

The Effect of Powerpoint and Nongraphic Paired List Presentations on the Vocabulary Production and Recognition of Elementary-Level College French Students

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Abstract

This study investigates the effect of presenting images via PowerPoint (PPT) and nongraphic paired lists to teach vocabulary. In this study nongraphic paired list (PL) refers to a list of French words paired with their English equivalent. The study, conducted with 38 elementary-level college students, examined their recall performance for written production and visual recognition of French vocabulary words. Students were taught French vocabulary via PPT and nongraphic PL presentations. Quantitative results indicated a significant difference between participants' mean immediate test scores favoring the PPT condition for both written production and visual recognition. The study also investigated participants' instructional perceptions of and preferences for either approach in being taught French vocabulary. Qualitative findings revealed that students expressed a marked preference for learning vocabulary with the PPT approach.

Introduction

The past decade has seen an explosion in the use of technology in all fields. The latest technologies such as document cameras, touch screen projectors, high-speed Internet connection, Blackboard and PPT, are now prevalent in many academic settings in the United States. Because the technologies appeal to visual and auditory senses, they are selected as preferred presentational modes to engage audiences and

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present information quickly and concisely. In several institutions of higher learning in the United States, courses on creating and using PPT presentations are taught to encourage both instructors and students to use the technology effectively.

Despite the wide use of this form of input enhancement and the attempts by several foreign language (FL) textbooks to include ready-made PPT presentation modules in their ancillaries, many FL instructors continue to use nongraphic PL to teach vocabulary.

Despite the wide use of this form of input enhancement and the attempts by several foreign language (FL) textbooks to include ready-made PPT presentation modules in their ancillaries (Mitschke, Tano & Thiers-Thiam, 2007; Jansma & Kassen, 2000), many FL instructors continue to use nongraphic PL to teach vocabulary. However, few studies have experimentally explored and compared the two forms of input on learners' vocabulary acquisition. In addition, the number of studies on the effectiveness of PPT as a pedagogical tool is relatively small.

The purpose of the present study is to fill the current gap in the literature. The study investigated the effectiveness of PPT and nongraphic PL presentations on the written production and visual recognition of vocabulary by elementary-level

French students. Furthermore, it examined students' instructional preferences for and general beliefs about the use of either approach to teach French vocabulary.

Review of the literature

PowerPoint presentations and learning

In a case study, Brandford and Wilson (2003) explored the usefulness of PPT presentations on high school students' motivation and oral skills development in a target language. As part of the project, students were required to give five-minute oral presentations over a period of six months. At the end of the treatment, they answered an open-ended questionnaire to assess the effectiveness of PPT presentations. Results of the study indicated that students benefitted from the project and were quite "surprised by the amount of target language they were able to produce" (p. 20). The authors concluded that the PPT presentations were a key factor in motivating students to speak and improve their oral skills in the target language (TL).

In a different study also involving high school students, Perry (2003) examined how PPT presentations about the content of a literary research paper, prior to completion of the paper itself, would prompt students to (1) learn how to conduct research, (2) start their research project sooner, (3) hone their public speaking skills, (4) improve cooperative learning, and (5) enhance their computer skills. At various stages during the treatment, students were interviewed and answered surveys in which they explained the extent to which the project helped them in the five areas of investigation. Results indicated that students made considerable progress in all five areas. In their survey responses, students confirmed the findings and acknowledged that PPT presentations were beneficial in helping them achieve all of the above-mentioned goals. Results led the researcher to conclude that "requiring students to create and present a PowerPoint project in addition to writing a research paper is an effective means of organizing research assignments for high school students" (p. 68). The researcher also added,

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“when teachers can make the learning process more enjoyable, students will always benefit” (p. 69).

Although these studies have only begun to explore the efficacy of PPT presentations in the classroom, none of them have investigated the potential power of large-scale visual presentations afforded by PPT to learn vocabulary.

