

Artículo de investigación

The effectiveness of data charts strategies on the achievement of Iraqi EFL students in writing

La efectividad de las estrategias de gráficos de datos sobre el logro de los estudiantes de inglés como lengua extranjera

A eficácia das estratégias de gráficos de dados sobre a conquista de estudantes de EFL iraquianos por escrito

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Abstract

The aim of research was to identify finding the effectiveness of the data charts on the achievement of Iraqi EFL students in writing. It also intends to provide awareness to the teachers on the merits of Data Chart Strategies. This was an analytical-logical research that was used to collect information from a questionnaire. The researcher was of the opinion that visual prompts would help to make writing easier. Hence data chart or visual data representations were used in this research. The study showed that the performance of pupils who used data charts was far better than those who were not provided with data charts. The pupils had to struggle less with the writing assignment and they were precise in their work.

Keywords: Data charts, writing, creativity, cultural depiction, active skill

Resumen

El objetivo de la investigación fue identificar por escrito la efectividad de los cuadros de datos sobre el logro de los estudiantes irlandeses de EFL. También tiene la intención de sensibilizar a los maestros sobre los méritos de las Estrategias de Gráficos de Datos. Esta fue una investigación analítico-lógica que se utilizó para recopilar información de un cuestionario. El investigador opinó que las indicaciones visuales ayudarían a facilitar la escritura. Por lo tanto, se utilizaron representaciones de datos visuales o gráficos en esta investigación. El estudio demostró que el rendimiento de los alumnos que utilizaron tablas de datos fue mucho mejor que a los que no se les proporcionaron tablas de datos. Los alumnos tuvieron que luchar menos con la tarea de escritura y fueron precisos en su trabajo.

Palabras claves: tablas de datos, escritura, creatividad, representación cultural, habilidad activa.

Resumo

O objetivo da pesquisa foi identificar, por escrito, a eficácia dos gráficos de dados sobre a conquista de estudantes de EFL iraquianos. Também pretende conscientizar os professores sobre os méritos das Estratégias de Data Chart. Esta foi uma pesquisa analítica-lógica que foi usada para coletar informações de um questionário. O pesquisador era da opinião de que os avisos visuais ajudariam a tornar a escrita mais fácil. Daí gráfico de dados ou representações de dados visuais foram utilizados nesta pesquisa. O estudo mostrou que o desempenho dos alunos que usaram gráficos de dados foi muito melhor do que aqueles que não foram fornecidos com gráficos de dados. Os alunos tiveram que lutar menos com a tarefa de escrever e eles eram precisos em seu trabalho.

Palavras-chave: Cartas de dados, escrita, criatividade, representação cultural, habilidade ativa

Introduction

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Writing is a very crucial task. It involves the understanding of a variety of concepts and strategies along with a person's own creativity. One of which is learning data chart strategies. They play a pivotal role in the higher level of writing, involving proper analysis of the subject. This study is regarding analyzing the effects of learning data charts strategies on Iraqi English as Foreign Language students on their achievements in writing. A precise questionnaire was sent to two groups of Iraqi EFL students (A) who had the knowledge of data chart strategies and those that didn't have any knowledge of data chart strategies (B). Summing it up all, my research said that, as these students are new to the language they are creative but expression through language is a serious barrier. Hence, duly working with both, creativity and concepts of writing, they can create excellent pieces of work. I hope this module helps both academic teachers and students to involve data chart strategies in their academic curriculum.

- The Problem of the Study. English has become indispensable in the present scenario where most of the jobs demand a good knowledge of English. It is the most prominent language in the fields of science, computers, tourism, business and education. Apart from this, once a person is well-acquainted with English, he will feel more confident. To satisfy all these purposes, English has been taught as a second language in most of the universities around the world (Kurmanali et al, 2018).

People learn English in a variety of ways and in the traditional way of teaching, the students are not well-equipped with the required skills in English. They are not able to grasp the concepts easily, so it is also difficult for them to recollect those concepts later. Writing a new language also demands a certain level of creativity (Bicer et al, 2018), so the researcher had come up with a strategy for enhancing the writing skills and it is nothing but the use of Data charts and a question arises: How does it help?

- The Aim of the study. The present study aims at finding the effectiveness of the data charts on the achievement of Iraqi EFL students in writing, it also intends to provide awareness to the teachers on the merits of Data Chart Strategies.

- Research Hypothesis. In this research paper, the researcher wanted to find the answer to the questions such as How to make writing to be creative for the students who are learning English as a foreign language? What are the strategies to be adopted to achieve this purpose?

