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Engaging Vocational High School Students In Word Mapping Strategy In Learning Technical Vocabulary: A Classroom Action Research

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Abstract

This study reports the results of vocational high school students' use of a word map graphic organizer and YouTube as digital media for learning the technical vocabulary of procedure texts. This paper utilized a classroom action research design, in which the researcher plays an active role in the classroom and collects data through semi-structured interviews and documentation. The majority of students enjoyed and were interested in learning technical vocabulary using word map graphic organizers and digital procedure text videos, as determined through thematic analysis of empirical data. Through the use of a word map graphic organizer, students were encouraged to uncover and evaluate technical vocabulary knowledge in the digital procedure text video. Nevertheless, some students found it difficult to utilize the word map graphic organizer in the word mapping strategy.

Keywords: *Technical Vocabulary, Word Mapping Strategy, Word Map Graphic Organizer*

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INTRODUCTION

Although previous research on vocabulary learning in word mapping strategies has been extensive, the use of digital media such as YouTube for learning the technical vocabulary of a procedure video text has been reported infrequently in the literature. In order to address this deficiency, the present study describes the responses of vocational students to a word mapping strategy, the use of a word map graphic organizer, and YouTube as a digital medium for learning the technical vocabulary of a procedure text. This study will therefore employ a classroom action research design, in which the researcher plays an active role in the classroom and collects data via semi-structured interviews and documentation. This study is guided by the following research question:

What are vocational high school students' responses to the learning of technical vocabulary through word mapping strategy on word map graphic organizer and digital procedure text video?

Technical Vocabulary as English Vocabulary Learning

Vocabulary is one of the most essential components of language acquisition. Learning new terms is an essential component of language acquisition. Improving other abilities, such as reading, speaking, writing, and listening, requires a strong vocabulary. For straightforward expression and communication, both orally and in writing, an extensive vocabulary is required. Widodo (2016, p. 122) and Nation (2001, pp. 12-13) identify four ways in which a word can appear in a written text.

1. *High-frequency*: These words can be found in a variety of linguistic situations and make up a sizeable portion of the words used in spoken and written language. The 2,000 most frequently used vocabulary in English are referred to as high-frequency words. This vocabulary category typically includes 90% of vocabulary used in conversations and novels, as well as about 80% of words found in academic literature and newspapers.
2. *Academic words*: These words are frequently used in various academic writings. They make up less than 2% of words in novels, about 4% of words in newspapers, and about 8.5% of words in academic publications.
3. *Technical words*: These words are highly relevant and closely related to the concepts and content of the text, such as "Computer, math, science." This category includes about 5% of all words in the text.
4. *Low-frequency words*: These vocabulary are not academic vocabulary, technical terminology for a particular field, or frequently used words.

The focus of this investigation was the third category of vocabulary. Technical vocabulary is closely associated with language learners who acquire a language for a particular purpose. Understanding a new topic in a text requires technical vocabulary, which relates to a specific field of study (such as accounting, law, or science). According to Nation (2001), technical vocabulary consists of words associated with a particular topic or subject area. Each topic area has a dictionary or glossary that accumulates field-specific technical terminology, such as dictionaries or glossaries for physics, mathematics, geography, and electronics. Approximately 5% of a document's technical vocabulary may consist of these words.

Word Mapping Strategy

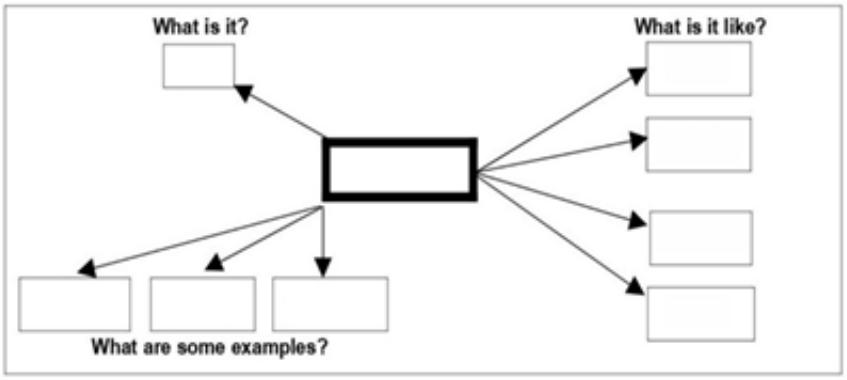
One of the strategies utilized in vocabulary instruction is word mapping. Because it encourages students to consider the relationships between words, word mapping is one of the most effective strategies for teaching vocabulary (Graves, M. In A. E. Farstrup and S. J. Samuels (Eds.), 2008, pp. 56-79). This strategy encourages students to actively investigate word relationships, which enables them to gain a deeper comprehension of word meanings by expanding their conceptual vocabulary. A word map illustrates the relationship between various word concepts. By illuminating these relationships, students will be better able to alter their existing conceptual framework (schema) and generate a deeper understanding of textual vocabulary.

