The Relationship Between Cognitive Approach and The Development of Engineering-Majoring Freshmen' Speaking Skills

Dr. AL-Shaimaa Abdullah El-Maghraby
Lecturer in the Faculty of Foreign Languages and Translation
English Department (Curriculum and EFL instruction)
Misr University for Science and Technology (MUST)

Abstract:

The study explored the relationship between cognitive approach and the improvement of the speaking skills of sixty first-year engineering majoring students. They had to study English for special purposes (ESP) course as a requirement for the engineering program. The sixty students were registered at October High Institute For Engineering and Technology. They were employed as a purposive sampling group which took the pre- and post-tests of data collection instruments. Data were collected through a 26-item questionnaire of cognitive approach strategies and a speaking skills test. As for data analysis, the study adopted mixed methods of quantitative and qualitative approach. One way analysis of variance (ANOVA) was employed to detect the statistical significant differences in the pre-and posttests of cognitive approach strategies and speaking skills test. The study also aimed to verify the positive effectiveness of cognitive approach strategies on the improvement of the students' English speaking skills. The study introduced teaching implications based on the necessary incorporation of cognitive approach strategies into the instruction of English speaking skills.

Keywords:

cognitive approach, speaking skills, engineering-majoring freshmen, teaching implications.

العلاقة بين المنهج المعرفى و تطوير مهارات التحدث لدى طلاب الفرقة الجامعية الأولى المتخصصين فى دراسة الهندسة

د. الشيماء عبد الله أحمد المغربى

مدرس بكلية اللغات والترجمة- قسم اللغه الإنجليزية (مناهج وطرق تدريس لغه إنجليزية)
جامعة مصر للعلوم والتكنولوجيا

الملخص

قامت الدراسة بإستكشاف العلاقة بين المنهج المعرفى لتحسين مهارات التحدث لدى ستون من طلاب الفرقة الجامعية الأولى المتخصصين فى دراسة الهندسة و الذين يدرسون مقرر اللغة الإنجليزية لأغراض خاصة طبقا لمتطلبات برنامج الهندسة فى المعهد العالى للهندسة والتكنولوجيا بمدينه السادس من اكتوبر، حيث تم إستخدامهم كعينة بحثية محددة الغرض قامت بإجراء الأختبار القبلى و البعدى لأدوات تجميع البيانات البحثية، و التى شملت إستبيان مكون من ٢٦-بندا لإستراتيجيات المنهج المعرفى و أختبار مهارات التحدث ، و فيما يتعلق بتحليل البيانات البحثية تبنت الدراسة طرقا مختلطة لمنهج التحليل الكمى و الكيفى حيث أستخدمت تحليل التباين لإكتشاف الفروق ذات الدلالة المعنوية الهامة فى الأختبارات القبلية و البعدية للإستبيان و إختبار مهارات التحدث، و هدفت الدراسة ايضا إلى تمحيص الفعالية الإيجابية لإستراتيجيات المنهج المعرفى على تحسن مهارات التحدث لدى العينة البحثية، و قدمت الدراسة مضامين تدريسية تقوم على ضرورة دمج إستراتيجيات المنهج المعرفى فى تدريس مهارات التحدث باللغة الإنجليزية.

الكلمات المفتاحية:

المنهج المعرفى، مهارات التحدث، طلاب الفرقة الجامعية الأولى المتخصصين فى دراسة الهندسة، مضامين تدريسية.

