition:

a. Visualization stage:

This stage aims at turning the vocabulary knowledge into grounded cognition to help the preparatory schoolers understand the key words deeply and, in turn, retain them in the long-term memory. Accordingly, image schemas are developed for the embodiment of key vocabulary by blending the abstract representation of the meanings and uses of words with preparatory schoolers' sensory and perceptual experiences (cognitive schemata).

b. Instruction Stage:

In this stage, direct presentation of visualized vocabulary of each lesson takes 15 minutes in a 40-minute class by using the previously prepared image schemas as spatial analogies to metaphorically present the key vocabulary while following these steps of instruction:

1. Explaining the target vocabulary explicitly via clear written definitions attached to the related image schemas.
2. Providing aspects of vocabulary knowledge such as synonyms, antonyms, collocations and/or word form (noun, adjective, verb, adverb, preposition).
3. Giving text examples for the meanings and uses of the target vocabulary.

c. Engagement Stage:

By the end of direct presentation of visualized vocabulary, vocabulary practice of each lesson takes the remaining 25 minutes in a 40-minute class following the lesson's 15-minute vocabulary presentation. Here, preparatory schoolers are provided with three non-graded vocabulary practice tasks in which they receive conformational feedback without being scored. In the first task, there is a matching quiz with items ranging between 5 and 12 where preparatory schoolers join words with the related image schemas in 2 minutes. In the second task, there is a 10-item fill-in-the-blank quiz where they write the vocabulary of the given definitions as well as give the antonyms, synonyms and collocations for the provided vocabulary in 15 minutes. In the third task, there is a 10-item true or false quiz where they are asked to decide whether the right words and collocations are used or not and to correct the false ones in 8 minutes. These quizzes aim to involve preparatory schoolers in active practice for better vocabulary acquisition.

d. Formative Assessment:

By the end of each unit, preparatory schoolers take a multiple-choice (MCQ) quiz in a stand-alone 40-minute class of lesson 7 (the unit's final and

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review lesson). Each MCQ quiz is a graded 40-minute quiz with 45 multiple choice items to ensure the preparatory schoolers' mastery level of the unit's target EFL vocabulary acquisition. According to their score in the quiz results, they move on to the next unit if they get 90% or more. Otherwise, they are unsuccessful and need to go back again to acquire the vocabulary of the current unit.

4. IBI vs ISI

In light of the literature review of IBI and ISI, the following table shows the differences as follows:

Table (1)

Differences between IBI and ISI

Aspects of Comparison	IBI	ISI
Overall Features of Instruction	Implicit and Contextualized Teaching	Explicit and Semi-Contextualized Teaching
Aims	Incremental developing of aspects of vocabulary knowledge over time in terms of gradually demanding practice after presenting the unit's vocabulary.	Explaining the key vocabulary of each lesson separately in terms of spatial analogies.
Use of Mnemonics	Discourse Oriented Reading Input + Illustrations + Multiple Contexts via Cloze Quizzes & Productive Practice	Schematic Imagery Links with word definitions + Examples + Cloze Quizzes
Vocabulary Presentation	The unit's key vocabulary is all introduced and discussed in two classes via comprehensible reading texts reinforced by meaning-oriented discourse and illustrations like gestures and pictures.	Each lesson's key vocabulary is visualized via image schemas and presented with word definitions and examples.
Vocabulary Practice	Vocabulary practice is extensive as it occurs in successive classes following the two presentation-based classes. It is increasingly demanding as vocabulary is repeatedly practiced within tasks of escalating difficulties via non-graded close quizzes (e.g., matching & passage fill-in-the-blank) followed by non-graded productive ones (writing and speaking).	Vocabulary practice is focused and intensive as it takes place in each lesson via non-graded close quizzes (e.g., matching, true or false & fill-in-the-blank) following the vocabulary presentation in the same class.

According to the table, IBI is mostly implicit with an element of explicit vocabulary teaching when defining the key vocabulary once introduced in the reading input whereas ISI is mostly explicit with an element of implicit

vocabulary teaching when providing examples for vocabulary uses to learners. Therefore, IBI is distinguished from ISI in terms of main features of instruction, aims, types of mnemonics used, vocabulary presentation and practice.

Method

1. Participants

99 1st year preparatory schoolers were randomly selected as they were divided in three classes of 33 at one of Ismailia public governmental schools in the academic year 2022-2023. They were male and female whose ages ranged between 12 and 13 years old. Resitters were excluded. The reason for selecting participants from the 1st year was that it was the first grade in the preparatory stage in which schoolers were the most committed ones in the three grades of preparatory stage. Participants were divided into three groups of 33 schoolers per class: experimental group 1 (who acquired vocabulary via IBI), experimental group 2 (who acquired vocabulary via ISI) and the control group (who acquired vocabulary via conventional classroom vocabulary teaching practices).

