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THE EFFECT OF COLOUR-CODING ON LEARNING ENGLISH SENTENCE STRUCTURE

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Ahmed Jamil Sulaiman Al Dulaimy

Asst. Lect., College of Education for Humanities, Department of English, Iraq

ABSTRACT

Colour carries a psychologically relevant meaning, and the colours we see affect our psychological performance. Colour-coding impacts learners' cognitive processing as material-oriented interventions in multimedia learning. For educational purposes, colours can be used to stimulate neural activity, allowing pupils to learn, memorize, and retain new information more efficiently. Especially for those who are visual learners, the brighter the colours are, the more they are able to capture the attention for particular types of information. (Elliot and Maier: 2012).

Colour-Coding Strategy can help pupils make connections, gain knowledge and have a positive impact on attention inside the classroom. So it is not a kind of fun. Using such a strategy in teaching and learning grammar can be as simple as just asking your pupils to take out their booklets and colouring pens and markers.

The current research focuses on determining the effectiveness of using colour-coding as a better tool for learning sentence structure at the primary level.

In light of the aim, the research's null hypothesis has been formulated to be tested. The design of one group has been adopted, pre and post-tests used. The sample includes (32) female pupils who are randomly selected from Qubat Al Sakhray primary school in Mosul city.

KEYWORDS

Colour-Coding, English Sentence, psychologically relevant meaning.

INTRODUCTION

The prominence of colour can attract learners' attention and direct it to relevant visual information that designers want learners to process (Hillstrom and Chai, 2006; Jamet et al., 2008). Colour is a powerful element in design, producing deep psychological and emotional responses. Recent studies have agreed that there is an interrelationship between the use of colours in teaching and academic performance (Boyatzis & Varghese, 1993; Imhof, 2004; Karp & Karp, 2001; O'Connor, Sofo, Kendall, & Olson, 1990; Terwogt & Hoeksma, 2001; Wilkins, 2003).

On the other hands, studies have proven that the use of colour-coding inside the classroom has a positive impact and an important role in creating different emotional reactions and capturing learners' attentions.

Colour is one of the most important human visual experiences. (FM, Osgood & CE. J. 1973). Colours have been found to have a significant impact in enhancing the performance of memory functions as a powerful information for the human cognitive system, and can be very effective in learning and teaching environment. (Wichmann, Sharpe LT, Gegenfurtner KR. 2002).

Colour-coding is one of the widely used techniques in achieving input enhancement of the performance of

memory functions, one of these inputs is learning grammar, which means learning sentence structure.

A number of theories and strategies have been used to help language learners acquire English grammar, this technique explains how acquiring a new language goes beyond simple routine formation, it is an active process that employs a variety of cognitive abilities. And it has become one of the most researched areas due to its promising results in relation to EFL.

(Ellis, 2006); Brown & Lee, 2015) said that, it seems to be complex to comprehend, clarify, and describe what grammar is as well as how it should be taught in English language teaching (Ellis, 2006; Brown & Lee, 2015; Lessons. Richards, 2015).

Statement of the Problem

Teaching grammar was seen as elitist or unnecessary. On the one hand Chomsky had proposed his theory of universal grammar, suggesting that the children's brains are all wired up to understand grammar by intuition; on the other hand, Chomskyan linguistics was considered - not without good reason - beyond the grasp of teenage learners and of many of their teachers too. So rejecting earlier prescriptive and traditional approaches to grammar, many linguists concluded that it was best not to teach grammar at all.

Quite rightly it was deemed that teaching generative grammar, let alone transformational grammar, to learners would be elitist, since only the best school students or EFL/ESL learners would be able to follow. (Rossiter, 2021). Furthermore, teaching grammar is one of the most difficult issues of language teaching.

Colour-coding to learning sentence structure holds an important place for effective learning. It will be more motivating for pupils if grammar is taught in colour-coding as they will have an opportunity to perceive how the new sentence structure patterns work and that will make learning patterns easier if they are given in a multi-colour way which provides accuracy in the target language.

Aim of the Research

This research aims to experimentally investigate the effect of colour-coding on pupils' learning of English sentence structure.

Hypotheses of the Research:

The research assumes that there are no statistically significant differences between the development mean scores of the research group in a given pre-test and post-test.

Importance of the Research

The importance of the present research stems from the importance of grammar as well as the importance

of the primary school pupils. Because knowledge of grammar is the foundation of English language, it should be given priority in second language teaching. In the current era of communicative language teaching, some language teachers and learners assume that grammar is not really necessary for communication, while other assert that grammar still plays an important role in the development of learners' language system. (Zhang, 2009)

On the other hands, and according to UNISEF, children in primary school learn basic skills that prepare them for life, work and active citizenship. Quality education empowers children and young people, protects their health and well-being, and breaks cycles of poverty.

