

Concept Mapping and Reading Comprehension: A Qualitative Exploration of EFL Teachers' Attitudes

Cartographie Conceptuelle et Compréhension de la Lecture: Une Exploration Qualitative des Attitudes des Enseignants d'Anglais (EFL)

Henouda Meriem*

ISILC Laboratory
University of Biskra (Algeria)

Dr. Hoadjli Ahmed Chaouki

ISILC Laboratory
University of Biskra (Algeria)

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Abstract

Reading comprehension is a complex cognitive activity. To improve reading and maximise material understanding in EFL contexts, students can employ an arsenal of comprehension strategies. The latter may include strategies such as prediction, summarisation, questioning, making inferences, and graphic organisers. One popular graphic organiser is the use of Novakian concept mapping (henceforth CM). To this end, the current inquiry attempts to explore the reading course EFL teachers' perceptions and attitudes towards the use of CM to reinforce students' reading comprehension. To achieve this purpose, and following the qualitative research approach, a case study design was adopted. Using a semi-structured interview, data were collected from 4 teachers who originally constituted the sample of this study. In this respect, the participants volunteered to participate in the study, thereby accepting to be interviewed and to be recorded. Data analysis was accomplished by employing Braun & Clarke's (2006) thematic approach of data analysis. Ultimately, the study's results revealed that CM was not known to the participants; therefore, it was infrequently used

in reading classrooms. Moreover, it was also found that the interviewed teachers appeared to have positive attitudes towards the application of this strategy to improve students' reading achievement. Therefore, such findings supported the initially formulated hypotheses, thereby yielding positive results.

Keywords:

Reading comprehension; Comprehension strategies; Graphicorganisers; Concept mapping; EFL teachers.

Resumé

La compréhension en lecture est une activité cognitive complexe. Pour améliorer la lecture et maximiser la compréhension matérielle dans les contextes EFL, les élèves peuvent utiliser un arsenal de stratégies de compréhension. Ces dernières peuvent inclure des stratégies telles que la prédiction, le résumé, le questionnement, les inférences et les organisateurs graphiques. Un organisateur graphique populaire est l'utilisation de la cartographie conceptuelle de Novakian (ci-après CM). À cette fin, l'enquête actuelle tente d'explorer les perceptions et les attitudes des enseignants d'EFL du cours de lecture à l'égard de l'utilisation de la CM pour renforcer la compréhension en lecture des élèves. Pour atteindre cet objectif, et suivant l'approche de recherche qualitative, un modèle d'étude de cas a été adopté. À l'aide d'un entretien semi-structuré, des données ont été recueillies auprès de 4 enseignants qui constituaient à l'origine l'échantillon de cette étude. A cet égard, les participants se sont portés volontaires pour participer à l'étude, acceptant ainsi d'être interviewés et d'être enregistrés. L'analyse des données a été réalisée en utilisant l'approche thématique d'analyse des données de Braun & Clarke (2006). En fin de compte, les résultats de l'étude ont révélé que le CM n'était pas connu des participants ; par conséquent, il était rarement utilisé dans les salles de lecture. De plus, il a également été constaté que les enseignants interrogés semblaient avoir des

attitudes positives à l'égard de l'application de cette stratégie pour améliorer les résultats en lecture des élèves. Par conséquent, de telles découvertes ont soutenu les hypothèses initialement formulées, donnant ainsi des résultats positifs.

Mots clés

Compréhension écrite; Stratégies de compréhension; Organismes visuels; Cartographie conceptuelle; Professeurs d'EFL.

*Corresponding Author:

1. INTRODUCTION

The English language has a long historical development. Its position has shifted dramatically to preoccupy a universally prime status, thereby becoming the most widely used means for communication worldwide. Substantially, its role in today's educational settings has increasingly been noticeable. Therefore, students need to build a strong foundation of the four language skills. In this context, reading, which is one of these skills, is mostly needed for building proficient language learners. Rather more often, reading can be regarded as a daunting task because many students are not able to effectively comprehend the text and answer its questions.