2. Instruments

a. EFL Vocabulary Test

It is a paper and pencil objective test prepared by the researcher to assess the participants' vocabulary acquisition and, in turn, examine the hypotheses. The test duration is 2 hours. It is a Multiple-Choice Test since MCQ is used to assess schoolers' vocabulary acquisition according to the Egyptian ministry of education specifications of the 1st year preparatory English exam sheet of the 1st term in the academic year 2022-2023 (Egyptian National Center for Examinations & Educational Evaluation [NCEEE], 2022). It has 120 MCQ items to assess 1st year preparatory schoolers' acquisition of EFL vocabulary in the first three units of the 1st term English book "New Hello" approved by Egyptian ministry of education.

The test validity was checked by a checklist submitted to a jury committee of professors of TEFL with a three-level scale of consistency (Inconsistent, consistent and very consistent) between each of the Intended Learning Outcomes (ILOs) and test MCQ items. The test's reliability was established as the value of the reliability coefficient in Alpha (α) formula was (79.6%). Finally, it was administered to the control group as well as the two experimental groups on a day before (4/10/2022) and on a day after (8/11/2022) the treatment in the 1st term of the academic year 2022-2023 to answer the third, fourth and fifth research questions. The total score of the test is 120 points so that there are 0 point for incorrect answer and 1 point for correct answer.

b. Three opinionnaires

Opinionnaires are a questionnaire containing a list of statements underlying questions to which participants respond in order to elicit views on matters of opinion from which generalizations may be abstracted (Merriam-Webster, n.d., para.1). Accordingly, one opinionnaire was prepared by the researcher for each of the three groups: the control group and the two experimental groups. The opinionnaires aimed to figure out the three groups' opinions about how satisfactory and beneficial the followed conventional classroom vocabulary teaching practices as well as the two experimental pedagogies (IBI and ISI) were for improving vocabulary acquisition in terms of understanding, memorizing and practicing the key vocabulary.

Each opinionnaire consists of three main opinion questions with a list of underlying seven closed-ended statements that uses Likert Scale (a gradual scale of five levels: strongly disagree, disagree, neutral, agree and strongly agree) to elicit the participants' opinions on improving their vocabulary acquisition when responding to such statements that are linked to the opinion questions as follows:

- Statements 1, 2 & 3 to answer this question: *“Did you understand the key vocabulary better?”*
- Statements 4 & 5 to answer this question: *“Did you memorize the key vocabulary successfully?”*
- Statements 6 & 7 to answer this question: *“Did you make progress after practicing the key vocabulary?”*

The three opinionnaires were conducted by the end of the treatment on the 9th of November in the 1st term of the academic year 2022-2023 on the control group as well as the two experimental groups. They were administered in paper and pencil form to answer the sixth research question. All participants fully responded to the opinionnaires.

3. Design

- a. The three group pre- and post-test design of the quasi-experimental method was used to test the hypotheses.
- b. Descriptive method was used for literature review as well as the discussion of participants' responses in the opinionnaires.

The instructional contents:

The instructional contents are based on the key vocabulary included in the first three units of the 1st year preparatory course book “New Hello” of the 1st term. The following table shows the instructional contents in cases of teaching via IBI and ISI:

Input-Based Incremental Approach versus Image Schema Instruction for Improving Preparatory Schoolers' English as a Foreign Language Vocabulary Acquisition