Vocabulary Mapping as Graphic Organizer

Moreover, vocabulary mapping or word map graphic organizer is a graphic organizer that enables students to think critically and comprehend word definitions. In Santa, Schwartz and Raphael (1985) developed a vocabulary mapping strategy to encourage students to progress from dictionary-based definitions to those that describe word relationships. The procedure for teaching vocabulary using the word map graphic organizer is as follows.

1. Show the class the word map graphic organizer and underline the importance of the three relationships to make a meaningful definition.
2. The teacher selects familiar vocabulary that is easy to show using the word map to demonstrate the method (e.g. yoghurt, tree, cloud).
3. The teacher identifies the word on the map.

4. Ask, "What is it?"
5. Ask, "What is it like?"
6. Ask, "What are some examples?"
7. The teacher helps students understand the meaning of the word in various contexts, such as traits, groups, and examples.



Word Map Graphic Organizer
(Schwartz, R. M., & Raphael, T.E, 1985)

Advantages and Disadvantages of Word Mapping Strategy Approaches

According to Graves (2006, p.96), there are the advantages and disadvantages using word mapping strategy.

The advantages:

1. Used in small groups, large groups, or alone.
2. Depending on the situation and context, it can be easily and spontaneously generated.
3. Students can relate the terminology in their own words.
4. Encourages active participation from students.
5. Encourages students to expand their vocabulary.
6. Students find learning more fun and interesting when word maps are used in the learning process.
7. This technique is simpler to use in the classroom.
8. Expands students' vocabulary.
9. Students have a positive attitude towards the terms.

The disadvantages:

1. Not effective.
2. Effects of this method on students with low levels of disability.

METHOD

Research site and participants

This research was conducted at a vocational high school in Karawang, West Java. This investigation was conducted for a May 2023 meeting. This investigation was conducted with eleventh-grade students from a vocational high school. Thirty-one students from a single teknik komputer jaringan class participated in this investigation; their ages ranged from 16 to 17 years old. The authors asked the class's homeroom teacher and thirty-one pupils for permission to conduct this research. The authors chose this site because they were granted entry to this institution as compensation. In addition, the authors asked eight

students from each of eight student groups who were willing to volunteer and believed their data would be secure if they participated in this study to participate in subsequent semi-structured interviews.

Students in the eleventh grade had been taught procedure materials by their English teacher in the tenth grade. To review the procedure text, the teacher provided and instructed reading comprehension activities, such as identifying the language features, general structure, and social function of the procedure text, in the first stage (Building Field Knowledge). Before moving on to the next phase of the teaching procedure (Modelling Text and Joint Construction), the teacher verifies that the students have grasped the procedure text.

Research Design

This study employs a qualitative methodology and a classroom action research design to investigate the responses of vocational high school students to the activity learning technical vocabulary on the word mapping strategy utilizing word map graphic organizer in digital procedure text video. Action research in the classroom is associated with "reflective practice" and "the teacher as author" (Burns, 2009, p.2). This indicates that the teacher conducts practice in front of the class before ruminating on the practice as the author of classroom action research. In other words, action research entails investigating our own teaching environment using "a self-reflective, critical, and methodical approach" (p.2) Therefore, a classroom action research study is suitable for this investigation.

Instructional Procedure

All students follow the learning activity in three steps, such as: Building Knowledge of Field, Modelling Text, and Joint Construction. The steps were adapted from Yanto (2017) below:

1. *Building Knowledge of Field (BKOF)*: At this stage, the teacher provided and instructed reading comprehension activities from the procedure text, such as identified language features, generic structures, and social functions from the procedure text
2. *Modelling Text:* After building students' knowledge of the procedure text, the teacher introduced the word map graphic organizer and explained how to use it to collect new or unique technical vocabulary they did not understand. The teacher directed students to watch some procedure text videos with the title "how to add signature on Microsoft Word" on the YouTube digital platform. The teacher provided an example of a procedure text titled "how to add signature on Microsoft Word" on YouTube in their own Smartphone. The teacher suggested the channel to the students. The teacher demonstrated how to select and nominate important words from the readings and complete Word Map Graphic organizers that contain three relationships: "what is it?", "what is it like?", and "what are some The teacher instructed the students to open and watch some videos of procedure text with the title "how to add signature on Microsoft Word" on YouTube on their own smartphones with English subtitles on. The teacher instructed the class that they must find important, interesting, or new words from the procedure text in the video.
3. *Joint Construction:* The teacher facilitated students who worked in small groups of three to four, watched the video, and selected one word that they found important, interesting, or new. Then, the teacher asked them to look up