Reading comprehension, which is the ultimate objective of the reading act, is a highly ordered activity. The fact that it is more complex than what people think it is has invigorated scholars to propose a set of reading strategies that potentially help achieve a good understanding of the reading material. These strategies can work on engaging readers in the reading task, therefore, allowing them to think more carefully about what they read. It is worth noting that such strategies as prediction, summarisation, questioning, making inferences, and graphic organisers might be utilitarian and practical. This is because of their application to remedy reading comprehension struggles, which

may vary from problems concerning decoding to issues regarding the semantic or pragmatic aspects of the language.

The utilisation of active reading strategies when approaching reading signifies skilled readers. It is for this reason that such strategies should be an integral part of reading instruction. In this regard, effective teachers are those who not only master the content knowledge and provide regular feedback but also introduce students to relevant instructional meta-cognitive strategies. One of these strategies is known as concept mapping (CM).

2. Literature Review

As a receptive skill, reading remains a key component of general knowledge and a cornerstone to competency in the target language. This makes it a demanding and laborious skill students ought to develop. Reading comprehension is viewed as the active involvement of the reader in the text to construct meaning and build understanding (Al-Faki & Siddiek, 2013; Marina, Acosta, & Ferri, 2010). Ultimately, it requires higher-ordered cognitive skills ranging from the ability of analysis and synthesis to the processes of negotiating meanings and constructing new ones. In order to maximise comprehension and translate print to meaning, a substantial body of literature elucidates that teachers should invent and introduce certain active methodologies and facilities to students to repair their lack of understanding.

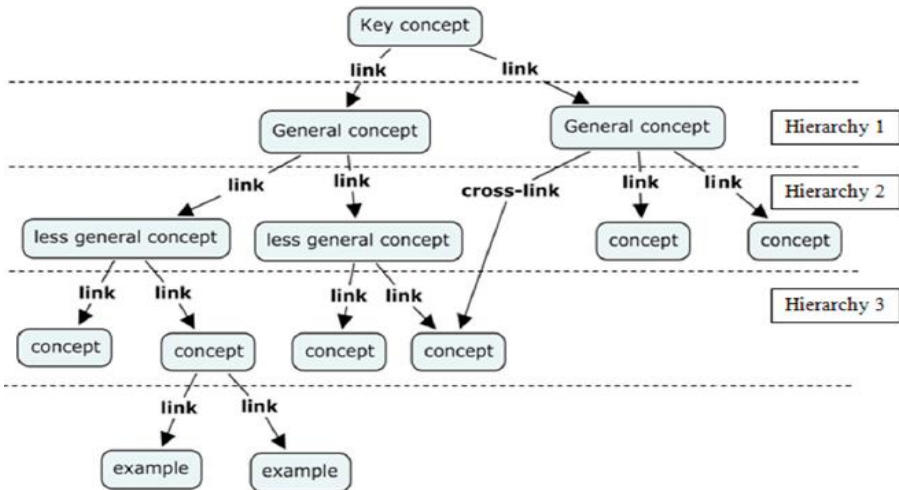
Pearson and Cervetti (2013) report that effective comprehension instruction should incorporate comprehension strategy instruction. Following this, several studies provided valuable information about the utility of reading strategies. One of the highly cited strategies is graphic organisers, which are proved helpful in promoting organisational skills alongside language skills (Kansizoglu, 2017; Lestari & Wahyuni, 2018). Importantly, Kansizoglu (2017) illustrates that the most popular graphic organisers are K-W-L schema,

story map, linear system, story pyramid, tree diagram, Venn diagram, mind map, semantics map, and concept map.

2.1 Concept Mapping as a Visual Organiser

CM originated in the work of Joseph Donald Novak in 1972 at Cornell University. It has its origins in the constructivist view of learning, which conceives that learners are active participants in meaning generation and knowledge construction (Novak & Cañas, 2007). This tool represents a diagram that visually displays different meaningful relationships among a set of connected concepts/ideas belonging to the same topic, lesson, or unit. Figure 1 displays a model of a CM. It is principally composed of (1) nodes in the form of boxes or circles (to manifest the main concept, idea, object, or event), (2) links (to interconnect nodes), and (3) linking words (to specify the kind of relationships among concepts).