Dr. Mohammad Abu El-Magd Mohammad Abu El-Magd

Table (2)
Instructional Content via IBI vs Instructional Content via ISI

Instructional Content via IBI		Instructional Content via ISI	
Reading texts of units 1,2 &3 with their key vocabulary in the course book.		Key Vocabulary of units 1,2 &3 in the course book	
Definitions of target vocabulary (from certified dictionaries) are given to confirm understanding after eliciting the meanings from schoolers via meaning-oriented spoken discourse involving discussion questions, gestures, realia, pictures and text examples from the reading input.		Definitions of target vocabulary (from certified dictionaries) are provided to give the meanings and explain them via image schemas and one-sentence examples.	
Illustrative Materials	Pictures (downloaded from free online resources and designed by the researcher)	Image schemas (designed by the researcher)	
	Text examples are extracted from the reading passages in the course book to help schoolers define vocabulary.	One-sentence examples are formed according to the target key vocabulary of the course book and in light of the image schemas to support the provided vocabulary definitions.	
	Discussion questions, gestures and realia in the spoken discourse (Prepared and suggested by the researcher based on the key vocabulary of the reading input)		
Non-graded Vocabulary Tasks developed by the researcher in classes devoted for increasingly demanding extensive practice after presenting all of the unit's vocabulary	Task 1 Matching Quiz	Non-graded Vocabulary Tasks developed by the researcher for intensive practice in the same class immediately after presenting the lesson's vocabulary	Task 1 Matching Quiz
	Task 2 Passage Fill-in-the-Blank Quiz		Task 2 Fill-in-the-Blank Quiz
	Task 3 Writing Quiz		Task 3 True or False Quiz
	Task 4 Speaking Quiz		
Formative Assessment Multiple Choice Graded Quiz by the end of each unit (Developed by the researcher)			

Treatment

An introductory session was administered with the two language teachers who taught the experimental groups at the very beginning of the treatment on the 2nd of October 2022 in order to hand them a printed version of the IBI and ISI teacher's guides and provide an overview on how to teach vocabulary via IBI and ISI as well as how to help preparatory

schoolers practice for better vocabulary acquisition. In addition to the introductory session, both treatments took place concurrently in the 1st term of the academic year 2022-2023 and lasted for 21 working school days starting from the 9th of October 2022 until the 7th of November 2022. Holidays were excluded.

Each of both treatments via IBI and ISI took place in 21 classes of 40 minutes over almost five weeks so that there were seven 40-minute classes for each unit with one class per day. For IBI treatment, the first two 40-minute classes of each unit were to present the target key vocabulary of the whole unit implicitly within reading texts and repeatedly via spoken meaning-oriented discourse. The following four 40-minute classes were for the vocabulary extensive practice of each unit via non-graded tasks with gradual difficulty levels. In case of ISI treatment, the presentation and practice of each lesson's key vocabulary occurred in one 40-minute class. Direct presentation of visualized vocabulary of each lesson takes 15 minutes in a 40-minute class by using the previously prepared image schemas as spatial analogies to metaphorically present the key vocabulary with definitions. Following the lesson's 15-minute visualized vocabulary presentation, intensive vocabulary practice of each lesson took the remaining 25 minutes in a 40-minute class via non-graded tasks.

In both treatments, there was a graded 40-minute quiz with 45 multiple choice items for formative assessment in the seventh and final 40-minute class of each unit to ensure the preparatory schoolers' mastery level of target vocabulary acquisition. According to their score in the quiz results, they moved on to the next unit if they got 90% or more. Accordingly, the key vocabulary items of the first three units were presented, practiced and formatively assessed in 14 hours for each of both treatments via IBI and ISI.

Results

To answer the third, fourth and fifth research questions, the hypotheses were statistically examined via EFL vocabulary test and discussed as follows:

Hypothesis One stated that "There is a statistically significant difference between the mean scores of the IBI experimental group's and control group's EFL vocabulary acquisition in the post-administrations of the EFL vocabulary test in favor of the IBI experimental group". The independent samples t-Test was used to test this hypothesis. The following table displays the statistical data related to the EFL vocabulary acquisition of the control and IBI experimental groups in the post-administrations of the EFL vocabulary test.

Table (3)

The difference between the mean scores of the EFL vocabulary acquisition of the control & IBI experimental groups in post-administrations of the vocabulary test

		N	Mean	St. Deviation	t	Significance (2-tailed)
Hypothesis I	Control group's post-administration	33	43.2424	5.60708	-18.55	.000
	IBI experimental group's post-administration	33	68.3636	5.38991		

Table (3) shows that there is a difference between the mean scores of the EFL vocabulary acquisition of the control and IBI experimental groups in the post-administrations of the EFL Vocabulary Test in favor of the IBI experimental group. The difference was statistically significant ($t = -18.55$, $p < 0.05$). Thus, the hypothesis was verified.

The following table shows the value of the effect size for the IBI on improving the 1st year preparatory schoolers' EFL vocabulary acquisition:

Table (4)

The Effect Size level of IBI on 1st year preparatory schoolers' EFL vocabulary acquisition as compared to the control group

Independent variable	Dependent variable	t^2	DF	η^2	Effect Size
Input-Based Incremental Approach (IBI)	EFL vocabulary acquisition	344.29	64	0.84	Large

According to table (4), Eta-squared (η^2) was used to calculate the effect size of the independent variable IBI after estimating the difference between the mean scores of the IBI experimental group and the control group in the post-administrations of the EFL vocabulary test. The effect size was large ($\eta^2 = 0.84$). So, IBI had a high positive effect on improving the preparatory schoolers' EFL vocabulary acquisition when compared to the control group's conventional classroom vocabulary teaching practices.