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Background of the study

Belkhir (2020) and Nurieva (2019) clarified that the cognitive approach views language learning a multi-facet process which involves consciousness, thinking, and on purpose practices of cognitive learning strategies. It is known as a comprehension-based practice of language knowledge. It requires language learners to meaningfully practice language knowledge based on their comprehension of various language rules. Foreign language learners can sustain their understanding of English language skills through the processes of information processing and retention. The cognitive learning approach considers EFL learners as processors of language knowledge in the sense that they retain and transfer such knowledge into cognition and memory. Language learning is a cognitive process because the main function of language use is to realize communication. Malysheva (2015) and Korzh (2017) explained that the communicative function of language involves proper lexical selection, observation of grammar rules, ability to synthesize sentence structure and proper pronunciation of utterances. All these components form the main constituents of FL learners' speaking skills. The components mastery of FL speaking skills is influenced by cognitive processes such as awareness of the differences between sounds articulation, memory of FL vocabulary and synthesized structure of utterances. Thus, it is the role of FL instructors to train EFL learners to employ cognitive learning strategies that can help them overcome difficulties of learning FL speaking skills. Neo (2017), Sreena and Ilankumaran (2019), Wang (2019), and Voskerchyan and Lepichova (2021) pointed out that there are different cognitive strategies for learning FL speaking skills. The first of these strategies is the FL learners'

ability to map communicative concepts. That is, there ability to connect the previous knowledge to the newly acquired knowledge. The second cognitive strategy refers to words identification ability of FL learners. The third cognitive strategy is the FL learners' ability to visualize desired things. The fourth cognitive strategy is related to the FL learners' ability to repeat learning practices several times for the purpose of memorizing knowledge and information. Besides, there are other cognitive strategies that sustain FL learners' memory such as using cues, *chunking*, connecting knowledge remembrance to things, the use of *Mnemonic, questioning*, and loud pronunciation of words. Therefore, it was necessary to examine the relationship between the practice of cognitive learning strategies and the development of ESP learners' speaking skills.

Statement of the problem

The current study investigated the relationship between the cognitive approach strategies and the improvement of the students' English speaking skills. The present study discussed the cognitive approach strategies that the students adopted before receiving activities of cognitive approach strategies. The present study also accounted for the improvement of the students' English speaking skills in light of the cognitive approach activities. In other words, the present study discussed the students' performance in English speaking skills before and after receiving training on the English speaking skills activities. The present study provides an explanation to language instructors on the students' speaking skills and how such skills can be improved through using the cognitive approach strategies.

Hypotheses

The present study tested the two null hypotheses:
1. Statistical significant differences do not exist among the students in the pre- and posttests of the cognitive approach questionnaire and English speaking skills test.

2. The cognitive approach strategies do not positively affect the students' improvement of English speaking skills.

Questions
The present study sought answers to the following questions:
- What are the students' cognitive approach strategies employed in responding to the pre-and post-administrations of the questionnaire?
- Is there a statistically significant difference between the students' responses to the pre-and post-administrations of the questionnaire?
- How do the students perform in the English speaking pre- and posttests?
- To what extent there is a statistical significant difference between the students' performance in the English speaking skills pretest and posttest?
- What is the effectiveness of the activities of cognitive approach strategies on improving the students' English speaking skills?

Aims of the Study
- The present study aimed to identify:
- 1. The students' cognitive approach strategies employed in responding to the pre-and post-administrations of the questionnaire.
- 2. There statistically significant difference between the students' responses to the pre-and post-administrations of the questionnaire.
- 3. The students' performance in the English speaking pre- and posttests.
- 4. The statistical significant difference between the students' performance in the English speaking skills pretest and posttest.

- 5. The effectiveness of the activities of cognitive approach strategies on improving the students' English speaking skills.

Significance of the study

The study is significant because it highlights the importance of cognitive approach strategies on improving the students' speaking skills. The present study also provides information to language instructors on the students' cognitive approach strategies and their impact on developing the students' performance in English speaking skills test. The study attracts the curriculum planners' attention to observe the cognitive approach strategies which the students may employ in their attempt to learn and understand the English speaking skills. Thus, the English curriculum planners can devise and select the learning materials of English speaking skills on the basis of the cognitive approach and strategies exerted by the students. The present study also generally contributes to the literature of foreign language learning and teaching and English in Egypt. In addition, other higher learning institutions in Egypt can also benefit from the present study to develop their students' performance in FL speaking skills.