the meaning of the words they found interesting or unknown in the procedure text. After that, the teacher instructed the students to do a word map graphic organizer exemplified by the teacher. The teacher gave the students a word map graphic organizer worksheet to write a word they thought was unfamiliar or interesting and asked them to write it on the worksheet. The teacher asked the students to look up the meaning of the word in the dictionary and instructed them to write an example sentence for the word. Then, the teacher instructed the group leader of each group to present the result of their word map graphic organizer worksheet through group discussion in front of the class. Then, Students made groups of three to four. They looked for unfamiliar or interesting words and looked up the meaning of the words in the dictionary. Next, they wrote them according to the example of the word map graphic organizer worksheet the teacher had given. Then, the leader of each group of students came to the front of the class and presented their group discussion and word map graphic organizer worksheet.

Data Collection and analysis

Interviews with a semi-structured format were used to collect data for this study. Using this method of data collection, responses of students to acquiring technical vocabulary in the word mapping strategy utilizing word map graphic organizer of the digital procedure text video will be gathered. The authors will solicit eight students from each cohort who are willing to be interviewed. The interview will be the primary source of data used to collect participant responses. The authors will solicit responses from the entire group by posing five general queries. Interviews will be conducted with eight students from each of the eight categories who volunteered to participate in the study. The semi-structured interview was conducted in Bahasa Indonesia so that participants could readily respond to the questions posed by the authors. This prevented participants and authors from misunderstanding one another.

All of the data were analyzed using Braun and Clarke's (2006) six-phase thematic analysis. "Thematic analysis can be an essentialist or realist method, which reports the experiences, meanings, and realities of participants, or it can be a constructionist method, which examines how events, realities, meanings, experiences, etc. are the results of a variety of discourses operating in society" (Braun & Clark, 2006, p. 81). In addition, the first phase is familiarization with the data. During this phase, the authors transcribed and read the semi-structured interview data transcripts. In the second phase, initial codes are generated. During this phase, the authors focused on codes related to involving vocational high school students in the word mapping strategy for acquiring technical vocabulary. Each code represents a particular concept or idea within the data. The third phase is the search for themes. During this phase, the authors organize the codes into possible themes and seek for connections between codes that represent meaningful units of analysis. The fourth phase is reviewing and refining themes. During this phase, authors examine the initial set of themes and ensure that the data are coherent, exhaustive, and adequately represented. In the fifth phase, authors develop precise definitions and descriptions of each theme. These descriptions should explain what each theme represents and how it relates to vocabulary instruction for vocational high school students. In the sixth phase,

which entails the production of the final report, the authors report the results of the data or the findings. Consequently, thematic analysis enables authors to recognize patterns, generate insights, and obtain a deeper understanding of the research.

FINDINGS AND DISCUSSION

Findings

Drawing on the students' semi-structured interviews, two findings themes were identified, such as: (1) The advantages and challenges of word mapping strategy, and (2) Independent and self-motivated strategy for technical vocabulary learning. These findings themes reflect one central questions of the study, *"what are vocational high school students' responses to the learning of technical vocabulary through word mapping strategy on word map graphic organizer and digital procedure text video?"*

1. The advantages and challenges of Word Mapping Strategy with Word Map Graphic Organizer

The data from the semi-structured interviews showed that students enjoyed learning vocabulary with the Word Mapping Strategy. The students expressed interest in using word maps as graphic organizers during the interviews they conducted with the authors to learn technical vocabulary in contexts where specific words are used for specific topics. However, some students also find it challenging when learning vocabulary with word map graphic organizer. In this study, authors provided a procedure text video with the title "how to add a signature in Microsoft Word".

The advantages of Word Mapping Strategy with Word Map Graphic Organizer

The students' vignettes below showed how students perceive benefits in the use of word map graphic organizer and procedure text video in word mapping strategy to learn technical English vocabulary.

Student's vignette 1

"This vocabulary learning allows us to enhance our English language skills and discover new vocabulary that we haven't learned before. Although using word map graphic organizer combined with YouTube is a new vocabulary learning for us, we can easily understand how to learn technical vocabulary through word map graphic organizer."