Hypothesis Two stated that "There is a statistically significant difference between the mean scores of the pre- and post-administrations of the EFL vocabulary test among the 1st year preparatory schoolers of the IBI experimental group in favor of the post-administration". The paired samples t-test was used to check this hypothesis. The following table shows the statistical data related to the EFL vocabulary acquisition of the IBI experimental group.

Table (5)

The difference between the mean scores of the IBI experimental group's EFL vocabulary acquisition in the pre- & post-administrations of the vocabulary test

		N	Mean	St. Deviation	t	Significance (2-tailed)
Hypothesis II	Pre-administration	33	8.8485	2.34682	-54.26	.000
	Post-administration		68.3636	5.38991		

Table (5) shows that there is a difference between the mean scores of the IBI experimental group's EFL vocabulary acquisition in the pre- and post-administrations of the EFL vocabulary test in favor of the post-administration. The difference was statistically significant ($t = -54.26$, $p < 0.05$). Accordingly, this hypothesis was verified.

The following table shows the value of the effect size for IBI on improving the 1st year preparatory schoolers' EFL vocabulary acquisition:

Table (6)

The Effect Size level of IBI on 1st year preparatory schoolers' EFL vocabulary acquisition

Independent variable	Dependent variable	t ²	DF	η^2	Effect Size
Input-Based Incremental Approach	EFL vocabulary acquisition	2944.7	32	0.98	Large

According to table (6), Eta-squared (η^2) was used to calculate the effect size of the independent variable. The effect size was large ($\eta^2 = 0.98$). Thus, IBI had a high positive effect on improving the preparatory schoolers' EFL vocabulary acquisition at public governmental schools.

Hypothesis Three stated that "There is a statistically significant difference between the mean scores of the ISI experimental group's and control group's EFL vocabulary acquisition in the post-administrations of the EFL vocabulary test in favor of the ISI experimental group". The independent samples t-Test was used to examine this hypothesis. The following table shows the statistical data related to the EFL vocabulary acquisition of the control and ISI experimental groups in the post-administrations of the EFL vocabulary test.

Table (7)

The difference between the mean scores of the EFL vocabulary acquisition of the control & ISI experimental groups in post-administrations of the vocabulary test

		N	Mean	St. Deviation	t	Significance (2-tailed)
Hypothesis III	Control group's post-administration	33	43.2424	5.60708	-19.36	.000
	ISI experimental group's post-administration	33	67.8485	4.67788		

Table (7) shows that there is a difference between the mean scores of the EFL vocabulary acquisition of the control and ISI experimental groups in the post-administrations of the EFL Vocabulary Test in favor of the ISI experimental group. The hypothesis was approved as the difference was statistically significant ($t = -19.36, p < 0.05$).

Table (8)

The Effect Size level of ISI on 1st year preparatory schoolers' EFL vocabulary acquisition as compared to the control group

Independent variable	Dependent variable	t ²	DF	η^2	Effect Size
Image Schema Instruction	EFL vocabulary acquisition	374.81	64	0.85	Large

According to table (8), Eta-squared (η^2) was used to calculate the effect size of the independent variable IBI after estimating the difference between the mean scores of the IBI experimental group and the control group in the post-administrations of the EFL vocabulary test. The effect size was large ($\eta^2 = 0.85$). Hereby, ISI had a high positive effect on improving the preparatory schoolers' EFL vocabulary acquisition when compared to the control group's conventional classroom vocabulary teaching practices.

Hypothesis Four stated that "There is a statistically significant difference between the mean scores of the pre- and post-administrations of the EFL vocabulary test among the 1st year preparatory schoolers of the ISI experimental group in favor of the post-administration". The paired samples t-test was used to check this hypothesis. The following table demonstrates the statistical data related to the EFL vocabulary acquisition of the ISI experimental group in the pre- and post-administrations of the EFL vocabulary Test.

Table (9)

The difference between the mean scores of the ISI experimental group's EFL vocabulary acquisition in the pre- & post-administrations of the vocabulary test

		N	Mean	St. Deviation	t	Significance (2-tailed)
Hypothesis IV	Pre-administration	33	8.6364	2.31595	-61.17	.000
	Post-administration		67.8485	4.67788		

Table (9) shows that there is a difference between the mean scores of the IBI experimental group's EFL vocabulary acquisition in the pre- and post-administrations of the EFL vocabulary test in favor of the post-administration. The difference was statistically significant ($t = -61.17$, $p < 0.05$). Therefore, the hypothesis was approved.