Delimitations of the Study

The present study proceeded within the following limits:

- The sample of the study is a group of first year students of October High Institute For Engineering and Technology
- Speaking skills

Literature review

Nassar (2019) investigated the effect of cognitive reading strategies on improving the creative reading skills of 64 Egyptian secondary school students. Nassar adopted the quasi-experimental research design where the participants were divided into a control group and an experimental group. Data were collected by using a

pretest and a posttest of creative reading. Nassar also used a checklist of creative reading skills in terms of fluency, elaboration, flexibility and organization. Nassar employed a rubric for the purpose of test correction as well. Nassar found that the cognitive reading strategies had positive impact on developing the participants' four reading skills. The cognitive reading strategy usefully improved the participants' creative reading skills. The experimental participants were more able to generate new words and ideas from the reading texts, arrange the story incidents properly, make questions of the text information, make predictions, had differ views on the texts, detecting the missing parts of the reading texts, provide suggested ideas not included in the reading texts, and elaborate on the reading texts. Elaboration took forms of writing paragraphs on the texts, add details to the story map, and add details to the story settings.

Tesnim (2019) discussed the effect of oral corrective feedback on improving the Tunisian EFL students' speaking skills covering the aspects of fluency, grammar, vocabulary and pronunciation. The participants were 20 first-year university Tunisian EFL students who are majoring in studying French as a second language. Their speaking skills were pre and post-tested. After the pretest, the participants received oral feedback corrections in the forms of recasts, prompts, and explicit feedback. Then, the participants were post-tested. Two language teachers rated the participants' oral errors including grammar, pronunciation and fluency. Data analysis was based on the quantitative and qualitative methods by using MELA Scoring Matrix. Although the participants varied in their oral performance, the findings revealed positive effect of using the oral corrective feedback on improving the participants' oral speaking skills in terms of only grammar rules. The explicit oral corrective feedback did help the participants to improve their pronunciation and fluency. In other words, the oral corrective feedback which participants received after the pre-test and while performing communicative activities, improved the grammatical features of their oral communication skills. The

participants their use of English tenses, particularly the observance of subject-verb agreement, and the use of correctly formed sentences. Due to oral corrective feedback, the participants improved their use of lexical items, word formation using prefixes and suffixes. The participants improved use of vocabulary was evident in the rephrasing of ideas and thoughts. On the other hand, the oral corrective feedback did not indicate significant improvement in the participants' fluency and pronunciation.

Safitri Rafli and Dewanti (2020) investigated the impact of using task-based learning on improving the speaking skills of 15 Indonesian higher learning students registered at the Department of English. Data were collected through speaking skills pre- and posttests, interview and observation. The students were asked to complete task-based speaking activities through three phases. The first phase, students were introduced to a topic on class meeting; they learned expressions and vocabulary necessary to fulfill the learning task. In phase two, the students practiced in pairs different speaking activities such as role-plays, dialogues, turn-taking strategies, etc. in phase three, the students were required to report on their speaking activities and received feedback. The findings showed that the students had problems to demonstrate their English speaking skills because of their poor knowledge in English phonology and self-confidence lack. The students were not adequately exposed to the practice of English speaking activities. Due to the task-based learning activities, the students realized the importance of over and over again practice of the speaking activities. Such practice should be only restricted to the class rooms but can be expanded outside the classrooms. The speaking activities practice helped reinforced the students' self-confidence in expressing their ideas spontaneously, and increased the proficiency in the proper use of English grammar and vocabulary while speaking.

Genelza (2022) discussed the important relation between 132 first year students' soft communication skills and the development of their cognitive strategies in learning English. The soft communication skills cover a range of communication levels:

oral, written, electronic and multicultural. The development of students' cognitive strategies occurs at the levels of learning activities and learning outcomes. Data were collected by using a questionnaire-based task. The findings indicate that the participants' soft communications skills are necessary foundations to develop their personal and career cognitive skills. The findings were attributed to the high correlation between the students' soft communication skills and their cognitive strategies. Genelza explained that each student had distinctive soft communication skills which require further improvement through employing instruction activities that enhance the participants' cognitive strategies. These activities should be based on performance, outcomes and application of what students had learned through such activities. Genelza recommended that soft communication skills can be extended to develop other features of English courses such as the development, planning and assessment of English courses to enhance students' cognitive strategies.