Pictures and language learning

In 1979, Omaggio was the first to investigate the impact of pictures on FL acquisition. In her pioneering study, she explored the reading comprehension of psychology and French students under three textual conditions: no text, English text, and French text; and six pictorial contexts: no visual context, single-object drawing related to story, picture depicting the scene from the beginning of the story, picture depicting a scene from the main portion of the story, picture depicting a scene from the end of the story, and a series of three pictures. Students received one of the six pictorial contexts in all three textual conditions. Reading comprehension was assessed by summarizing the text in English and by completing a 20-item vocabulary test. Results of the study indicated that the use of pictures did not affect students' reading comprehension when the text was in English but did, when the text was in French. It appeared that students' viewing of pictures prior to reading the text in French positively impacted their reading comprehension. The results led the author to conclude “a picture of some kind had a significant impact on comprehension of the text, but only when the passage was read in the second language” (pp. 114-115).

Omaggio's study prompted other researchers to explore the effects of various visual and multimedia enhancements on language growth. Those studies include, but are not limited to, Terrell (1986), Underwood (1989), Oxford and Crookall (1990), Neuman and Koshinen (1992), and Jones (2004).

For instance, Terrell's (1986) binding theory suggests that for words to be acquired, they have to be ultimately associated with meaning and not translation. To illustrate his point, he discussed how his teaching of the word *paputsia* (shoes) in Greek by way of pointing to his own shoes and later on via images prompted his students to evoke several associative techniques to understand the word (p. 214). His binding construct indicates that cognitive and affective mental processes that directly link meaning to form positively affect language learning. Oxford and Crookall (1990) echoed the same sentiment. They argue that greater depth of processing is facilitated when pictures and text are combined. Paivio's dual coding theory (1971, 1986) also accentuated these theoretical constructs. His dual coding theory suggests that combining cognitive verbal and non-verbal (imagery) representations during instruction offers an additive advantage to language processing.

While these concepts have been tested in reading comprehension and other forms of input enhancement, they have not been investigated with presentational approaches that combined PPT and nongraphic PL presentations.

In light of the review of literature the present study addressed the following questions:

1. When tested immediately after instruction, do the written production and visual recognition performance of elementary-level French students differ

when they are taught French vocabulary in a PPT or in a nongraphic PL condition?

2. What are students' overall instructional preferences and general beliefs about the use of either approach in being taught French vocabulary?

Methodology and Research Design

Participants

The study was conducted with 38 students in a public university in the southern United States. Participants in the study were enrolled in elementary French (first semester). Initial data were collected for 65 students. However, a decision was made by the researchers to include only participants who were present at all immediate tests and who scored less than 70% on pretests. Including students who scored above 70% at pretest would not have allowed researchers to measure the potential impact of treatment.

All participants were undergraduate students majoring in various fields, including business, sciences, and the humanities. Participants' ages ranged from 18 to 28 years. Of the 38 students, 10 (26.3%) were freshmen, 15 (39.5%) were sophomores, 10 (26.3%) were juniors, and one (2.6%) was a senior. Eleven (28.9%) were male and 25 (65.8%) were female. Thirty-three (86%) reported English as their first language while 3 (7.9%) reported another language as their primary language. All participants were non-native speakers of French. Two students did not report their demographic information. However, because they were present at all testing, their scores were included in the analyses.

Setting

Classes met twice a week for 75 minutes for 15 weeks. Students learned French via the instructional program *Espaces* (Mitschke, Tano & Thiers-Thiam, 2007). The textbook contains nongraphic PL in French and English. Sometimes the vocabulary is presented with pictures and the corresponding words in French. Both textbook and workbook contain an array of communicative activities that check understanding of texts and cultural units for each chapter. Teacher resources include online PPT presentations to teach grammar.

General procedures

The study investigated two sets of vocabulary: clothing and accessories (*les vêtements et les accessoires*) and items in the kitchen (*les objets dans la cuisine*). These two sets of vocabulary are normally introduced in second-semester French. However, for the duration of the study, the researchers chose to modify the first semester curriculum to ensure that, while the study was conducted, students did not familiarize themselves with vocabulary words in the first chapters of their textbook. The selection of second semester vocabulary also minimized students' potential knowledge of words and provided a better framework for the study.

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Testing and scoring procedures

Pretests. A week prior to the beginning the study, students were provided with a background instrument that was used to obtain demographic information, such as gender, native language, previous experience with French, and exposure to other foreign languages. In addition, to test students' prior knowledge of targeted vocabulary words, a 15-item vocabulary pretest was conducted one week before instruction of each vocabulary set. The pretest involved recognition and written production of words.

Immediate tests. Immediately following instruction in the PowerPoint and the nongraphic PL condition, written production and visual recognition tests were administered to students (see The Teaching Procedures section for further discussion of immediate testing). The tests differed in format from pretests.