The following table shows the value of the effect size for the ISI on improving the 1st year preparatory schoolers' EFL vocabulary acquisition:

Table (10)

The Effect Size level of ISI on 1st year preparatory schoolers' EFL vocabulary acquisition

Independent variable	Dependent variable	t ²	DF	η^2	Effect Size
Image Schema Instruction	EFL vocabulary acquisition	3741.8	32	0.99	Large

According to table (10), Eta-squared (η^2) was used to calculate the effect size of the independent variable. The effect size was large ($\eta^2 = 0.99$). Thus, ISI had a high positive effect on improving the preparatory schoolers' EFL vocabulary acquisition at public governmental schools.

Hypothesis Five stated that "There is no statistically significant difference between the mean scores of the IBI experimental group's and ISI experimental group's EFL vocabulary acquisition in the post-administrations of the EFL vocabulary test". The independent samples t-Test was used to test this hypothesis. The following table demonstrates the statistical data related to the EFL vocabulary acquisition of the IBI and ISI experimental groups in the post-administrations of the EFL vocabulary test.

Table (11)

The difference between the mean scores of the EFL vocabulary acquisition of the IBI & ISI experimental groups in the post-administrations of the vocabulary test

		N	Mean	St. Deviation	t	Significance (2-tailed)
Hypothesis V	IBI experimental group's post-administration	33	68.3636	5.38991	0.415	0.680
	ISI experimental group's post-administration	33	67.8485	4.67788		

Table (11) shows that there is no difference between the mean scores of the EFL vocabulary acquisition of the IBI and ISI experimental groups in the post-administrations of the EFL Vocabulary Test. The hypothesis was verified as the difference was Not statistically significant ($t= 0.415, p>0.05$).

Table (12)

The Effect Size level of IBI vs ISI on 1st year preparatory schoolers' EFL vocabulary acquisition

Independent variables	Dependent variable	t ²	DF	η^2	Effect Size
Input-Based Incremental Approach vs Image Schema Instruction	EFL vocabulary acquisition	0.172225	64	0.002	nil

According to table (12), Eta-squared (η^2) was used to calculate the effect size of the independent variable IBI vs the independent variable ISI in the post-administrations of the EFL vocabulary test for the two experimental groups. The effect size was almost nil ($\eta^2 = 0.002$). Thereby, none of both pedagogies had a higher effect than the other one on improving the EFL vocabulary acquisition among the participants of the two experimental groups.

Discussion of results

This section discussed the results of each of the two experimental groups to provide the possible reasons for the progress shown by each group in vocabulary acquisition. Also, the results of the two groups were tackled versus each other to compare between both pedagogies of IBI and ISI regarding their effects on improving the 1st year preparatory schoolers' vocabulary acquisition.

The results revealed the two experimental groups' improved vocabulary acquisition by IBI and ISI as effect sizes of IBI and ISI were almost equally

large and since there were statistically significant differences between the pre and post measurements of each group as well as between the post measurements of each of the two experimental groups & the control group.

The IBI experimental group could successfully acquire vocabulary due to three probable reasons. First, the key vocabulary was presented frequently in a meaning-oriented and spoken discourse-based reading input to elicit the meaning of words from the schoolers. That reading input helped clarify the uses of words as mentioned by Barcroft (2016, pp. 22-23). Second, an element of explicit vocabulary instruction was involved by providing word definitions. It was supportive for understanding as explained by Lewis (2020). Third, the IBI experimental group recalled the key vocabulary faster as IBI provided several mnemonics for long-term vocabulary memorization as claimed by Irwandi, Quaidy and Albert (2018). Hence, the IBI experimental group managed to retain the key vocabulary efficiently via the following mnemonics: oral meaningful discussions, examples extracted from reading texts, word definitions, pictures, realia and gestures as well as implicit repetition of words in the spoken discourse during presentation and in different tasks during practice.