Student's vignette 7

"The word map graphic made it easy for us to understand the new vocabulary from the procedure text video on YouTube. Also, I find it very interesting to learn technical vocabulary using these word map and video."

The two students' vignettes confirmed the evidence that learning vocabulary by utilizing Word Mapping Strategy helps students in technical vocabulary for daily learning. The word map graphic organizer offers an additional benefit as it facilitates students' comprehension of new vocabulary. The students expressed that the combination of video based learning and the word map graphic organizer proved to be an effective approach for learning technical vocabulary. They further noted that the procedure text video not only served as a means of acquiring technical vocabulary but also provided them with an

opportunity for active engagement in reading. They became familiar with the definitions and usage of the terminology they learnt through repeated exposure to the words in various videos. The visual illustrations of the meanings of these new words (i.e., signature, proposal, device, track pad, shape). A students' comment gleaned from the interview is presented below.

Student's vignette 2

"For me, word map graphic organizer is helpful to learn vocabulary, because it's really easy to understand. The graphic just like map so we could easily connected the three questions in the map so we are easier understand the meaning of the word."

The students also found that word map graphic organizer is helpful for their vocabulary learning and easy to understand. It is because the graph serve a map's visual that they can developing the word they found and understand the meaning of the word. The following are two vignettes from the students' interview.

The challenges of Word Mapping Strategy with Word Map Graphic Organizer

The students' vignettes below showed how students found challenges in the use of word map graphic organizer and procedure text video in word mapping strategy to learn technical English vocabulary.

Student's vignette 3

"I felt challenged when using the word map graphic organizer because it was our first time experience (learning with the word map graphic organizer) and we didn't yet understand the concept of the word map graphic organizer."

The student found it challenging to learn technical vocabulary using word map graphic organizer because it was their first experience in learning vocabulary using word mapping strategy in vocabulary class. Students explained that they found it challenging because they were not familiar with the word mapping strategy. Students also explained that they should practice more often in learning technical vocabulary using word map graphic organizer. Students also felt confused because the word mapping strategy was a new vocabulary strategy for students in the school. In addition, the following two student vignettes provide empirical evidence of the challenges of working in groups using the word map graphic organizer.

Student's vignette 5

"I found word map graphic organizer is challenging because we work in group, it is quite challenging to find the meaning of each words that we have found in the video, because every students have their own opinion about the meaning or definition of each words"

Student's vignette 7

"The challenge is it was the very first time we used the word map graphic organizer in learning vocabulary, and there were some new technical vocabulary words that we didn't know the meaning of. However, we were able to look up the meaning of the word in glossary and understand the meaning of it"

2. Independent and self-motivated strategy for specialized vocabulary learning

The vignettes of the students demonstrate their enthusiasm as they familiarized themselves with the word mapping strategy format and engaged in discussions. Moreover, the students expressed that the word mapping strategy heightened their awareness of technical words related to Microsoft Word. This strategy provided them with a visual representation to generate both vocabulary and meanings from the Microsoft Word procedure video text. Additionally, it promotes creative learning and fosters a collaborative learning community, with teachers playing a crucial role as guides throughout the word mapping strategy process. The following vignettes from students provide empirical evidence of an independent and self-motivated approach to learning technical vocabulary.

Student's vignette 1

"I feel really motivated to learn vocabulary when I use word map graphic organizer and procedure text video from YouTube. It is a fun activities especially for daily learning. If we have free time we can watch video and learn English, find vocabularies that we not knowing the meaning about from the video and learn it with the word map graphic organizer"

The student vignette show how the word map organizer could increase students' motivation for vocabulary learning. In addition, word mapping can be the starting point of an effective strategy to increase students understand new words, use them in speaking and writing, and form emotional connections with words when reading or watching videos. The student also could learning with word map graphic organizer and video anytime because the students were able to learn it by watching video and find the word then write it on word map graphic organizer. The following two students' vignettes provide empirical evidence on a students' creativity development for technical vocabulary learning.

Student's vignette 5

"This vocabulary learning is very helpful, because in addition to exercising creativity, we can also find new vocabulary that we don't understand. And it was really fun for me because it was the first time we used the word map and procedure text from the video."

Student's vignette 7

"When we used the word map graphic organizer with YouTube, I think it improved our thinking skills, we had to be more creative in connecting the categories and meanings of each word. Also, since we worked in groups, it was fun to fill in the word map graphic organizer with the words we found in the procedure text video."