Figure 1. A Model of a CM



Reprinted from “computer-based concept mapping as a method for enhancing the effectiveness of concept learning in technology-enhanced learning”, by G. Aşıksoy, 2019, *Sustainability*, 11, p. 2.

Ultimately, depending on the complexity of the topic, CM is manifested in an informative network with one or multiple hierarchies. In this regard, a key element in this graphic organiser is its hierarchical structure. To clarify, it starts with the most general concept and branches out into smaller ideas. This tool gained huge popularity in fields as diverse as science, medicine, computing, and chemistry (Ullah, 2020). However, it gained wide acknowledgement as a facilitative tool to improve students’ language abilities such as writing, speaking, vocabulary, and reading.

2.2 Concept Mapping and Reading Comprehension Ability

When created correctly and thoroughly, CM may conduce to high levels of performance and great achievement since it guides students to organise ideas and plan complex structures. Erdoğan (2016) expounds on this idea by adding the fact that the development of students’ active learning, participation, and engagement can also be attributed to the efficacy of this tool. Novak and Cañas (2007) state, “many learners and teachers are surprised to see how this simple tool facilitates meaningful learning and the creation of powerful knowledge frameworks” (p. 32). Markedly, this diagram may work on extending students’ involvement in the process of actively constructing knowledge and building new learning (Novak & Cañas, 2006).

Since it is based on Ausubel’s theory of meaningful learning, CM is perceived as a good way for activating prior knowledge and pre-existing structures, which help add meaning to the print while reading (Kinchin, Hay, & Adams, 2000; Novak & Cañas, 2007). It was also noted that CM fosters the act of reading comprehension by drawing salutary outcomes with regard to the discovery of the main themes and the grasping of the text’s big picture. Likewise, it was conducive to the remembrance of the text’s main and sub-ideas and the linkage of different thoughts.

The utility of the CM strategy is best expressed in Beydarani's (2015) work, in which the aim was to empirically examine the usefulness of CM on Iranian EFL learners' reading comprehension. The sample of the study consisted of a total number of 52 learners assigned into four groups. While two groups received persuasive texts, the two other groups received descriptive texts. Additionally, only the experimental groups received the CM treatment. Typically, it was revealed that the experimental groups outperformed the two control groups in reading comprehension while also the learners who were exposed to persuasive texts outperformed those who received descriptive texts. These findings were also corroborated by the results of Tabatabaei and Khalili (2014), as well as Tajeddin and Soudabeh (2016).

Despite the sheer volume of literature that agrees on the effectiveness of graphic organisers, a few research studies conducted in Algeria attempted to examine CM in relation to reading comprehension. Specifically, in Biskra University, none of the previously conducted research studies endeavoured to find out about the teachers' views regarding the efficacy of CM in enhancing students' reading comprehension. In this respect, the current study is an exploration of the attitudes of EFL teachers of reading towards the utilisation of CM to promote and improve students' reading comprehension.

3. Research Questions

To gain an insight and understanding of the studied phenomenon and to better reach the aim stated earlier, the current paper strives to answer the following research questions:

Q1. In what way is the CM reading strategy used in reading classrooms?

Q2. What are the reading course EFL teachers' attitudes towards the use of the CM strategy that may reinforce students' reading comprehension?

4. Research Hypotheses

Based on the abovementioned research questions, the following research hypotheses were proposed:

RH1: The CM strategy may not be frequently used in reading classrooms.

RH2: The reading course EFL teachers may have positive attitudes vis-à-vis the implementation of CM in enhancing students' comprehension ability.

5. Methodology

The present section seeks to specify the major methodological aspects, which constitute the foundation for this research study. These components mainly comprise the research approach, design, data collection methods, data analysis procedures, and sampling technique.

5.1 Approach

Reflecting on the nature of the study, the present inquiry operates under the qualitative approach, which strives to provide an in-depth understanding of the social behaviour (research problem). Fundamentally, this conveys the importance of focusing attention on exploring the attitudes of the reading course EFL teachers towards the use of CM to reinforce reading comprehension.