ISI experimental group showed better vocabulary acquisition too as a result of five possible factors. First, image schemas were used as a powerful tool to describe the meanings of different vocabulary items in a way that helped schoolers go beyond the surface meaning. This is in agreement with the findings of Bouchenek's study (2017) and Mitsugi's study (2018). Second, schoolers' understanding was noticeably enhanced by direct explanation with word definitions mixed with an element of implicit and semi-contextualized vocabulary instruction via standalone sentence examples attached to the image schemas. Third, image schemas helped schoolers understand the nuances among words with similar meanings as indicated by Yu (2022). Fourth, image schemas were useful for allowing schoolers to figure out the abstract words as well as the slight differences with their antonyms. Fifth, ISI experimental group managed to retrieve the retained vocabulary since ISI provided image schemas as mnemonics. Those mnemonics, as pinpointed by Yeganehpour and Zarfsaz (2022), linked the key vocabulary with schoolers' cognitive schemata by spatial analogies for long-term retention and mental visualization of vocabulary as well as their uses.

Both IBI and ISI experimental groups made progress by vocabulary practice but differently. In line with the results of Fichtner's and Barcroft's study (2021) on teaching German vocabulary, the IBI experimental group made progress as a result of depending primarily on the extensive and incremental practice of vocabulary that lasted for several and special

classes of practice at different times. Such practice allowed for repetition of vocabulary as it was gradual from easier input-based tasks towards more challenging and output based ones. Accordingly, and as shown in the studies by Namaziandost, Dehkordi and Shafiee (2019) as well as Duong, Perez, Desmet and Peters (2021), such incremental practice promoted the schoolers' long-term vocabulary retention. These gradual tasks were in multiple contexts of reading to fill in the missing key words in a passage, writing sentences and speaking to use them productively. So, IBI helped the schoolers use vocabulary successfully as claimed by Lessard-Clouston (2014). On the other hand, ISI emphasized schoolers' intensive practice in each class immediately after vocabulary presentation as stated by Zimmermann (2017). It provided various tasks but in form of cloze quizzes and allowed for using image schemas in practice tasks like matching to support long-term vocabulary retention too.

However, there was no statistically significant difference between the post measurements of the EFL vocabulary test for the two experimental groups due to the following possible shortcomings as extrapolated from the participants' comments in each of the two experimental groups during the treatment.

Participants of the IBI experimental group asked for more sentence examples in addition to the reading text for clearer understanding while presenting the key vocabulary. They also asked for grounding the abstract vocabulary such as "exciting", "voluntary" and "brave", grounding prepositions like "inside" and "before", grounding collocations like "achieve dreams" and "on time", and grounding phrasal verbs like "arrive in/at/on". They needed to show the difference between words with similar meanings like "kind vs friendly" and "tall vs long" as well as abstract antonyms like "boring vs interesting" by using vector shapes such as arrows to be easily linked with their cognitive schemata. They also wanted to practice vocabulary via matching quiz by joining words with their pictures in order to help them memorize the key vocabulary and, in turn, recall them faster later.

Regarding the participants of the ISI experimental group, they asked for examples within the reading text in addition to the one sentence examples in order to figure out the uses of key vocabulary more clearly. They also showed the desire to practice vocabulary within multiple contexts to master vocabulary usage and repeat vocabulary in different tasks that go up in their difficulty level and become more challenging and thought-provoking.

Each of both pedagogies had its own shortcomings that could be substantially resolved by the other one. IBI was more effective in some

points. While ISI called for semi-contextualizing vocabulary by providing image schemas attached to one sentence examples and word definitions, IBI called for contextualizing vocabulary within comprehensible reading input aided by spoken discourse and visuals. Hence, IBI was more useful for figuring out the uses of vocabulary. ISI did not provide productive vocabulary practice tasks and depended on cloze quizzes like matching, one statement fill-in-the-blank and true or false whereas IBI provided the opportunities for extensive practice with different tasks of escalating challenge in various contexts of reading, writing and speaking. Therefore, IBI supported memorizing vocabulary via implicit repetition as well as promoted mastery of vocabulary usage.

On the other side, ISI was more powerful in other points. As IBI depended on the use of ordinary images that could not visualize abstract vocabulary, ISI efficiently grounded abstract vocabulary by forming mental representations via spatial analogies. So, ISI was more successful in showing the nuances between words with similar meaning as well as antonyms. In addition, ISI was helpful for understanding and memorizing abstract vocabulary as well as prepositions and collocations. Unlike IBI, ISI focused on vocabulary practice via image schemas as a sort of visuals in quizzes like matching. Thus, ISI greatly assisted schoolers in recalling the key vocabulary faster and easier.

