

Effect of the Syntax Surgery strategy on the Achievement of Secondary School Students

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Abstract

The research aims to identify the effect of the Syntax Surgery strategy on secondary school students' achievement in English grammar. The researcher used a two-group experimental design: the experimental group, which was studied according to the Syntax Surgery strategy, and the control group, which was studied according to the usual method. The achievement test is used as a research tool. The experiment was implemented in Somaya Secondary School for Girls in the first course of the academic year 2019-2020. After completing the application, the researcher administered the research tool and observed that the experimental group that studied according to the Syntax Surgery strategy showed superior performance compared to the control group that studied according to the traditional method. The study recommended the necessity of deception, depending on the strategy used with the experimental group. It also suggested generalizing the Syntax Surgery strategy to other subjects, such as Arabic and other stages of the intermediate stage.

Keywords: The Syntax Surgery, Strategy, Effect, Secondary School.

1.1 Statement of the Problem:

Teaching English grammar begins in primary school and continues unabated through secondary school, college, and even higher studies. Finally, the participants received their diplomas with so little knowledge about grammar. There is no other material in the coursework that learner for as long as that. After all these years of instruction, learners are expected to be grammatically proficient. It's incorrect to assume that grammar is too difficult. As a result, one might conclude that the grammar instruction methods teachers employ year after year in their classrooms are ineffective.

Grammar instruction involves some creativity, as classical grammar training methodologies are archaic, and education necessitates invention.

Grammar instruction requires innovation, and traditional techniques for grammar training are outdated; current education demands inventiveness. It is believed to be related to the conventional methods teachers use in teaching grammar.

English is taught as a foreign language locally. According to the Ministry of Education's curriculum staff, English is a required subject. starting from elementary school through other schools and universities. As a result, keeping up with the words' progress needs a powerful command of the English language. We know that the four language skills: listening, speaking, reading, and writing must be realized in English instruction to enhance students' capability to use the language. Grammar mastery is essential for the ability in all four skills. If students know very little about grammar, they will inevitably fail to understand what they hear, fail to understand what they hear, fail to write and read, and consequently fail to speak using the correct form of the language (Mart, 2013: 124). Accordingly, another problem is that students focus only on passing the final examinations rather than on learning the language skills.

1.2 The Study objectives'

The purpose of this research is to:

1- The effect of adopting the Syntax Surgery Strategy on English-language grammar ability at two levels of recognition and production

1.3 Hypothesis of the Study:

After the attention test, there is a statistically significant difference in the mean scores between the experimental and control classes, favouring the experimental group.

1.4 Value of the Study

Empirically, this study will provide a visual and manual analysis of the relationships between parts of speech and the grammatical structures commonly used in reading texts. Moreover, it shows the differences between the student's native-language syntax and that of the target language. Also, it helps learners notice how the grammatical category changes with a simple move, omission, or shifting of a single word or a few words. This study is also valuable because it enhances the students' grammar achievement through involving different senses in learning. According to Ertürk (2013:153), both learning and retention of English can be promoted by visual enhancement of input.

1.5 Limits of the Study:

The present study is limited to the following:

1-The population of the study:

The learner population in the fifth stage of secondary school in the Tikrit area is the focus of this research.

2-The sample of the study:

The sample of this study is the 5th grade at Somaiya Secondary School.

3-The study Material:

4-The Time of the study:

The study's topics or material are units 2 and 3 of the fifth preparatory book, the eleventh in the series "*English for Iraq*" by Olivia Johnston and Mark Farrell. The activity was conducted in the first course of academic study 2019/2020.

1.6 Definitions of Basic Terms:

1. Effect

An effect is a change or reaction that someone or something causes in another person or thing. It may also refer to a certain appearance, tone, or sensation that an artist or writer wishes to achieve. (Horby, 2010:486)

Operationally

The effect is the improvement in students' knowledge of English grammar after they undergo the experiment in the present study.

2. Syntax Surgery strategy

A teaching technique that includes breaking sentences into more intelligible chunks so that students can see the sentence fragments being changed (Herrell, Jordan, 2012: 132).

Syntax Surgery is a visual and tactile learning approach that allows students to see and perceive the connections between components within a phrase that may be causing trouble and confusion when grasping, across different learning styles (Damai, E. A., 2018).

Operationally

Syntax Surgery is the strategy that is used in this study. It involves writing problematic sentences on strips of paper, then cutting and rearranging them to show students the correct word order and help them remember English grammar.

6. Secondary school students

The students who study in a private school (in the USA) are prepared for college. (ibid: 657)

Pupils who attend a private school (in Britain) for children between the ages of 7 and 13. (ibid: 1195)

Operationally

The students at the schools (in Iraq), which are higher than intermediate schools, and before college. They are between 16 and 21 years old.