5.2 Design

The choice of the research design goes in congruence with the nature of the study. Therefore, the qualitative research design was adopted. In specific terms, and to provide a

comprehensive analysis of the research problem, a case study design was used. To clarify, Harrison, Birks, Franklin, and Mills (2017) maintain that through a case study, a limited number of units will be investigated within their natural real-life context.

5.3 Participants and Context

Substantially, all EFL instructors of the reading course (four teachers) at Biskra University constituted the population of this investigation. They volunteered to participate in the study. Therefore, they accepted to be interviewed and recorded. The participants were male and female teachers (two males and two females) whose ages ranged from 28 to 43. Typically, all of them had at least three years of experience.

5.4 Instrument(s)

To achieve the goals of the study that focused, to a large degree, on exploring teachers' attitudes and perceptions, a semi-structured interview was used as a data-gathering instrument. The major aim of the interview was to achieve a deep understanding of the studied phenomenon, allowing for an extendable conversation between the researcher and the participants. This tool intended to address all the teachers in charge of the reading course. Therefore, four face-to-face meetings were arranged to interview the four EFL instructors. Striving to reduce vagueness and redundancy that may emanate from the interview items, the interview guide was emailed as a word document to two teachers. They were deliberately selected to validate it since one is supposed to be an experienced teacher and the other is in charge of the reading course. Both teachers reported no major changes.

5.5 Data Collection Procedures

Based on ethical considerations and research requirements, the current investigation had to be confirmed by means of signed informed consent. The latter addressed not only the head of the section but also the head of the department and the participants. The letters briefly explained (a) the topic, (b) the purpose of the study, and (c) guaranteed rights (anonymity and privacy). Chiefly, the participants were set free to choose the appropriate time to be interviewed. Majorly, the researchers digitally recorded them to facilitate data transcription.

5.6 Data Analysis

The obtained data were analysed by employing Braun & Clarke's (2006) thematic approach of data analysis. This approach is a specified and structured process through which the mass of collected data is organised and reduced into manageable chunks. It concentrates on finding, describing, and analysing implicit and explicit ideas (themes) within the data. **Practically**, in this study, large bodies of data were summarised into retrievable meaning-based patterns (themes).The researchers followed the six-step procedure of thematic analysis including familiarisation, coding, theme generation, theme reviewing, theme definition, and writing the report. In the data reduction stage, the collected data were summarised and assigned codes. Based on the purpose of the study, the obtained codes were revised several times and collated into themes that may help answer the research questions.

6. Results

Following the elucidation of the study's major methodological aspects, the current section intends to report the findings of the present investigation. This mainly encompasses textual data collected from the teachers' interview.

On the questions:

'In what way is the CM reading strategy used in reading classrooms?'

'What are the reading course EFL teachers' attitudes towards the use of the CM strategy that may reinforce students' reading comprehension?'

Since it has long been established that the teacher's profile has a cumulative effect on students' learning outcomes, the first item of the interview sought to determine who the interviewees are in terms of gender, age, degree, and work experience. The results are portrayed in Table 1.

Table 1. Interviewed Teachers' Related Information

Interviewed teachers	Gender	Age	Degree	Work experience
Teacher A	Female	32	Doctor	5
Teacher B	Female	43	Magister	12
Teacher C	Male	35	Magister	6
Teacher D	Male	28	Master	3
Total Number	4 Teachers			

It appears that the four teachers do not hold the same degree as one has a doctorate, two have a magister degree, and only one has a master's degree. Besides, they have three years or more of teaching experience. Clearly put, the interviewees have been teaching English at Biskra University for a period that ranges from three to 12 years. Chiefly, this variation is beneficial to collect and attain wealth and varied data that may likely help us answer the research questions.

It was also essential, through the second item, to realise how teachers generally regard or rather find teaching the course of reading. As suggested by their answers, the four teachers consider the process of teaching reading challenging. The main reason for this, they assume, is learner differences. To exemplify, some say:

“Choosing one reading material does not all the time suit the interest of individual students. To settle the issue down, I often ask them to suggest some topics for future readings, but still, they cannot agree on one”.