In terms of integrating the word mapping strategy through the use of word map graphic organizers and digital video, students' creativity in acquiring technical vocabulary may be enhanced. Through the use of word map graphic organizers, students can visually connect and investigate the relationships between technical vocabulary, resulting in a deeper comprehension of the vocabulary. This strategy encourages students to think critically, recognize patterns, and generate creative associations between concepts, thereby expanding their vocabulary in a significant manner. In addition, the incorporation of digital videos provides students with dynamic and engaging demonstrations of technical procedures, captivating their attention and sparking their imagination.

Through the use of visual and aural signals, students are able to visualize the practical application of technical vocabulary, allowing them to form vivid mental images. This combination of the word map graphic organizer and digital video resources not only fosters creativity, but also improves the retention and application of technical vocabulary in real-world settings, thereby facilitating a more comprehensive and engaging learning experience. In addition to supporting their vocabulary development, the word mapping strategy fostered collaboration, critical thinking, and effective communication as students collaborated to navigate the complexities of comprehending and representing the vocabulary in the word map graphic organizer.

Discussion

Overall, word mapping is one of the vocabulary teaching strategies that encourages students' active enquiry into word associations and, by expanding their conceptual understanding of words, results in a richer understanding of word meaning. Students using word maps can connect new words with the knowledge they already have. Graphic model that illustrating conceptual relationships between words is the word map graphic organizer. According to Graves, M. in A. E. Farstrup & S. J. Samuels, (2008, pp.56-79) word mapping strategy is one of the most effective methods for teaching vocabulary because it encourages students to consider the relationships between words.

Widodo (2016, p.122) & Nation (2001, pp.12-13) elaborate that a word appears in written text in four different categories: (1) high frequency words, (2) academic words, (3) technical words, (4) low frequency words. In this study, the authors focused on the third category, which is technical words or technical vocabulary. Technical vocabulary is a special type of vocabulary that should be the focus of learning for learners with specific language learning objectives. Technical vocabulary should be taught by English teachers who want their students' vocabulary to increase (Chung & Nation, 2003; Nation, 2001). These types of words likely account for about 5% of the technical vocabulary in a text (Nation, 2001). In this research, the authors focused on Microsoft Words topics related to the field of study of students majoring in *Teknik Komputer Jaringan.*

This study aims to investigate how vocational high school students react to technical vocabulary used in a word mapping strategy employing a word map graphic organizer and a procedure text video. In addition, this study seeks to determine whether the word mapping strategy can improve the technical vocabulary learning of vocational high school students using a word map graphic organizer. The word map graphic organizer was adapted from Schwartz & Raphael (1985), who created vocabulary mapping to encourage students to shift from dictionary-based definitions to those that illustrate relationships.

In addition, the results of the classroom action research indicated that the majority of students were engaged in learning technical vocabulary through the use of a word map graphic organizer on YouTube as a digital medium of procedure text videos. This finding is supported by Graves' (2006, p.96) assertion that the word mapping strategy has the following benefits: First, it encourages students to become active learners. It also encourages students to expand their vocabulary. When the word mapping strategy is incorporated into the learning process, students become happier and more engaged.

REFERENCES

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. Qualitative Research in Psychology, 3(2), 77–101. DOI: 10.1191/1478088706qp063oa

Burns, A. (2009). Action Research in Second Language Teacher Education. Cambridge Guide to Second Language Teacher Education, 289–297. DOI: 10.1017/9781139042710.038

Chung, T. M., & Nation, P. (2003). Technical vocabulary in specialized texts.

Graves, M.F, (2006), The Vocabulary book: Learning and Instruction, New York: Teachers College Press, P.96.

Graves, M. (2008). Instruction on individual words: One size does not fit all. In A. E. Farstrup & S. J. Samuels (Eds.), what research has to say about vocabulary instruction (pp. 56–79). Newark, DE: International Reading Association.

Nation, I. S. P. (2001). Learning Vocabulary in Another Language. DOI: /10.1017/cbo9781139524759

Schwartz, R. M., & Raphael, T. E. (1985). Concept of definition: A key to improving students' vocabulary. The reading teacher, 39(2), 198-205.

Widodo, H. P. (2016). The ESP vocabulary portfolio as a tool for sustained vocabulary learning. In M. Azarnoosh, M. Zeraatpishe, A. Faravani, &H. R Kargozari (Eds.), Issues in materials development (pp. 121-133). Rotterdam: Sense Publishers.

Yanto, E. S. (2017). IMPLEMENTING VOCABULARY SELF-COLLECTION STRATEGY IN THE EFL COLLEGE CLASSROOM IN ENGAGING STUDENTS'COMMUNICATIVE CLASSROOM. *TLEMC (Teaching and Learning English in Multicultural Contexts)*, *1*(2).