Luangkrajang (2022) examined the effect of employing mind-mapping based instruction on developing the collaboration, creativity and language skills of 93 Thai grade 12 students. Data were collected by employing different instruments. A questionnaire was used to collected data on the participants' viewpoints on the use of mind mapping techniques in learning English reading and vocabulary. In addition, the textbook units' tests were used to evaluate the participants' language skills. Luangkrajang employed the quasi-experimental research design where only one group was post-tested. Students were asked to use mind mapping techniques to organize, analyze and process information included in the reading passage and dialogues of the school textbook. Luangkrajang found that not only was mind mapping effective in enhancing the Thai students' language skills their cognitive ad affective skills as well. Students showed better understanding of English vocabulary and grammar rules. The mind mapping techniques also increased the participants' skills of collaboration, creativity, organization and critical thinking. Students showed

positive attitudes towards the inclusion of mind-mapping based activities in English classrooms which activated their participation in the classes.

Method

The mixed method of quantitative and qualitative approach was adopted for the purpose of analyzing the collected data (Goh, 2007, Neo, 2017, Nurieva, 2019 and Tesnim, 2019). Quantitative analysis used the mean scores to determine the kinds of cognitive approach strategies that the students employed in the pre- and post-administrations of the questionnaire of cognitive approach strategies. One way analysis of variance (ANOVA) was also used for three purposes. First, it showed the difference between the students' responses to the pre and post-administrations of the cognitive approach strategies questionnaire items. Second, it indicated the difference between the students' performance in the English speaking skills pre- and posttests. Third, the difference between the students' performance in the English speaking skills pre-posttests can indicate the effectiveness of the cognitive speaking skills activities. Furthermore, the qualitative approach provides explanation of the students' responses to the pre- and post-administrations of the questionnaire items.

Participants

The sixty students were registered at October High Institute For Engineering and Technology. They had to study English for special purposes (ESP) course as a requirement for the engineering program. Data were collected during the Second semester of the academic year 2021-2022.

Procedure

The sixty students were selected on random basis to ensure representativeness. They were employed as a purposive sampling whose responses to the cognitive approach strategies questionnaire

and performance in the speaking skills test were analyzed twice. The current study employed the pre- and post-administrations technique of the two data elicitation instruments: the cognitive approach strategies questionnaire and the English speaking skills test. The pre-and post-administrations of each instrument spanned two sessions with each session lasted one and a half hours. The validity and reliability of the Cambridge Preliminary English Test (PET) were ascertained as it is an international test devised by the University of Cambridge. Meanwhile the cognitive approach strategies questionnaire was piloted by using 20 students. Its Cronbach's alpha coefficient was .89 indicating high reliability. After pre-administration of the two data collection instruments, students were trained for twelve weeks on using cognitive approach strategies in English speaking activities as part of the ESP academic course. The activities of cognitive approach strategies are derived from https://positivepsychology.com/cognitive-development-activities/ (Appendix A).

Data Collection

Data are collected by using two different instruments. The first instrument is Cambridge Preliminary English Test (PET) for speaking skills (pp. 91-94) which was used for the purpose of a pretest and a posttest. The PET test was selected as it meets the criteria of test validity and reliability. The test consists of four parts and its final score is 100 marks with 25 marks allocated to each part. In part one, students were required to introduce themselves. In part two, they were asked to hold dialogues on given pictures. In part three, the students were asked to talk about colour photographs. In part four, they were asked to elaborate on the photographs used in part three by giving their opinions.

The second instrument of data collection is a cognitive strategies questionnaire of developing ESP students' speaking

skills. The 26-item questionnaire is adopted from different studies such as Goh (2007), Galaczi (2014), and Korzh (2017). The questionnaire is constructed based on five-point Likert scale. In other words, there are five possible responses for each of the questionnaire items. These responses are Strongly=1, Agree=2, Not Sure= 3, Strongly Disagree=4, and Disagree=5.