In conclusion, IBI and ISI had high positive effects on improving the 1st year preparatory schoolers' vocabulary acquisition when examining their effect sizes (η^2) separately and with respect to the control group's conventional classroom vocabulary teaching practices. However, none of them had a higher positive effect than the other one when compared with each other in effect size. This might be due to the possible shortcomings of each pedagogy that could be treated if both pedagogies were used in combination or interchangeably according to the types of vocabulary (polysemous, abstract, collocation, phrasal verbs etc.) since each pedagogy provided special features and qualities for better vocabulary acquisition.

Discussion of the qualitative data from the opinionnaires

This section discussed the three groups' responses after the treatment to the seven closed statements of the related opinionnaire in terms of better understanding of key vocabulary (for statements 1, 2 & 3), successful memorizing of key vocabulary (for statements 4 & 5) and progress after the practice of key vocabulary (for statements 6 & 7) in order to answer the sixth research question.

Table (13)

The statistical data of the control group's opinionnaire

Statement no.	Number of control group schoolers who					
	strongly disagree	disagree	are neutral	agree	strongly agree	
Question 1	1	24 (73%)	7 (21%)	2 (6%)	nil	nil
	2	31 (94%)	2 (6%)	nil	nil	nil
	3	33 (100%)	nil	nil	nil	nil
Question 2	4	33 (100%)	nil	nil	nil	nil
	5	29 (88%)	5 (12%)	nil	nil	nil
Question 3	6	31 (94%)	2 (6%)	nil	nil	nil
	7	30 (91%)	3 (9%)	nil	nil	nil

In light of the statistical data in the table, the opinionnaire of the control group pinpointed the lower impact of the conventional classroom practices for improving the schoolers' vocabulary acquisition. The control group schoolers' responses to the first three statements of the opinionnaire confirmed the vast majority's limited understanding of key vocabulary as indicated by the average rate of the schoolers who strongly disagreed (88%) and of those who disagreed (9%) on the first three statements. It was concluded that they were unable to understand the key words easily and they often got confused between words with similar meaning due to three probabilities: shortage of appropriate visuals, lack of contextualization and the vocabulary acquisition burden via teacher-centered list of words with their Arabic equivalents and examples for repetition.

In terms of memorizing the key vocabulary successfully, schoolers of the control group were unable to recall the key words as revealed by the average rate of schoolers who strongly disagreed (94%) and of those who disagreed (6%) on the statements 4 & 5. This might be the repercussion of two possible causes: rare review of vocabulary by the teacher and their dependence on retaining them by writing lists and oral repetition. Finally, and in terms of practicing the key vocabulary for progress, no progress was probably made due to insufficient classroom vocabulary practice that was neither intensive nor extensive as pointed out by the average rate of control group schoolers who strongly disagreed (91%) and of those who disagreed (9%) on statements 6 & 7.

Table (14)

The statistical data of the IBI experimental group's opinionnaires

		Number of IBI experimental group schoolers who				
Statement no.		strongly disagree	disagree	are neutral	agree	strongly agree
Question 1	1	nil	nil	2 (6%)	25 (73%)	7 (21%)
	2	nil	nil	nil	8 (24%)	26 (76%)
	3	nil	nil	12 (36%)	3 (9%)	18 (55%)
Question 2	4	nil	nil	nil	nil	33 (100%)
	5	nil	nil	nil	nil	33 (100%)
Question 3	6	nil	nil	nil	3 (9%)	30 (91%)
	7	nil	nil	nil	2 (6%)	31 (94%)

Table (15)

The statistical data of the ISI experimental group's opinionnaires

		Number of ISI experimental group schoolers who				
Statement no.		strongly disagree	disagree	are neutral	agree	strongly agree
Question 1	1	nil	nil	nil	nil	33 (100%)
	2	nil	nil	13 (39%)	2 (6%)	18 (55%)
	3	nil	nil	nil	2 (6%)	31 (94%)
Question 2	4	nil	nil	nil	4 (12%)	29 (88%)
	5	nil	nil	nil	12 (36%)	21 (64%)
Question 3	6	nil	nil	nil	2 (6%)	31 (94%)
	7	nil	nil	nil	2 (6%)	31 (94%)

According to tables (14) and (15), the opinionnaires of both IBI and ISI experimental groups showed that IBI and ISI were powerful in helping the participants of the related experimental group understand the key vocabulary better, memorize them successfully and make progress by practice to improve their vocabulary acquisition but in different manners.