Posttest. Qualitative posttests were administered at the end of the study. Participants were asked to answer open-ended questions and to explain their instructional preferences and general beliefs of the use of either approach (see Appendix C for open-ended questions).

Scoring. Students' responses for all written production pretests and immediate tests were evaluated on a 1-point scale for each item; a half-point was allowed per correct article and a half-point for correct spelling; a half-point was deducted for an incorrect article and a half-point was deducted for incorrect word spelling; a maximum of 15 points per vocabulary set was possible.

Participants' responses to all visual recognition tests were evaluated on a 1-point scale for each item. In contrast to the written production test where students were to produce in writing both article and word, there was no production involved with the recognition test as students were asked either to match English words to French equivalents or to match pictures to corresponding French words; therefore, a half-point could not be allocated as both paired English and French words or words and pictures were not treated as separate entities; a maximum of 15 points was possible per vocabulary set.

The researcher and a second scorer, not involved in the experiment, independently scored the tests. Both researcher and independent scorer were in complete agreement.

Teaching procedures. Students received vocabulary instruction on 15 clothing and accessories words and 15 kitchen words using both PPT and nongraphic PL presentations. The words used in both conditions were identical. The number fifteen was chosen because it is the number commonly utilized in vocabulary studies (e.g, Carr & Mazur-Stewart, 1988; Markham, 1989; Rodriguez & Sadoski, 2000; Smith, Miller, Grossman, & Valeri-Gold, 1994, Sildus 2006). Researchers on vocabulary recall also suggest that word selection be based on frequency and relevance to the selected topic (De-Groot & Keijzer, 2000; Feldman & Healy, 1998; Nation, 2001; Sildus, 2006; Sousa, 2001). Both vocabulary sets selected for this study are relevant and frequently appear in French textbooks.

The teaching procedures were fully integrated into participants' classroom activities. Prior to the beginning of the study, instructors received lesson plan scripts for targeted vocabulary words. There were four instructors in the study. Of the four, two were female and two were male. Two were non-native and two native speakers

of French. The primary investigator demonstrated how to teach the words in both the PPT and non-graphic PL conditions. Furthermore, she held a practice session with each instructor to ensure consistency of instruction among instructors and was also present at all teaching sessions to observe instructors' adherence to the lesson plan scripts.

At the onset of the study, one group of students received instruction on clothing and accessories in the nongraphic PL condition while the other group was instructed on clothing and accessories in the PPT condition. Four weeks later, students who received instruction on clothing and accessories in the nongraphic PL condition received instruction on kitchen words in the PPT condition; students who previously received instruction of clothing and accessories in the PPT condition now received instruction on kitchen words in the nongraphic PL condition. The teaching of vocabulary words alternated between the two instructional conditions. This type of within-subjects design, referred to as an equivalent time samples design, allows for equal representation of each participant in each condition; it is a design that is also effective in controlling individual differences.

In the PPT condition, vocabulary words and corresponding images in color were introduced and taught via PPT. The instructor introduced the purpose of the lesson in the following manner: *Aujourd'hui nous allons parler de vêtements et d'accessoires. Regardez les images et répétez après moi* [Today we are going to talk about clothing and accessories. Look at the images and repeat after me]. After the vocabulary topic was orally introduced, the instructor clicked on the mouse and a colored picture of a handkerchief was projected onto the screen together with the corresponding French word written below the picture. Students chorally repeated the word *un mouchoir* once in French after their instructor. Teaching of the additional 14 vocabulary items continued in the same manner. Furthermore, during the entire presentation, words using masculine articles were highlighted in blue and words using feminine articles were highlighted in red. Words using masculine articles were taught first, followed by words using feminine articles. Prior to moving from masculine to feminine words, the instructor signaled transition by saying *Attention* [Pay attention!]. The presentation lasted about 10 minutes.

Following instruction, the PPT presentation was turned off and immediate testing followed. To minimize possible rote memorization, the vocabulary words were rearranged and listed in a different order from the initial presentation (Sildus, 2006). In addition, the written production test was administered first, followed by the visual recognition test. The production test consisted of writing the French word and its corresponding article below the picture that represented the word. The visual recognition test required students to match the French word to its corresponding image (see Appendix A for a sample of immediate tests in the PPT condition).