“Good students seem to get bored easily when the text does not meet their expectations. Consider the other way around, average or low achievers usually give up completely if they find the text is rather difficult”.

That is, most EFL classrooms are heterogeneous, incorporating students with varied learning styles, strategies, experiences, and motivation levels. This makes the selection of the reading texts with a relatively suitable level of difficulty an overwhelming task.

The interview also strove to uncover the ways of teaching the reading skill. Put differently, this item was particularly concerned with the practices, plan of action, and methods adopted when teaching and improving students’ reading abilities. The answers of the interview demonstrate that the four teachers embrace diverse plans, yet share a common ground. For them, providing a theoretical lesson entailing the definitions of reading and its types is the basis for the reading course. In essence, the common practice among teachers is to give students some reading materials, ask them to answer the follow-up questions, and provide the correction afterward. To exemplify, some teachers report the following:

“I supply students with a theoretical framework for reading. I raise their attention to the benefits of reading. I provide texts and ask them to answer the reading comprehension questions, and then I provide the necessary correction.”

“Based on a given purpose and students’ interests, I select a text. They next read and answer the questions before being introduced to the correct forms.”

“I teach some theoretical concepts. I allow the students to practice reading passages and answer their questions. We finally correct the answers together.”

Agreeably, this course of action often pertains to the course of reading; nevertheless, it does not usually make a rewarding reading experience. Therefore, the teachers were further asked to elaborate on the kind of support provided to students in order to better comprehend reading materials. The answers indicate that their assistance centres mainly on vocabulary extension and strategy use. They appeared to encourage students to use English-English dictionaries, guessing, summarisation, inference, skimming, scanning, and paraphrasing. Substantially, and as an exception, one teacher seems to guide his students to take advantage of graphic organisers, particularly CM. Essentially, his answer was of prime importance since what he employs in the classroom is the subject under investigation. The teacher notifies:

“I use CM in my reading course because it helps students to understand meticulous features about the text we generally deal with.”

The subsequent item of the interview probed into the primary reasons that hinder teachers from encouraging students to use CM to mitigate reading difficulties. The analysis of their answers specifies two major themes, namely ‘time restriction’ and ‘unfamiliarity with the strategy’. Some teachers assert:

“I have no idea about CM. Also, time is not enough to use this strategy.”

“I did not encourage my students to use it because I did not know about it myself. I also see that time limitation as another reason.”

They detailed that this diagram may require much class time for it to be constructed, organised, and revised. Teacher D, however, maintains that he uses it regularly while delivering new content. On that point, he adds:

“CM allows the teacher to categorise different patterns, such as personalities, events, plot, protagonists, antagonists, etc. This strategy helps learners to draw a clear image of the text.”

What emerges from his response is the fact that CM is a good way to visualise not only the key and sub-ideas of the text but also the meaningful relationships existing among them. Importantly, and although most of the interviewed teachers are not acquainted with the CM strategy, they affirm:

“CM seems to be a perfect strategy that should be integrated into reading curriculum and courses. Since it consolidates knowledge during the reading task, it can help control reading difficulties”.

“Despite my limited knowledge about this diagram, I can see that this tool may likely be a resourceful reading strategy. It may help to link different parts of the text together, therefore, mitigating different reading obstacles”.

“I will think about it in my future lessons since it keeps students attentive in the reading practice.”

“Surely, this strategy helps students especially those with reading difficulties to understand, remember, and reflect on the text”.

With reference to their answers, the informants seem to have positive attitudes towards the use of CM in reinforcing students’ reading comprehension and reducing reading difficulties. Clearly, they viewed it may likely be a resourceful strategy, especially in increasing attention, linking the different parts of the text, and maintaining focus.

7. Discussion

This research project was principally undertaken to achieve a major objective. It sought to check the potential use of CM in reading classrooms. It then strove to determine the attitudes and perceptions of the reading course EFL teachers towards the use of this strategy as a means of enhancing reading comprehension and reducing reading struggles. Therefore, the present part includes a summary of the findings along with a discussion and conclusions.