Data Analysis

Table 1 introduces the results of one way analysis of variance (ANOVA) of the students' performance in the pre-and post-administrations of the Cambridge Preliminary English Test (PET) for speaking skills. Table 1 indicates that the students' performance in the PET posttest significantly differed from their performance at the PET pretest as the P value was < 0.05. The finding emphasizes that cognitive approach strategies have a positive influence on the improvement of students' speaking skills. The students indicated better speaking skills performance in the PET posttest as they were more capable of introducing themselves, holding dialogues on the given pictures, talking about colour photographs, and elaborating on the previously introduced photographs. Therefore, the current study rejects the two null hypotheses. First, there are no significant differences in the students' performances the PET pre- and posttests of English speaking skills. Second, the cognitive approach strategies do not positively affect the students' improvement of English speaking skills. In other words, the students' low performance in the PET pretest is attributed to the fact that they had inadequate awareness of genitive approach strategies. Such strategies enabled them to improve their speaking skills and had a better performance in the PET posttest. The finding is consistent with those emphasized by Nassar (2019), Sreena and Ilankumaran (2019), Tesnim (2019), and Safitri Rafli and Dewanti (2020).

Table 1: ANOVA of the students' performances in the PET pre-and posttests of English Speaking Skills

	Sum of squares	Df	Means of squares	F	Sig.
Within pre-and post-administrations	471.306	58	361.523	57.416	.000
Between pre-and post-administrations	38.281	2	2.85		
Total	859.587	60			

Table 2 shows the mean scores of the students' opinions on the benefits of cognitive approach strategies in the pre-and post-administrations of the questionnaire. Table 2 shows that the students had higher mean scores of the strong disagreement, disagreement and not sure responses to the benefits of cognitive approach strategies in the pre-administration of the questionnaire. For examples, the students strongly disagreed and disagreed that cognitive strategies facilitate their use of grammar in the spoken English and learning of FL vocabulary; enable them to differentiate between different English sounds; sustain their ability to retrieve information from spoken English, introduce themselves orally, and hold English dialogues; help them use well-structured sentences and chunking in oral utterance and identify engineering terminologies.

The students' responses to the pre-questionnaire administration reflect their low awareness of the benefits of cognitive strategies. However, the higher mean scores of the students' strongly agreed and agreed responses to the post-questionnaire administration reflect their developed awareness of the benefits of cognitive strategies. Similarly, the finding emphasizes the rejection of the previously mentioned two null hypotheses. The findings are compatible with those reported by Wang (2019), Voskerchyan and Lepichova (2021), Genelza (2022), and Luangkrajang (2022).

Table 2: Mean scores of the cognitive strategies questionnaire of developing ESP students' speaking skills

Items	SA		A		Not Sure		SD		D	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
1.Cognitive strategies enhance my understanding of different rules of grammar	1.4	.6	2.4	4.5	3.7	0.9	2.3	1.4	2.5	1.2
2.Through cognitive strategies, I can easily use proper grammar in spoken communication	2.1	5.4	1.3	4.6	3.1	1.3	4.2	1.2	4.5	1.3
3.Cognitive strategies allows me to differentiate between various English sounds	1.3	5.5	2.2	4.9	3.8	0.5	5.2	1.3	4.3	1.1
4.Practicing of cognitive strategies facilitates learning FL vocabulary	2.1	.3	2.0	5.4	3.7	1.2	4.6	1.1	5.3	1.0
5.Due to cognitive strategies, I understand multiple meanings of words	2.2	5.7	2.3	5.5	4.0	1.3	5.3	1.0	4.8	1.2
6.cognitive strategies sustains my proper selection of words	2.1	5.4	1.3	4.9	4.4	1.5	4.3	1.4	4.8	1.2
7. Cognitive strategies helps me to understand spoken language	2.3	5.6	2.2	4.8	3.5	1.0	5.3	0.8	4.6	0.7
8. Cognitive strategies sustains my ability to retrieve information from the spoken language	1.4	5.5	1.4	4.9	4.2	0.3	4.6	1.2	5.2	1.1
9. Cognitive strategies reinforces my ability to converse in English	2.3	4.7	2.5	5.6	3.7	1.2	5.3	1.6	4.2	1.4