In the nongraphic PL condition, each student received a page with paired words in two columns respectively; in one column there were words in French and in the second were the English equivalent of the French words. Students also received a blank index card to cover all the words. The instructor introduced the topic of the lesson in French and stated: *Aujourd'hui nous allons parler de vêtements et d'accessoires. Regardez la paire de mots de vocabulaire en français et en anglais sur votre liste et répétez*

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seulement le mot en français après moi [Today we are going to talk about clothing and accessories. Look at the paired vocabulary words in French and English on your list and repeat only the French word after me]. The instructor demonstrated by moving the index card to show the first pair of words. Students also moved the index card to display the first pair, *un mouchoir*/ a handkerchief. The instructor said: *un mouchoir* and students chorally repeated the French word once after it was introduced. Students then moved the index card below the second pair of French and English word, and the teaching of the additional 14 vocabulary words continued in the same manner. As in the PowerPoint condition, during the entire presentation, words with masculine articles were highlighted in blue while words with feminine articles were highlighted in red. Masculine words were presented first and feminine words second. Prior to moving from masculine to feminine words, the instructor signaled transition by saying *Attention* [Pay attention]! The presentation also lasted about 10 minutes.

After choral repetitions of all vocabulary words, students returned both list and blank index card to their instructor and immediate testing followed. As in the PPT condition, the written production test was administered first, consisting of writing the French word and its corresponding article below the English word. The visual recognition test consisted of matching the French word to its English equivalent (see Appendix B for a sample of immediate tests in the nongraphic PL condition).

Instructional and testing formats were identical in both conditions. Both the production and recognition tests selected for this study are the types of tests recommended by Nation (2001). The only place where testing and instruction differed was in the use of images in the PPT condition and French words with their English equivalent in the nongraphic PL condition.

Results

Preliminary analyses

Preliminary analyses were conducted. A one-way analysis of variance (ANOVA) was conducted to compare participants' mean total pretest scores before the beginning of the treatment. The comparison of participants' total means indicated that there was no statistically significant pretest difference among students for written production, $F(3, 34) = .366, p = .778$ or at visual recognition of clothing and accessories vocabulary words $F(3, 34) = .451, p = .718$. The same results were observed for kitchen vocabulary words. There was also no statistically significant pretest difference among participants at written production, $F(3, 34) = .350, p = .790$ or at visual recognition, $F(3, 34) = .452, p = .717$.

Test of Research Questions

Question 1: When tested immediately after instruction, do the written production and visual recognition performance of elementary-level French students differ when they are taught French vocabulary in a PPT or in a nongraphic PL condition?

A paired t test was conducted on test scores to evaluate the immediate impact of PPT and nongraphic PL instruction on students' written production and recognition of vocabulary words.

For the written production, test results indicated that the mean for immediate vocabulary test scores when students were taught vocabulary words in the PPT condition was significantly greater than the mean for immediate vocabulary scores when students were taught the same words in a nongraphic PL condition , $t(37) = 2.07$, $p = .045$, $\eta^2 = 0.34$.

For visual recognition, test results indicated that the mean for immediate vocabulary test scores when students were taught the vocabulary words in a PPT condition was significantly greater than the mean for immediate test scores when students were taught the identical words in a nongraphic PL condition , $p = .003$, $\eta^2 = 0.52$. Table 1 displays test scores means and standard deviations by condition.

Table 1. Total vocabulary immediate tests ($N = 38$)

Immediate test scores	PowerPoint condition	Nongraphic Paired list condition
Production	$M = 6.18, SD = 2.65$	$M = 5.15, SD = 2.46$
Recognition	$M = 10.39, SD = 4.03$	$M = 7.55, SD = 3.63$

Question 2: What are students’ overall instructional preferences and general beliefs about the use of either approach in being taught French vocabulary?

The response to this question was analyzed both quantitatively and qualitatively.

Quantitative results

Descriptive statistics results indicated that 29% (11 students) of participants preferred to be taught French vocabulary with nongraphic PL while 50% (19 students) indicated that they preferred to be taught French vocabulary with PPT. When asked which condition helped them best remember the vocabulary words, 30% (11 students) credited the nongraphic PL condition while 47.4% (18 students) indicated that PPT presentations was most beneficial. One student (2.6%) indicated that a combination of both nongraphic PL and PPT was most helpful for recalling vocabulary words. Overall, students’ responses were consistent with their quantitative scores at immediate testing. When asked what condition they would use if they were French instructors, 13.2% (five students) stated that they would use a nongraphic PL presentation, 34% (13 students) indicated that they would use PPT presentations, and 31.6% (12 students) stated that they would use both PPT and nongraphic PL conditions. Eight of the participating students were absent at qualitative posttests and could not answer the open-ended questions.