<https://www.unicef.org/education/primary-education>

Limits of the Research

The current research is limited to:

- 1- A sample of the Fifth Grade Primary female pupils on the left bank of Mosul.
- 2- Teaching the sentence structure pattern in the English language from the textbook (English for Iraq, fifth primary Book). (MacBurnie, Sarah & Rabi, Sally, 2017).
3. The second semester of the academic year 2023 - 2024.

Definition of Basic Terms



Color coding is an educational technique that basically involves assigning specific colors to different categories, it adds a touch of organization and visual flair to study notes. (Abang, 2024)

Grammar is rules of a language. —Grammar is a system of meaningful structures and patterns governed by pragmatic constraints (Larsen-Freeman, 2001).

Color and Memory

Colour is believed to be the most important visual experience to human beings (FM, Osgood CE., 2002) It functions as a powerful information channel to the human cognitive system and has been found to play a significant role in enhancing memory performance. (FA, Sharpe LT, Gegenfurtner KR). Colour can be very effective in learning and educational setting,

The structure of memory includes sensory memory, short-term memory, and long-term memory (Atkinson & Shiffrin, 1968). When information first reaches the sensory memory, it will give a short amount of attention to the incoming information, analyze its physical and sensory characteristic, and then move the information to the short-term memory for recognition and labelling. The information which is further analyzed will move to the long-term memory for

permanent storage (Dzulkifli & Mustafar, 2013). Colours help learners increase their attention levels on certain information, which help such information to be transferred to short-term and long-term memories, thus increasing their chance of memorizing such information (Dzulkifli & Mustafar, 2013). For example, warm colours such as red, orange, and yellow have been recognized as the ideal colours to increase learners’ attentions and stimulate their active participations in activities (Wilson, 1966). Dzulkifli and Mustafar (2013) stated that arousal, “the state of being alert physically and internally” can enhance short term and long-term memories. The Influence of Colour on Memory Performance: A Review

Procedures:

First, the teacher reviews the topic of sentence structure, which is limited to SVC in the textbook which is (English for Iraq fifth primary). (MacBurnie, Sarah & Rabi, Sally, 2017). Then he conducts the pre-test of sentence structure as shown in the attached Appendix, before applying (The strategy of The Effects of Colour-Coding on Learning English Sentence Structure), the teacher writes some sentences on the board and asks the pupils about their structure, for example:

S. V. C.
NADA IS NICE.

(NADA) is the subject, (IS) is the verb and (NICE) is the complement

In the next lesson, the teacher applies the strategy of The Effect of Colour-Coding on Learning English Sentence Structure, after reviewing the topic of the previous lesson (English sentence structures),

He explains:

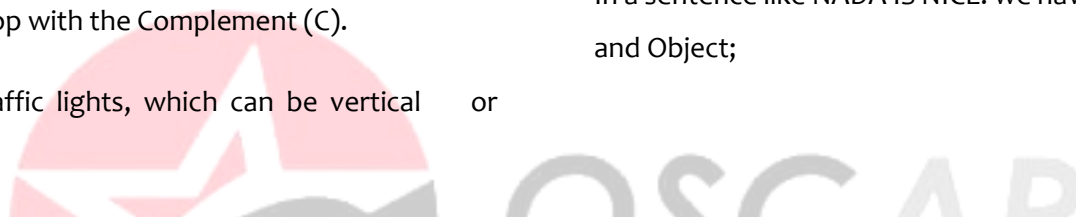
In some English sentences which have SVC pattern, we start with the Subject (S), keep moving with the Verb (V) and we stop with the Complement (C).

That's like traffic lights, which can be vertical or horizontal.

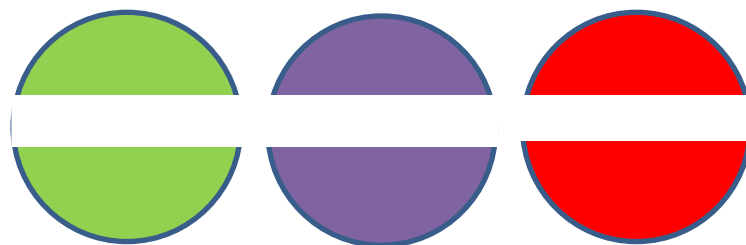
Cars start moving when the traffic light is green, keep moving when the traffic light is yellow, and stop when the traffic light is red.

So, Subject (S) represents the green traffic light (we start moving), Verb (V) represents the yellow traffic light (we keep moving) and Complement (C) represents the red traffic light (we stop moving). That is the structure of one of the English sentence patterns, which is SVC.

In a sentence like NADA IS NICE. we have Subject, Verb and Object;



S. V. C.
NADA IS NICE.



S
NADA

V
IS

C
NICE.



Again, the teacher repeats and points to the sentence: we must start with green which is the Subject (Nada) and keep moving when it is orange which is the Verb (IS) and stop when it is red which is the Complement (NICE). I.e., in this type of English sentences, we have to arrange its elements in SVC form.