While finding solutions to these questions, the following hypotheses were derived

1. Using the data charts prove to be an effective strategy in improving the writing of the students
2. There is a considerable difference between the writing practice of the students who know the data charts and those students who do not know it.
3. The students using the data chart strategy are struggling less than those who do not know it.

Theoretical background

- Data Charts. Data charts serve as a crutch for helping students organize their writing (McKenzie, 1979). The chart is the pictorial expression of the data and imaging is a strategy that encourages students to create an image in their minds to support the understanding of concepts (Chamot & O'Malley, 1994). Here, there is a usage of a number of symbols, the bars as used in a bar chart while lines are used in the line chart and the most interesting type of data chart is the pie chart where the slices are utilized for this purpose, also the pie charts are the commonly used data chart in the newspaper to make the understanding of the information easier.

The charts are generally used to represent the numeric data or some sort of structure and this information is presented based on a certain format in an organized manner. The maps which are provided with much extra information can be considered as the particular type of chart and the charts are used even for recording the music notation or for the album popularity.

Uses of the data charts:

- It helps in the clear representation of large quantities of data and the relationship between the different elements of the data
- The concept of data chart has its application in a variety of fields.
- The most important advantage in the usage of the data chart is that one can read the data so quickly than reading the same data in the paragraphs.
- The data charts are also famous for the ease with which we can prepare the data. It can be prepared manually with the hand or by using any computer programs. A number of software programs are available to make our jobs less tedious

- The data charts can be prepared in the different forms based on our needs and also based on the type of the information to be represented.

Types of data charts:

The most commonly used types of charts are:

1. Line charts: These charts were introduced by Francis Hauksbee, Nicolaus Samuel Cruquius, Johann Heinrich Lambert and William Playfair. It is given in two-dimensional forms in which the data are first mentioned in a scattered way and the relations are understood by connecting the dots in the plot.
2. Bar charts: In these types of charts, the dependent and independent variables are given in the y-axis and x-axis respectively. The information is given in the form of bars which are drawn according to the values they represent and these bars can be either in the horizontal form or vertical form and this was first introduced by William Playfair and Nicole Oresme.
3. Histogram: This was first introduced by Karl Pearson and it is in the form of rectangles in which each rectangle has an area equal to the frequency of the observation.
4. Pie chart: This was invented by William Playfair. This is mainly used to represent the data which is in the form of the percentage so, a circle is divided into different parts based on the value of the percentage.

There are a number of other charts like tree chart, organizational chart, and flowchart, these kinds of charts are used to break down the complex information into simpler forms and also can be used to bring the conceptual clarity even in learning Grammar.

- The Basic structure of the data charts. The charts should have a title which should be given in the top, it should have a clear description of what that particular chart say about, there will be two axes: X axis and Y axis. The scale is mentioned clearly for both and the units are also mentioned along-side, so the dependent variables and the independent variables are given in the x-axis and the y-axis respectively.

The data can be represented in the form of dots as given in the line charts or in different shapes. The writers can use their creativity to make it more interesting, For example, different colours can be used in the bars to make it look attractive

and interesting. The utilization of these kinds of techniques will make the students shed their fears regarding the learning of the language, it is the responsibility of teachers to provide whatever supports are necessary ... using approaches and materials the add context to the language – props, gestures, pictures – all contribute to the child’s acquisition and eventually to the production of language” (Herrell & Jordan, 2005).

- Writing. “Writing makes no noise, except groans, and it can be done everywhere, and it is done alone.”

Through your writing, you can connect with the global communities, in this way it helps in the cultural exchanges and this helps increased cooperation among the people.

Now, it has become a must to develop skills in writing and this is so true particularly when it comes to English, so the writing skills are taught to the student right from the childhood. In Iraqi Universities, there are some courses which include English as the foreign language and you might want to write a proposal or a report, so the content of any topic will be solely based on the interest and the opinion of the writer. A person can be considered as the good writer if he is able to put down his thoughts properly.

Hence, writing is not a mere activity but it is an art as portrayed in the following the current strategies that were applied to EFL student’s achievement in writing:

- They made sure that the students are having an increased exposure to English movies and music, the students were shown movies and shows and were asked to write on them after they finished and this developed their desire for studying EFL and be more indulged in writing, this also helped them in learning new words.
- Some hours in school were made compulsory when students had to only interact in English. Initially, the students were shy but they started participating actively in a gradual manner, They were shown plays and they had to discuss it in pairs and this increased their mutual understanding as well and they enjoyed it.
- Excursions were arranged, and interactive tasks were given in which they had to write on visual things in their surroundings, this greatly improved their creativity. “Visual scaffolding is an approach in which the language used in instruction is made more understandable by the display of drawings

or photographs...". (Herrell & Jordan, 2005).