Qualitative results

The participants’ written responses to the open-ended questions were analyzed and coded. Responses coalesced into two groups: (a) instructional preference to teach French vocabulary and reasons for such responses, (b) overall perceptions on the use of either approach to teach French vocabulary in general.

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Responses to instructional preference to teach French vocabulary

PowerPoint preference. In their open-ended responses, the majority of students expressed a marked preference for the PPT condition. Most students felt that the word and picture association contributed to their success. One student explained, "I like this [PowerPoint] better because it was easier to associate pictures with words." The "easy" factor was a recurring theme in students' responses. There was also a general consensus among students that individual learning styles played a role in their responses. Several students admitted that they were visual learners and preferred to be taught with images. The following student's comment echoed their sentiment: "I am a visual learner and I like things that way." Another student alluded to the use of colorful images and the role it might have played in remembering the targeted vocabulary. She stated: "I could remember the words and articles because I remembered seeing the pictures and colors.... The PowerPoints were better because there were pictures, words, and colors to help me remember. Color is beneficial to memory and there is only one word per slide which makes it easier to learn that word and move on." There were also comments about the "fun" and engaging impact of PPT presentations. One student explained, "I like the PowerPoint presentations because they are more fun and encouraged more students' participation and engagement."

Nongraphic paired list preference. The few students who preferred the nongraphic PL condition also credited it for facilitating their learning of vocabulary. Some stated that having the French words next to their English equivalent made learning easier. One student said: "The two words together helped more than seeing the pictures." Other students commented on how having the vocabulary words readily in front of them was beneficial for learning and maintaining focus during instruction. A student observed, "I get distracted by the pictures and I think the paired list [nongraphic PL] worked well for me," while another wrote, "I learned better having the word right in front of me on paper."

Overall perceptions on the use of either approach to teach French vocabulary in general

Students' overall perceptions and beliefs suggested that they prefer the PPT presentations. However, it was interesting to note that when asked what they would do if they were French instructors, a number of students were reluctant to choose one or the other approach and chose both instead. A recurrent reason stated for this choice by students was that they "learned differently."

Discussion

The present study compared the effectiveness of PPT and nongraphic PL presentations on the written production and visual recognition of vocabulary by elementary-level French students. Results indicated that when taught thematic French vocabulary PPT presentations, students' written production and visual recognition of vocabulary words were significantly

Results indicated that when taught thematic French vocabulary PowerPoint (PPT) presentations, students' written production and visual recognition of vocabulary words were significantly superior in the PPT condition than in a nongraphic paired list condition.

superior in the PPT condition than in a nongraphic PL condition.

One can argue that because the vocabulary words were brought to life in the form of large-scale images, learning was better in the PPT condition. This finding is congruent with Terrell's binding construct (1986). In this study, the translation of vocabulary words from French to English did not seem to have aided students retain the words at immediate testing. However, students' cognitive skills appeared to have been deepened when taught in the PPT condition with no translation and only with images and words. The word and image association facilitated the binding process. Images were directly linked to their meaning without recourse to translation. As students were hearing, repeating, and seeing graphic representations of targeted words, they could quickly make the necessary mental connections that ultimately led them to a better performance at immediate testing.

Given the study's findings, it is reasonable to argue that the mental translations from French into English and back into French in the nongraphic PL condition may have slowed down the quick processing of words and hence impacted immediate learning. It is also possible that the act of translating back and forth may have added an additional burden in processing, a burden that could not be easily lifted at immediate testing. It appears that in the PPT condition, with the absence of words in English and a direct focus on images and their French equivalent, students were able to pay more attention to the visual and written representations of the words. Findings of this study support Omaggio's conclusion that indicated that pictures do impact comprehension only when they are used with a text written in a target language (1979).