10. Cognitive strategies improves my ability to hold dialogues in English	2.1	4.8	2.4	5.3	4.5	1.3	4.6	1.2	5.7	1.3
11. Cognitive strategies sustain my ability to discuss English knowledge with my colleagues	2.0	5.8	2.4	4.6	4.7	1.5	4.8	1.3	5.7	1.5
12. Cognitive strategies helps me to orally produce well-structured English sentences	2.7	5.6	2.4	4.8	4.7	1.3	5.2	1.4	4.8	1.2
13.cognitive strategies help me to make English presentations in my field of study	1.4	5.8	1.2	4.6	4.3	1.1	4.7	1.2	5.3	1.0
14. Cognitive strategies enable me to have better self-introduction	2.4	5.1	2.6	5.4	4.4	1.5	5.3	1.4	4.3	1.2
15. Cognitive strategies improve my ability to orally express different agreement and/ or disagreement opinions	2.1	5.8	2.2	5.3	4.8	1.3	4.4	1.6	5.7	1.1
16. cognitive strategies sustain my speaking skills through accessing cues	1.7	5.8	4.6	1.3	5.6	1.2	5.8	1.2	4.9	1.3
17. Cognitive strategies help me to make association in spoken language	2.4	5.7	2.3	4.8	4.6	1.2	4.8	1.3	5.6	1.2
18. Cognitive strategies enable me to use chunking in oral communication	1.3	4.5	1.4	5.6	5.7	1.1	5.3	1.2	4.7	1.3
19. repeated activities help me to realize better pronunciation of English words	2.3	5.8	2.1	4.4	4.3	1.3	4.6	1.5	5.4	1.2

20. Cognitive strategies help me to orally answer the instructor's questions	2.5	4.7	2.7	5.2	5.6	1.2	5.4	1.3	4.7	1.1
21. Cognitive strategies enable me to paraphrase listening comprehension	2.4	4.3	2.8	5.7	5.8	1.3	4.5	1.4	5.6	1.2
22. Cognitive strategies help me to orally define engineering terminologies	2.5	5.8	2.3	4.9	4.3	0.4	4.7	1.1	5.8	1.0
23. Cognitive strategies reinforce my ability to orally solve problems	1.3	5.6	1.4	4.4	5.7	1.4	5.4	1.3	4.7	1.2
24. Cognitive strategies orally describe functions of engines	1.6	5.8	2.3	4.7	5.6	1.3	5.8	1.4	4.5	1.6
25. Cognitive strategies reinforce self-confidence in oral communication	2.1	5.8	2.2	4.9	4.7	1.5	4.3	1.2	5.7	1.1
26. Cognitive strategies develop self-expression in different contexts of communication	1.3	4.7	1.4	5.7	5.8	1.2	5.6	1.4	4.4	1.6
Total	51,3	140.1	56.3	127.6	119.2	30.3	126.3	33.5	127.7	31.1

Discussion, conclusion and implications

The current study came to the conclusion that the students had variance in their speaking skills performance in the Cambridge Preliminary English Test PET pre-and posttests. The significantly higher performance in the PET posttest is an indication of positive influence which cognitive approach strategies had on improving the students' speaking skills. Due the cognitive approach strategies, the students managed to develop their abilities of self-introduction, talking about photographs, holding dialogues, expressing their agreement and disagreement opinions, and identifying engineering

terminologies. Therefore, the present study rejects the two null hypotheses. First, the students do not significantly differed in the speaking skills performance in the PET pre-and posttests. Second, cognitive approach strategies do not have a positive influence on improving the students' English speaking skills. That is, the students' low performance in the PET pretest is accounted on the basis of their inadequate awareness of cognitive approach strategies. These strategies led to the improvement of students' speaking skills and hence their better performance in the PET posttest. The finding is consistent with those emphasized by Nassar (2019), Sreena and Ilankumaran (2019), Tesnim (2019), and Safitri Rafli and Dewanti (2020).