As a data collection tool, the study used the interview, which addressed all the teachers who were originally in charge of the reading course. The interview was the most suitable choice for it allows the researcher to better seek clarification and further details. The four teachers believed that teaching the course of reading is challenging. This is due to the fact that most EFL classrooms are mixed-ability and the reading skill is a complex act, the success of which requires proficiency in several components. This in turn makes the unification and selection of reading materials, methods, and activities even more arduous.

As revealed earlier, concerning their ways of teaching reading, the four teachers discerned the adoption of a two-level approach. The latter starts theoretically by introducing students to the conceptual basis related to reading (definitions, types, purposes, models, stages, and benefits) and ends practically by engaging students in different reading tasks. Building good reading skills and assisting learners, especially struggling readers, to better comprehend reading materials is one major aim of effective reading instruction. Markedly, the interviewed teachers did not seem to virtually employ the same arsenal of instructional support. Only one of them truly appeared to implement graphic organisers, namely CM in his classroom. This is a good reflection that the CM reading strategy is infrequently used in reading classrooms, therefore, answering the first research question and accepting the developed hypothesis.

The analysis of the interview pinpoints some reasons that hinder teachers from encouraging students to use CM as a supplemental reading strategy. One factor was the unfamiliarity with CM. This leads to the realisation that those teachers did not come across CM through their readings. Nor did they have the opportunity, throughout their career, to be introduced to it. Chiefly, time restriction turned out to be another factor the informants portrayed.

It was accordingly clear then that those teachers view that visual organisers require a great deal of time and may detract from the time originally dedicated to the lesson explanation, reflection, and discussion. In addition, one consideration that should be noted is that the interviewees did not highlight overcrowded classrooms as a factor that may hinder teachers from encouraging students to use CM. Briefly, this is a genuine reflection that the participants regard graphic organisers workable even for classes with a huge number of students.

Chiefly, although most informants did not appear to be informed of and conversant with this visual diagram (teacher C revealed his familiarity with CM), all of them emerged to have positive attitudes vis-à-vis its utilisation in reinforcing students' reading comprehension. It was seemingly necessary, for them, to give prominence to the introduction of such a strategy in the reading courses. This may be especially true since the efficacy and effectiveness of CM on reading comprehension has been captured and proved in several empirical research studies (Beydarani, 2015; Davaribina & Asl, 2017; Liu, Chen, & Chang, 2010; Tabatabaei & Khalili, 2014; Tajeddin & Soudabeh, 2016). Therefore, the second formulated hypothesis is also accepted.

8. CONCLUSION

Reading comprehension is an indispensable and preeminent process through which a deep understanding of the subject can be reached. To facilitate this activity for students, CM was proposed as a reading strategy. In this respect, the current study was conducted as an attempt to unravel whether CM is commonly used in reading classrooms. It also served to gain insights into the reading course EFL teachers' attitudes towards the use of the CM strategy to reinforce students' reading comprehension. The data obtained from the interview were first summarised and displayed before they were analysed and discussed. Chiefly, future CM investigations can adopt quantitative procedures to learn more about the efficacy and utility of CM.

9. Recommendations

Inspired by the study results, the researchers make the following abridged list of recommendations that may help improve reading comprehension and implement the CM strategy.

- Diagnosing and specifying students' reading comprehension difficulties at an early stage is rudimentary to provide a suitable remedy.
- To identify comprehension hindrances, teachers may rely on some procedures such as collective and one-to-one regular meetings, classroom observations, questionnaires, classroom discussions, and diagnostic tests.
- Concept mapping can best be introduced through explicit instruction and step-by-step explanations. This can be realised by defining CM, presenting its characteristics, modelling the steps of its creation, and then allowing students to practice it.
- The concept mapping strategy is at the disposal of teachers who may likely employ it as an individual activity, small group activity, or as a whole class activity.

- Enticing students to employ the concept mapping strategy in comprehension activities and the reading assigned for homework gives them much-needed time for practicing this tool.
- Students have at their disposal different computer applications and software types such as CmapTools, EdrawMax, and Lucidchart that allow them to easily construct, export, and share concept maps.

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