Results of this study are also congruent with other studies that demonstrated that words are better remembered and comprehended when they are associated with images than text alone (Underwood, 1989, Oxford & Crookall, 1990). In the PPT condition

... words are better remembered and comprehended when they are associated with images than text alone.

the "text" consisted of vocabulary words written in French below the image. It appears that the combination of images and words facilitated greater depth of processing and access to various parts of the brain. In the nongraphic PL condition however, the "text" consisted of a pair of a French word and its English equivalent presented alone. There were no images, only French words paired with their English equivalent. The

results suggest that in the absence of images, students were not able to reach the same depth of processing as they were with PPT. The use of English in the nongraphic PL condition did not appear to have been an effective substitute to the visual stimuli utilized in the PPT presentation. Results of the study are also consistent with Paivio's dual coding theory (1971, 1986). As previously explained, the theory posits that the verbal and non-verbal systems present in memory and cognition can function independently. However, Paivio also argues that the two systems can also interconnect and when they do interconnect, learning is richer and more meaningful. In both the nongraphic PL and the PPT conditions students were verbally presented words by their instructor, which they repeated chorally. However, the addition of non-verbal objects, i.e., images, in PPT appear to have provided a further advantage. The interconnections of the non-verbal and verbal systems that occurred with students using PPT may have led to a more successful learning of vocabulary words.

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This study also sought to capture and incorporate students' voices in order to gain a deeper perspective on two presentational approaches: PPT and nongraphic PL presentations. The qualitative results supported, expanded, and explained the quantitative results. Students overwhelmingly preferred to be taught French vocabulary with PPT presentations. These results are not surprising considering the fact that today's students are constantly surrounded by technology that enhances and makes ample use of abundant visuals. The majority of students also stated that the PPT presentations were more helpful than the nongraphic PL presentations in recalling the vocabulary words. According to brain scientist Medina (2008), human beings are incredible at remembering pictures and remember 10% of what they hear but 65% of what they see. In the PPT presentations, students heard and saw. The combination of the two simultaneous activities allowed them to better focus their attention. Both students' voices and immediate performances speak to the benefits of the visually engaging learning experience afforded during PPT instruction.

Limitations and conclusion

First, setting and adherence to curriculum made it extremely difficult to break apart existing classes, let alone to randomly select participants to conduct experimental research. As a result, findings of this quasi-experimental study cannot be generalized to all beginning-level French students.

Secondly, this study was conducted in a controlled classroom environment and focused on the immediate impact of PPT and nongraphic PL instruction. Further studies might investigate the long-term effect of these two approaches on students' vocabulary retention. They might also explore how students' own involvement in the creation of animated and motionless PPT might affect their written learning of vocabulary words. There is also a need for research that would explore the use of color in PPT presentations and nongraphic PL. It would be worthwhile to replicate this investigation with both black and white and colored pictures to determine the potential role of color in learning.

The current study also limited itself to thematic concrete words. Future studies might investigate the impact of PPT and nongraphic PL presentations on various learning styles.

Despite the limitations of this study, this investigation fills a void in the research on FL and instructional technology. It is also an important step in building classroom-based research on the effectiveness of PPT presentations as an effective pedagogical and technological tool to learn vocabulary. Although several textbooks continue to present nongraphic PL vocabulary without regard to their effectiveness, instructors can now choose to present the same information via PPT and by so doing, facilitate learning vocabulary by their students. PPT presentations not only provide visual reinforcement but they allow information to be thematically organized, stored and recycled; they save instructional time and drastically reduce the need or temptation to use English in the classroom. Some of the pedagogical techniques used in the study can easily be applied in the classroom to enhance vocabulary learning. They are:

- (1) keeping the PPT presentation brief;

- (2) presenting only one picture per slide at a time;
- (3) writing below each image both word and article in the TL;
- (4) engaging students in choral repetition of vocabulary words.

In addition, though the following technique was not used in the study to limit the number of confounding variables in the study, PPT can also be used to review words or to engage students in follow-up questions and further discussions.

This study provides evidence suggesting that PPT presentations are an important variable in learning vocabulary words in a target language. Further, the combined quantitative and qualitative designs used to explore the research questions afforded empirically rich content in which to ground claims about the effectiveness of PPT in a FL context. It is hoped that this study will contribute to the chain of FL classroom-based research on the effectiveness of technology.