In addition, the students varied in their opinions on the benefits of cognitive approach strategies in the pre-and post-administrations of the questionnaire. In the pre-administration of the questionnaire, the students negatively viewed cognitive approach strategies as expressed in the higher mean scores of their strongly disagreed and disagreed responses. For example, the students doubted the benefits which cognitive strategies may have in developing their speaking skills. The students strongly disagreed, disagreed and were not sure that cognitive strategies can improve their use of grammar in the spoken English and learning of FL vocabulary; make them able to differentiate between different English sounds; reinforce their capability of retrieving information from spoken English, introducing themselves orally, and holding English dialogues; help them use well-structured sentences and chunking in oral utterance and identify engineering terminologies. The students' responses to the pre-questionnaire administration indicate low awareness of the benefits of cognitive strategies. On the contrary, the students had higher mean scores of the strongly agreed and agreed responses in the post-questionnaire administration. In other words, the students developed better awareness and understanding of the benefits of cognitive strategies. The finding similarly affirms the rejection of the two null hypotheses. The findings are consistent with those reported by

Wang (2019), Voskerchyan and Lepichova (2021), Genelza (2022), and Luangkrajang (2022).

The present study affirms that cognitive approach strategies yield positive results for developing the participants' speaking skills as evident in the improvement of the students' different features of spoken English. In other words, ESP instructors are encouraged to exploit the benefits of applying cognitive approach strategies to develop their students' speaking skills. These benefits include the improvement of using grammar, vocabulary, sentence structure in spoken English. Moreover, students become more confident in expressing their opinions, introducing themselves, distinguishing between English sounds, and using English in various contexts of oral communication. Thus, it is recommended to integrate the cognitive approach strategies with the teaching of FL speaking skills. This integration will yield successful results for providing better leaning environment for developing the students' speaking skills. Therefore, ESP instructors should pay more attention to the encouragement and training of their students to develop better understanding and awareness of cognitive approach strategies. The ESP instructors and curriculum planners should devise and select innovative activities which provide good opportunities for their students to practice and apply different cognitive strategies for the purpose of developing their speaking skills.

Recommendations

The present study introduced the following topics for future research:

1. The current study can be replicable using different samples of students at secondary schools.
2. The present study can be replicable investigating the effect of cognitive approach on the development of other language skills like reading, writing and listening.
3. A study can investigate the impact of employing digital learning tools to develop students' cognitive learning strategies.

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مجلة وادي النيل للدراسات والبحوث الإنسانية والاجتماعية والتربوية (مجلة علمية محكمة)

4. A study may explore the effect of cognitive learning on the students' learning styles in mastering the foreign language skills.

5. A study may examine the effect of applying cognitive approach strategies on time management of FL classes.

References

Abdul Halim, H., Mamat, R., & Abdul Rahim, N. (2017). Students; Perceptions of Learning Strategies in French and Japanese Language: A Quantitative Approach. *Scottish Journal of Arts. Social Sciences and Scientific Studies*, 45-54. https://revad.uvvg.ro/files/nr8/8.%20Hazlina%20Abdul%20Halim.pdf

Belkhir, Sadia. (2020). *Cognition and Language Learning*. Cambridge Scholars Publishing.

Cambridge Preliminary English Test for speaking skills, pp.91-94*: Examination papers for University of Cambridge ESOL Examinations* (2010). Cambridge: Cambridge University Press.

https://www.tedbodrum.k12.tr/dosya/hazirlikatlamasinavi/Cambridge%20Preliminary%20English%20Test%206_Book.pdf

Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (2012). *How to Design and Evaluate Reseacrh in Education (Eight)*. New York: The McGraw-Hill Companies.