8. Achievement

Something that someone has accomplished effectively, especially through their own work and expertise. It is derived from the verb "accomplish", which implies to succeed in obtaining specific goals, status, or standard, especially after a lengthy period of labor. (ibid: 12)

Achievement is gaining something by hard work or ability. (Tambunan,2016)

Operationally

Achievement is the students' mastery of English grammar and their ability to form grammatically correct sentences according to the syntax surgery strategy.

Theoretical Background and Previous Related Studies

2.1 Introduction

Petrina (2006: 91-93) argues that despite the similarities many students share, each student is different. Students can simply design their own curriculum, one that supposedly meets their requirements; they must not be left to their own devices. Teachers who change their learned techniques accommodate a broader range of learning styles than those who use them continuously. Instruction is the complement of content. In the broadest sense, there are four types of instructional techniques or teaching approaches. Teachers who have spent years in schools would know each model and most likely have strong preferences for one or two.

1-**Didactic**: Direct instruction is usually verbal and takes the form of a lecture or presentation.
2-**Modelling** is a type of direct instruction that is primarily visual and takes the form of demonstration and practice.

3-**Managerial**: Facilitation, individualization, and group management. Indirect or interactive instruction.

4-**Dialogic**: oblique interactive Teaching; Socratic method of debate, questions, and thought provocations.

2.2 Teaching English Grammar

Ellis (2006: 84) mentions that some writers define grammar teaching as presenting, explaining and/or practicing grammar. These definitions are not satisfactory, since some grammar lessons consist solely of practice, while others present only grammar. A broader definition of grammar teaching might be:

An instructional approach that calls learners' attention to certain grammatical forms in such a manner that assists them in either knowing it extralinguistically, or processing it in comprehension and/or production, for them to internalize

2.3 Importance of Learning Grammar

Learning grammar can enhance the learner's proficiency and accuracy in using the language and facilitate mastery of its syntactic system; thus, it helps develop fluency. Nassaji and Fotos (2011: 2) also assert the importance of grammar, saying, "It was thought that language was primarily made up of grammar rules and that knowing those rules would be sufficient for learners to learn language." They also said that grammar is fundamental to language learning, and without the acquisition of grammar, learning does not exist. (ibid:1)

Saaristo (2015: 298-299) finds by means of a survey that (62%) of Finnish university students declare that grammar has a very important role in language studies. In Finland, grammar learning is overemphasized because people are afraid of making grammatical mistakes when they speak.

BaSaeed (2013: 21) declares that grammar can be taught in many ways, but no one best way can suit all the rules of grammar.

2.4 Syntax Surgery strategy:

This strategy creates a visual representation of the components of a phrase that assists English learners in perceiving the connections involved in the development of the image, also allowing pupils to clarify meaning. This strategy was introduced by Dr. Herrell in 1998. Adrienne Herrell is a Florida State University professor at California State University. She taught seminars on early literacy, assessment, and techniques for teaching English language learners until her retirement in 2004. (Herrell and Jordan 2012: 133).

The Steps of Syntax Surgery

Teachers should break down their instructions into steps in order to be easily learnt and understood by students. Any teaching strategy involves passing through several steps, from

preparation to application. According to Herrell and Jordan (2012: 132), a syntax surgery lesson is conducted through the following steps:

1• Identify a problematic sentence—The teacher recognizes a statement that is giving trouble in this phase. It might be a statement uttered by the student in which the home-language word clashes with the English word order, or it could be a difficult sentence encountered while reading, generating confusion.

2• Write the sentence and initiate the "surgery" The instructor then puts the phrase on a sentence strip and reads it aloud with the student or students who are participants in the speaking or reading exercises. For example, if the student's statement states, "*I have a blue scarf*", grab a pair of scissors and cut the sentence apart in the spot or places of difficulty. "*I have a blue scarf*," for example, would be clipped before the words "*scarf*" and "*blue*."

3• Rearrange the words. The third step would be to rearrange the words in a pocket chart in the correct English sequence. Place "I have a blue scarf" on the chart and say, "This is the way we say it in English. " Then, the student is asked to read the corrected sentence along with the teacher, and then the teacher explains the difference in the word order as simply as possible.

4• Practice more sentences with the same pattern. The instructor then creates a few more phrases on sentence strips with the same word pattern and asks the pupils to read them together with him/her for extra practice.

5• Time the lessons—The instructor should not use this lesson in a way that interferes with communication with the student; i.e., it should not consume most of the lesson time and neglect other activities. The teacher should reply to pupils, model proper English grammar, and offer directions to several students at once.