IBI and ISI featured better understanding of vocabulary in light of schoolers' responses to the first three statements of the opinionnaires. Most

schoolers in the IBI experimental group (21% strongly agreed and 73% agreed) revealed that IBI was helpful for understanding the uses of words by guessing the meaning within reading input. Many of them (76% strongly agreed and 24% agreed) showed their positive attitudes towards the meaningful discussions' role in clarifying the vocabulary presentation by use of pictures, realia and/or gestures. However, some schoolers (36%) were neutral about the usefulness of the reading texts for better understanding of either abstract words or the differences between words with similar meanings. This could be due to three basic demands as indicated in their comments during the treatment: giving stand-alone sentence examples in addition to the reading text, grounding the abstract vocabulary and showing the difference between words with similar meanings by using vector shapes.

On the other side, ISI aided schoolers in clarifying the meaning and uses of vocabulary via direct explanation with word definitions and example sentences attached to image schemas as claimed by all schoolers of ISI experimental group. The vast majority (94%) strongly emphasized the usefulness of image schemas to figure out the abstract words as well as the nuances between words with similar meaning and their antonyms. However, some of them (39%) were neutral about the usefulness of examples attached to image schemas to clarify the uses of vocabulary. This might be the result of the need for examples within reading texts in addition to the one sentence examples to be able to know about the uses more clearly as claimed in their comments during the treatment.

IBI and ISI were useful for memorizing vocabulary according to schoolers' responses to the fourth and fifth statements of the opinionnaires. All schoolers of IBI experimental group highly supported the idea of vocabulary presentation in an input of text examples and pictures as it allowed for faster vocabulary recall. They also strongly agreed on the benefit of extending the practice vocabulary tasks throughout different classes as it helped them repeat vocabulary implicitly for long-term retention.

On the other hand, ISI presented vocabulary in image schemas to link them with schoolers' cognitive schemata by spatial analogies (88% strongly agreed and 12% agreed) and, in turn, visualized words clearly in general and grounded abstract words in particular (64% strongly agreed and 36% agreed).

IBI and ISI placed a premium on vocabulary practice to make progress in vocabulary acquisition as extrapolated from schoolers' responses to the sixth and seventh statements of the opinionnaires. Almost

all schoolers of IBI experimental group (91% strongly agreed and 3% agreed) were content with the sufficiency of vocabulary practice since special classes of extensive practice were devoted for each unit after presenting all of the unit's vocabulary in two stand-alone classes. They indicated their successful vocabulary acquisition via vocabulary practice of gradual difficulty levels and in multiple contexts (94% strongly agreed and 6% agreed).

For the ISI experimental group, majority of schoolers (94%) strongly agreed on two positive points for effective vocabulary practice via ISI: the sufficiency of practice for vocabulary retention and the intensive vocabulary practice of each lesson in the unit immediately after lesson's vocabulary presentation in the same class as well.

To sum up, schoolers of the control group were dissatisfied since the conventional classroom vocabulary teaching practices turned their vocabulary acquisition into a boring and tedious work. However, schoolers of the IBI and ISI experimental groups showed their positive attitudes as useful and helpful pedagogies for improving their vocabulary acquisition since each of the two pedagogies provided special privileges that facilitated their understanding, retention and practice of key vocabulary.

Recommendations and Suggestions

Recommendations

The following are the recommendations of the current research:

1. To promote vocabulary acquisition effectively, make sure to insert an element of implicit vocabulary instruction if the you are presenting vocabulary explicitly and vice versa.
2. To make IBI more successful, you should:
 - a. Ground the abstract words to be linked with schoolers' cognitive schemata.
 - b. Use vector shapes like arrows to help schoolers figure out the nuances between words with similar meaning.
3. When using ISI for teaching English vocabulary, you should consider the following to help schoolers figure out the uses of words more clearly:
 - a. Providing productive vocabulary practice tasks in which schoolers make use of their vocabulary for spoken or written communication.
 - b. Presenting vocabulary with a reading text in addition to the direct explanation of words and extracted examples.
4. For an effective vocabulary acquisition, allow schoolers to practice vocabulary via different tasks of escalating challenge in various contexts of listening, reading, writing and speaking.

Suggestions

Here are some suggestions for possible further research:

- 1. A Proposed hybrid pedagogy between Input-Based Incremental Approach and Image Schema Instruction on Improving the EFL vocabulary acquisition among Students at Faculties of Commerce and Medicine.**
- 2. The Impact of Image Schema Instruction on Improving the EFL Grammar Learning among Primary Schoolers at Language Experimental Schools.**
- 3. Replicating the current study on:**
 - a. Acquisition of Polysemous Vocabulary among Engineering Students.**
 - b. Enhancing the use of phrasal verbs among Secondary Schoolers.**
 - c. Employing EFL vocabulary in Critical Writing among Students of English at the Faculty of Arts and Humanities.**

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