Galaczi, E. D. (2014). Interactional competence across proficiency levels: How do learners manage interaction in paired speaking tests? *Applied Linguistics*, 35(5), 553–574. https://doi.org/10.1093/applin/amt017

Genelza, G. G. (2022). Soft Skills Communication and Cognitive Development of First-Year Purposive Communication Students. *Langua: Journal of Linguistics, Literature, and Language Education*, 5(2), 81-92, https://jurnal.stkipkieraha.ac.id/index.php/langua/

Goh, C. C. M. (2007). *Teaching Speaking in the Language Classroom* (W. A. Renandya & J. C. Richard, eds.). Singapore: SEAMEO Regional LAnguage Centre.

Korzh, T. N. (2017). Principles of foreign language professionally oriented teaching from the standpoint of the cognitive-communicative approach, *Questions of teaching methods at the university*, **20**, 37-45 https://cyberleninka.ru/article/n/printsipyinoyazychnogo-professionalno-orientirovannogo-obucheniya-s-pozitsiy-kognitivnokommunikativnogo-podhoda

Luangkrajang, M. S. (2022). Use of Mind-Mapping in Language Learning: A Cognitive Approach. *Theory and Practice in Language Studies,* 12, (8), pp. 1616-1621 DOI: https://doi.org/10.17507/tpls.1208.18

Malysheva, N. A. (2015). General didactic principles of communicative-cognitive teaching of foreign students-philologists the Russian language in the process of mastering linguistic features, *Innovative Science*, **12 (2)**, 237-239 https://cyberleninka.ru/article/n/obschedidakticheskie-printsipy kommunikativnokognitivnogo-obucheniya-inostrannyh-studentov-filologov-russkomu-yazyku-vprotsesse

Nassar, R. Y. (2019). The Effectiveness of Paired Reading Strategy in Developing EFL Vocabulary Learning among Primary

School Pupils. *Journal of Faculty of Education, Banha University*, 118 (2), 23-55.

Nasution, Dina Syarifah. (2020). Mind Mapping to Improve Students' Speaking Skill. *English Journal for Teaching and Learning*, 8(1), 1-12

Neo, S. L. P. (2017). Language Learning Strategies: A Study Among Spanish Students in the University of Malaya. *Journal of Modern Languages*. https://ejournal.um.edu.my/index.php/JML/article/view/37 23/1658

Nurieva, N. S. (2019). On the question of the communicative-cognitive approach in teaching foreign languages in a non-linguistic university. *Bulletin of the Russian State University for the Humanities. Series "Psychology. Pedagogy. Education"*. **3**, 32-40

https://cyberleninka.ru/article/n/k-voprosu-o-kommunikativno-kognitivnom-podhodev-obuchenii-inostrannym-yazykam-v-neyazykovom-vuze

Safitri, H., Rafli, Z. and Dewanti, R. (2020). Improving Students' Speaking Skills through Task-Based Learning: An Action Research at the English Department. *International Journal of Multicultural and Multireligious Understanding,* 7 (6). 88-99,
https://ijmmu.com/index.php/ijmmu/article/view/1647

Sreena, S. and Ilankumaran, M. (2019). Learning Strategies for Cognitive Development to Enhance the Speaking Skills in Second Language. *International Journal of Recent Technology and Engineering (IJRTE),* 8 (1), 1025-1050.

Tesnim, O. (2019). Oral Corrective Feedback and Its Impact on Learners' Speaking Skills: Tunisian EFL Students as a Case Study. International Journal of Language and Linguistics, 7 (3),138-149, http://www.sciencepublishinggroup.com/j/ijll

doi: 10.11648/j.ijll.20190703.15

Voskerchyan, O. and Lepichova, L. (2021). A communicative and cognitive approach to teaching monologue communication to foreign students in the educational and professional sphere. *E3S Web of Conferences* 273, 1-8, https://doi.org/10.1051/e3sconf/202127311004

Wang, Ling. (2019). Research on the Application of the Mind Map in English Grammar Teaching. *Theory and Practice in Language Studies*, 9(8), 990-995.