References

- Brandford, V., & Wilson, R. (2003). Using PowerPoint to develop pupils' oral skills in modern foreign languages. *Francophonie*, 28, 18-24.
- Carr, E.M., & Mazur-Stewart, M. (1988). The effects of the vocabulary overview guide on vocabulary comprehension and retention. *Journal of Reading Behavior*, 20(1), 43-63.
- De-Groot, A. M. B. & Keijzer, R (2000). What is hard to learn is easy to forget : The roles of word concreteness, cognate status and word frequency in foreign-language vocabulary and forgetting. *Language Learning*, 50(1), 1-56.
- Feldman, A., & Healy, A.F. (1998). Effect of first language phonological configuration on lexical acquisition in a second language. In A. F. Healy & L.E. Bourne, Jr. (Eds), *Foreign language learning: Psycholinguistic studies on training and retention* (pp. 57-76). Mahwah, NJ: Erlbaum.
- Jansma, K., & Kassen, M. (2000). *Motifs: An introduction to French*. Boston: Thomson Heinle.
- Jones, L. (2004). Testing L2 vocabulary recognition and recall using pictorial and written test items. *Language Learning and Technology*, 3, 122-143.
- Markham, P. L. (1989). Effects of contextual versus definitional computer-assisted vocabulary instruction on immediate and long-term vocabulary retention of advanced ESL students. *Educational Psychology*, 9(2), 121-126.
- Medina, J. (2008). *Brain rules: 12 principles for surviving and thriving at work, home and school*. Seattle: Pear Press.
- Mitschke, C., Tano, C., & Thiers-Thiam, V. (2007). *Espaces*. Boston: Vista Higher Learning.
- Nation, I. S. P. (2001). *Learning vocabulary in another language*. Cambridge: Cambridge University Press.
- Neuman, B., & Koshinen, P. (1992). Captioned television as comprehensible input: Effects of incidental word learning from context for language minority students. *Reading Research Quarterly*, 27(1), 95-106.

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- Omaggio, A. C. (1979). Picture and second language comprehension: Do they help? *Foreign Language Annals*, 12(2), 107-116.
- Oxford, R., & Crookall, D. (1990). Vocabulary learning: A critical analysis of techniques. *TESL Canada Journal*, 7(2), 9-30.
- Paivio, A. (1971). *Imagery and verbal processes*. New York: Holt, Rinehart, and Winston.
- Paivio, A. (1986). *Mental representation: A dual-coding approach*. New York: Oxford University Press.
- Perry, A. E. (2003). PowerPoint presentations: A creative addition to the research process. *English Journal*, 92(5), 64-69.
- Rodriguez, M., & Sadoski, M. (2000). Effects of rote, context, keyword and context/keyword methods on retention of vocabulary in EFL classrooms. *Language Learning*, 50(2), 385-412.
- Sildus, T. (2006). The effect of a student video project on vocabulary retention of first-year secondary school German students. *Foreign Language Annals*, 39(1), 54-69.
- Smith, B. D., Miller, C., Grossman, F., & Valeri-Gold, M. (1994). Vocabulary retention: Effects of using spatial imaging on hemispheric-preference thinkers. *Journal of Research and Development in Education*, 27(4), 244-252.
- Sousa, D. A. (2001). *How the brain learns* (2nd ed.) Thousand Oaks, CA: Corwin Press.
- Terrell, T. (1986). Acquisition in the natural approach: The binding /access framework. *The Modern Language Journal*, 70(3), 213-227.
- Underwood, J. (1989). HyperCard and interactive video. *CALICO*, 6(3), 7-20.
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Appendix A

Sample of immediate production and recognition tests in the PowerPoint condition

Les objets dans la cuisine: (PowerPoint condition tests)

Immediate production test # 1

Écrivez **CLAIREMENT** sous l'image le mot de vocabulaire qui correspond en français. Écrivez l'article (*un* ou *une*) et le mot de vocabulaire. [Please LEGIBLY write under the image the corresponding vocabulary word in French. Write both the article (*un* or *une*) and the vocabulary word in French.]



1. _____



2. _____



3. _____



4. _____



5. _____



6. _____



7. _____



8. _____



9. _____



10. _____



11. _____



14. _____



12. _____



13. _____



15. _____

Please turn in immediate test # 1 first and then collect immediate test # 2.

The Effect of Powerpoint and Nongraphic Paired List Presentations

Les objets dans la cuisine: (PowerPoint condition tests)

Immediate recognition test # 2

Faites correspondre l'image au mot français SVP! [Please match the picture to the French word.]