After that he asks the pupils to repeat the written sentence two times after him, at the first time he points to the word and at the second he points to its part of speech. After that, he asks them to write down the sentence in their notebooks. And he asks them to write at least two similar sentences as a homework for the upcoming lesson.

In the next lesson, the teacher reviews the topic of the previous lesson, discusses the sentences that the pupils bring as a homework and corrects the incorrect ones.

He asks one of the pupils to write one of his own sentences on the board and the pupil himself select another one to analyze it according to SVC form. He repeats this activity more and more. At the end of the lesson he asks the pupils with wrong sentences to write the corrected ones five times as a homework.

In the next lesson, the teacher reviews the topic of the previous lesson, and writes NADA IS NICE on the board with explanation:

S. V. C.
NADA IS NICE.

To enhance this technique, the teacher asks a group of three pupils to come in front of their classmates and randomly put on three caps that he has brought; green, orange and red labeled S, V and C successively and asks another pupil to arrange the group members in a

correct line according to the rule Green, Orange and Red. He repeats this activity three times with different pupils.

Then he writes the following sentence:

S. V. C.
NADA AND SUHA ARE NICE.

And says, in this sentence, the subject is neither (NADA) as the previous sentence nor (SUHA) alone. The subject is both so:

(NADA and SUHA) is the subject, (ARE) is the verb and (NICE) is the complement.

According to the traffic lights colours,

S V C
NADA AND SUHA ARE NICE.

To enhance this technique, the teacher asks a group of four pupils to come in front of their colleagues and to line up as SS for (NADA & SUHA), V for (ARE) and C for (NICE) and he asks another pupil to give each member of the group a suitable cap according to the rule SVO to put on. So, he gives the first two members the green caps labeled with letter S (NADA & SUHA), gives the

orange one labeled with letter V to the third member (ARE) and gives the last member the red cap labeled with letter C (NICE).

The same thing will happen with the complement if it contains more than one word as:

S. V. C.

NADA AND SUHA ARE NICE GIRLS.

In this sentence, the complement is (NICE GIRLS)

(NADA and SUHA) is the subject, (ARE) is the verb and (NICE GIRLS) is the complement.

S V C

NADA AND SUHA ARE NICE GIRLS.

He asks the pupils to repeat the written sentences two times for each after him, at the first time he points to the word and at the second he points to its part of speech. After that, he asks them to write down the words on their notebooks.

colleagues and to line up as SS for (NADA & SUHA), V for (ARE) and CC for (NICE GIRLS) and he asks another pupil to give each member of the group a suitable cap according to the rule SVO to put on. So, he gives the first two members the green caps labeled with letter S (NADA & SUHA), gives the orange one labeled with letter V to the third member (ARE) and gives the last



two members the red caps labeled with letter C (NICE GIRLS). After this activity, the teacher asks all the pupils to return to their seats and asks other pupils to come and repeat the same activity with other sentences given by the pupils themselves.

In the next lesson, and after reviewing the topic of the previous lesson, the teacher asks the pupils:

What do you conclude from that? pointing to the colours and to the words. He gives them a period of time to think, then he listens to their answers and says:

We conclude from that, the Verb is located in the middle, between the Subject and the Complement, in other words, what comes before Verb is Subject and what comes after the Verb is the Complement.

Then he repeats according to the traffic lights, Green means Go or start moving. Orange means keep moving and Red means Stop moving.

The Experimental Design of the Research

Research Group	Pre-test	Independent Variable	Post-test
	Selected Sentences	Colour-Coding Strategy	Selected Sentences

The lesson after, the teacher conducted the post-test.

Implementation of the Post-Test:

After completing the experiment, the post-test of the same sentences as shown in the attached Appendix is

conducted to the research group on Sunday (25/5/2024).

The results shown in the table below were reached:

Mean, Standard Deviation, and T Values in the Pre and Post Tests of the Pupils’.

Research Group	Tests	No. of Pupils	Mean	Standard Deviation	T Value		Level of Significance
					Calculated	Tabulated	
Group	Pre-Test	32	4.06	3.388	4.432	2.038	(0.05) At 31 degrees of freedom
	Post-Test	32	6.81	3.658			

RESULTS AND DISCUSSION

It is obvious that the calculated T value (4.432) is higher than the tabulated T value which is (2.038) with ($\alpha = 0.05$) alpha and (31) degree of freedom. consequently, the null-hypothesis is rejected and the alternative one is accepted. That is to say, there are statistically significant differences between the mean scores of the Pre-Test and the Post-Test in favour of the Post-Test. I.e. using Colour-Coding Strategy has a positive effect on learning grammar, as pupils' scores of on Post-Test are higher than with their scores on the Pre-Test.

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Appendix

The Effects of Colour-Coding on Learning English Sentence Structure

Pretest

Analyze the following sentences to SVO

- 1- He is here.
- 2- They are beautiful.
- 3- It is a big car.
- 4- Both Suha and Huda are Iraqi women.
- 5- That lady with the big cute black eyes is our school principal.