- English was made the language of daily college prayers on days of the week, as this was compulsory, the continuous exposure to the English language gave them a good practice. "Modeled talk, (Herrell, 1999), the concurrent verbal explanation and physical demonstrations of directions and concepts is one of the simplest and most powerful strategies for use with English language learners."

- **English as a foreign language (EFL).** Why is it necessary in the present world that we should learn a new skill of knowing English?

There are a number of reasons which support the learning of English as a foreign language, It helps in instilling a sense of curiosity within us and makes us learn more and It offers a wide range of opportunities for us and it also helps in increasing the learning capacity of the brain. It makes you a social being where you will get the capabilities to interact with a lot of people, In this way, you will be getting to know a number of other cultures and your views will get broadened and You will also get acquainted with a lot of information.

Foreign language theories have come a long way since the old days of rote learning. An understanding of foreign language acquisition can improve the ability of linguistically different students of different culture to live in harmony and It prevents any person of any region to become alienated from others in the world and even in the classroom.

The foreign languages cannot be learned in a passive way through rote learning, It needs a certain level of understanding to learn it well, so writing will help the students for this in a big way.

The main purpose of developing their interest in writing English for students is to be able to communicate and express their ideas effectively in that language. For students, it proves so advantageous that it can be considered almost essential and EFL students can become globally interactive through the learning of this language. For students, the first and the most important effect a new language may have is - access to newer information in a more elaborate way, so words and their meanings go a long way from the expression of meaningful information in shaping how a society thinks! The meaning of words used today has so much potential.

Etymology is the study of the true meaning of words, to learn what the word created for is the purpose of etymology and words are created with a purpose to express meaning about something. Words symbols are created to reflect and represent aspects of being, or something we imagine in our minds. Hence, many interesting ways should be devised to make writing an interesting and creative process.

Research Tools

The most important tool used in this current research is a planned questionnaire to know how far the data chart strategies are useful in making the study of English more comprehensive and creative. The questions asked were very simple so that the students were able to comprehend it easily and answer it, all those information needed for the research purposes were covered in the questions asked.

Apart from the questionnaire, a written test was also conducted to see the difference in the performance of the students of the students who know the data charts strategies and those who are not aware of it.

- **Writing Performance Test.** To gauge the participant's competence, a writing test was conducted in which participants were provided with the particular topic and asked to write an essay on it to know whether they have understood the topic concerned. The given topic is so simple so that all the students will be able to write something on it and the scoring is done according to an analytical scheme designed by Larkin (2007). In this scheme, the writing performance is evaluated according to five aspects, these are; content, organization, grammar, vocabulary.

- **Significance of the research.** The research is very important as it would help the students in understanding many complicated topics. It helps in devising a new simple strategy which helps the students in a greater way and the students who have participated in this research are the EFL students of the English department and college of education for humanities from the Tikrit University. Reading the concepts through the pictorial representation of the data chart would help in developing the interesting of the students to study the subjects which they hate studying before and it has a significant impact on their writing skills too.

- **Research population and sample.** The present research consists of the EFL students which were selected indiscriminately from the two

departments. These students are the Iraqi students from Tikrit University for the academic year 2017-2018 and they are from the two departments: the department of English and the college of education for humanities. The selected students are divided into two groups: one is the experimental group and the other is the control group. Each group consists of equal students, The experimental group contains the students who are trained to use data charts to study various concepts and the control group consists of students who are taught the concepts using the traditional methods. The students who are involved in the research are chosen from the same university and The selection of the students is done like this because of the following reasons:

- The students from the same University will have the same sources of study and they will be positioned equally regarding the availability of education, teachers and everything.
- Since the students are from the same location, they have a better cooperation compared to the students from the different background, This is mainly because they think alike.
- They also have a similar knowledge of English so that there will be a certain level of parity in evaluating them.
- The researcher got acquainted with the teachers from the university before starting the research so that the research was carried out well without any hindrance.

A pre-test was conducted to assess the level of the students before giving the group A the required training on the data charts, In this pre-test, all the students were getting almost equal marks and there was not any major difference among the 120 students regarding the understanding of the concepts.

This made clear that the average knowledge of English amongst Iraqi EFL students was distributed equally and The equalization of both groups is checked according to the age, writing ability, performance in the writing pre-test and use of the writing strategies in the pre-administration.