1. _____



6. _____



11. _____



2. _____



7. _____



12. _____



3. _____



8. _____



13. _____



4. _____



9. _____



14. _____



5. _____



10. _____



15. _____

a. un balai
b. une assiette
c. un verre
d. un couteau
e. un tapis

f. une cuillère
g. une fouchette
h. un frigo
i. une cafetière
j. une serviette

k. un aspirateur
l. un four
m. une bouilloire
n. une casserole
o. une tasse

Please turn in immediate test #2. Merci!

Appendix B

Sample of immediate production and recognition test in the paired list condition

Les objets dans une cuisine: (Nongraphic paired list condition test)

Immediate production test # 1

Ecrivez CLAIREMENT en français le mot de vocabulaire français qui correspond au mot anglais. Ecrivez l'article (un ou une) et le mot de vocabulaire en français. [Please LEGIBLY write the French word that corresponds to the English word. Write both the article (*un* or *une*) and vocabulary word in French.]

- | | | |
|----------------------|-------|-------|
| 1. A napkin | _____ | _____ |
| 2. A coffeemaker | _____ | _____ |
| 3. An oven | _____ | _____ |
| 4. A cup | _____ | _____ |
| 5. A broom | _____ | _____ |
| 6. A kettle | _____ | _____ |
| 7. A rug | _____ | _____ |
| 8. A fork | _____ | _____ |
| 9. A glass | _____ | _____ |
| 10. A spoon | _____ | _____ |
| 11. A cooking pot | _____ | _____ |
| 12. A plate | _____ | _____ |
| 13. A vacuum cleaner | _____ | _____ |
| 14. A refrigerator | _____ | _____ |
| 15. A knife | _____ | _____ |

Please turn immediate test # 1 in first and then collect immediate test # 2.

Les objets dans une cuisine: (Nongraphic paired list condition test)

Immediate recognition test # 2

Faites correspondre le mot anglais au mot français SVP! [Please match the English word to the corresponding French word.]

- | | |
|-----------------------|-------------------|
| 1. ___ A rug | a. un balai |
| 2. ___ A glass | b. une assiette |
| 3. ___ A spoon | c. un verre |
| 4. ___ A fork | d. un couteau |
| 5. ___ A plate | e. un tapis |
| 6. ___ A broom | f. une cuillère |
| 7. ___ A knife | g. une fourchette |
| 8. ___ A kettle | h. un frigo |
| 9. ___ A napkin | i. une cafetière |
| 10. ___ A cooking pot | j. une serviette |

The Effect of Powerpoint and Nongraphic Paired List Presentations

- | | |
|--------------------------|-------------------|
| 11. ___ A refrigerator | k. un aspirateur |
| 12. ___ A coffeemaker | l. un four |
| 13. ___ A cup | m. une bouilloire |
| 14. ___ An oven | n. une casserole |
| 15. ___ A vacuum cleaner | o. une tasse |

Appendix C

Open-ended survey questionnaire

1. You were taught French vocabulary through PowerPoint presentations and Non-graphic paired lists conditions. Which instructional approach did you prefer to be taught vocabulary in? Please indicate your preference by circling one answer and by briefly explaining your choice.
 - a. Nongraphic paired lists
Briefly explain your choice.
 - b. PowerPoint Presentations
2. In your opinion which instructional condition helped you best remember the vocabulary words?
 - a. Nongraphic paired lists
Briefly explain your choice.
 - b. PowerPoint presentations
3. In your opinion are there any advantages to using PowerPoint presentations to teach French vocabulary?
 - a. Yes
 - b. NoBriefly explain your choice.
4. In your opinion are there any disadvantages to using PowerPoint presentations to teach French vocabulary?
 - a. Yes
 - b. No.Briefly explain your choice
5. In your opinion are there any advantages to using nongraphic paired lists to teach French vocabulary?
 - a. Yes
 - b. NoBriefly explain your choice.
6. In your opinion are there any disadvantages to using nongraphic paired lists to teach French vocabulary?
 - a. Yes
 - b. NoBriefly explain your choice.
7. If you were a French instructor which instructional approach would you use to teach vocabulary:
 - a. PowerPoint presentations
Briefly explain your choice
 - b. Nongraphic paired lists?