Then the researcher divided the students into two groups of 60 each. Those two groups are given the names as the group A and group B, The group A consists of students belonging to the experimental group. These students will be given the training in using the data chart for making the notes and Many of the students became well-

versed in using the data charts for the understanding of various concepts.

Group B corresponds to the control group which comprises of the students who were not aware not given the training regarding the usage of the data charts. After some point in time, the students were given a questionnaire regarding the usefulness of the data chart strategies, To assess the impact of the data chart strategies on the learning abilities of the students, a post-test was conducted in which students were given passages to write on and multiple answer type questions to be answered after reading from the paragraph, vocabulary questions.

The scores of both the groups in the post-test were compared and if the experimental groups' scores are found to be significantly higher than those of the control group, the difference is attributed to the independent variable. The experimental group is the one that is well thought of the data chart strategies, whereas the control group is not ignorant of it.

- **Instruments used.** To find the results, the researchers used the writing test and a review questionnaire as an instrument.

Written Test:

The questions prepared by the researchers were used mainly to test the reliability of the data chart strategies for improving the conceptual clarity and creativity of the students concerned and The questions were asked about different subjects. The achievement test consisted of 60 items distributed as follows: 5 items of (Reading comprehension), 10 items of (Grammar), 5 items of (Vocabulary), and 5 items of (Function) and 10 items of (Writing).

The Validity of Written Test:

Best & Kahn mention that validity is the degree to which evidence and theory support the interpretation of test scores entailed by the proposed use of the test. In test validity, the researcher explains the value of writing test depending on the reliability and In the present research, the written test measures the degree to which the person understood the environmental factors and its impact on their motivation level to learn English.

There are many types of validity, The most important types are Face Validity and the content validity. Face Validity focuses on whether the test measures the knowledge which it claims to

measure while the content validity measures whether it covers the representative sample to be measured, The present test satisfies both the type of validity.

Discussion of the Results

In the light of the findings of the research conducted, it can be stated the understanding of the concepts through the data chart strategies are found to be the best method to make the students develop interests in their subjects and help them understand it very well. It further enhanced the creativity of the students concerned. From the results of the first hypothesis, it can be claimed that students of the experimental group performed better than those of the control group in learning the language. The fear factor regarding the understanding of difficult concepts is greatly reduced, The availability of data charts in different forms makes it useful for the different types of students. The results of the written test which was conducted to assess the performance of the students were also proving the same. The results of the first hypothesis claimed that the marks obtained by students of the experimental group were in the range of 20-30 and that by control group were 10-20. The Experimental Group became more active in the class and increased their achievement in the written test.

The students gave a positive response to the questionnaire they were given and They were highly pleased and happy with the new techniques, The fear factor had been greatly reduced and they started showing enthusiasm in learning the language.

Conclusions

Based on research, the following conclusions can be drawn.

There is a substantial improvement in the conceptual clarity of the students who were taught with the data chart strategies. There is also a significant difference between the enthusiasm level of the students from the experimental group who are given knowledge about the data chart strategies and those students from the control group who are unclear about those things. There is also a significant improvement in their performance which would make them shine in a number of subjects. When the students take a general look at the contents of a lesson and then enter the details of the subject, they understand the lesson lesson. Especially in some of the lessons of this book, heavy material is described

with complex writing. Also, collecting the contents of each lesson, one-on-one and on a single page, makes it easier to learn interconnected lessons. In addition, when these graphs are provided to the student, time can be used to explain the content and bring more examples and lessons to the lesson. Strengthening writing skills or writing in the second language is one of the most challenging because many people, even in the first language, are not able to write different texts. On the other hand, the rules of formal and informal correspondence and correspondence are completely different from the rules of informal correspondence and letters. An important part of writing skills is knowing the grammar and rules of the English language. On the other hand, the reinforcement of the vocabulary circle will help the reader move more easily. In addition, the proper dictation of words in professional terms seems to play a key role. Writing is a good piece of writing in which sentences and paragraphs are interrelated and the reader can easily understand the relationship between different parts. Hossein makes it possible for students to easily connect the right paragraphs simultaneously when their vocabulary circles increase, which will increase their writing skills.

Recommendations

The research offers various suggestions to improve the system of learning in the Iraqi University. The recommendations are:

- The most important step would be to give the proper awareness among the teachers regarding the data chart strategies so that they can teach their students with the required level of competency.
- There should be a continuous assessment test to check whether the teachers themselves are interested in learning the data chart strategies.
- The University should offer modern facilities to use best methods to teach through the data chart strategies.
- Technical Seminars can be conducted by inviting the people who are having expertise in preparing the data chart strategies for learning purposes.

Frequent tests should be given to see the improvement level of the students.

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