2.5 The Previous Related Studies

Related Studies Concerning Syntax Surgery

Studies on the Syntax Surgery strategy are quite few. Even though there are some studies concerning the syntax surgery strategy:

1. Damai Study (2018)

Damai (2018) has conducted a study in Sumatra, Indonesia, using the Syntax Surgery strategy—he used the word 'technique' instead of 'strategy'. The study's dependent variable was reading comprehension of descriptive literature. The study sample consisted of 75 students (56 females and 19 males). The students were distributed into two classes: one control class (38) and one experimental class (37). Damai used a pre-test and post-test experimental group got a score mean of (58.10), whereas the control group was (53.55). After treatment, the Mean of the experimental group was (78.24), and that of the control group was (68.68). After analyzing the data collected from the pre-test and post-test, the writer found a clear difference in favour of the experimental group and concluded that the Syntax Surgery strategy is an effective pedagogical technique.

According to the results above, it is expected that the Syntax Surgery strategy will yield better results when used to teach grammar, as it best suits the subject of syntax and grammar instruction. One can observe from the name of this strategy that it originated primarily to analyze syntax, which means the way words are arranged to form correct sentences in a specific language.

2.6 Studies related to Achievement Grammar:

1. Abu Moumer Study (2017)

In a study by Abu Moumer (2017) in Gaza, Palestine, the writer aims to assess grammar learning using the Mastery Learning Model. The writer selects (69) students to represent the study sample. She distributes the students as follows: (36) in the exp group and (33) in the cont group. They are in 10th grade and aged 15-16, which is a little younger than the sample students in the present study. The writer uses pre- and post-tests as a data-collection technique. In the pre-test, the two groups. The highest score is 30, and the result after treatment and post-test is that the Mean of the control group is (19.39), whereas the Mean of the experimental group is (24.69). This means that there is a significant difference between the two groups concerning English grammar achievement.

2. Damra and Al Qudah Study (2012)

Another study by Damra and Al Qudah (2012) in Amman, Jordan, examined the effect of students' native language on the English grammar achievement of (9th) stage EFL students in the academic year 2010-2011. The study sample consists of 80 secondary school female students, divided into 2 groups: control and experimental. The instrument used was a grammar achievement pre-test to determine whether there was a difference in students' levels, and the two groups were equivalent. Then, after the experiment was conducted, students were post-tested. The result was that after the post-test the Mean of the control group was (16.0), while the Mean of the experimental group was (21.25). This means that students who were taught English grammar using Arabic (their native language) achieved the rules better than those taught without using their native language.

3. Plan of the Study

To conduct this study, two groups of 4th graders were selected as the *exp* and *cont* groups. Both groups take a pre-test to assess their English grammar levels. Then, the cont-group is taught using the conventional method, and the exp-group is taught using the Syntax Surgery Strategy.

Then, the students, using a pair of scissors, cut and correct the sentences themselves, practice more sentences in the same way, and read the new structures.

After the course is finished, the two groups are given a post-test to assess whether there is a significant difference in results between the pre- and post-tests. The lesson plans and procedures for the two groups of the study.

2. Methodology:

1. Independent variable (i.e. the experiment) represented by training students in using the syntax surgery strategy.
2. Dependent variable: Oral reading skills of Iraqi EFL second-grade middle school students and their Achievement grammar. Table 1 below highlights the experimental design of the study.

Table 1. The Experimental Design of the Study

Group	Treatment	Post – test.	Test / Scale
Experimenta 1	The syntax surgery strategy	✓	Achievement test English language

Control	Traditional method	✓	==
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3.2 Population and Sample

The population comprises the learners of all fifth secondary classes in Tikrit city during the academic year 2019-2020. The sample chosen for this study consists of 50 male students aged 16-17 years, who come from the same cultural community and represent two 5th-grade classes from the scientific branch at Sumaiya for girls.

It is a homogeneous sample, as the students come from the same cultural background and are at the same stage, having studied English for 8 years. The sample is represented in the following table:

Table 2: Students' group distribution

section	Group	Number
Class A	Control	25
Class B	Experimental	25
Total		50

The technique that is used in selecting the sample of the study is "*deliberate sampling*", which is also known as purposive or non-probability sampling (Kothari, 2004: 15). The reason is that "Sumaiya" Secondary school is the only male school in Tikrit city, which has a homogenous sample of fifth secondary classes.

3.5 Instruments of the Study:

Construction of the Test

The test items, along with their behavioral objectives, are set by the researcher, who has drawn on both versions of the established book for the fifth preparatory class: Student's Book and Activity Book. The test items and the behavioural objectives are then reviewed by the study supervisor and the jury members to modify, substitute, or omit any unsuitable items. The final construction of the test is the following:

1-Question number one (which constitutes production) is the major question in the test. It consists of (20) items. Items (2, 7, 8, 11, 15, 16, 18, 19, 20) require the students to put the tenses in the correct form. Items (1, 5, 14) require the correct ordering and placement of words. Items (3, 4, 6, 9, 12, 13) need appropriate words or phrases derived from a given sentence or example. In items (10, 17), students have more freedom to choose the expressions. This question is worth 40 marks.

2-Question number two (which measures recognition) consists of (10) multiple-choice items that measure different aspects. Items (1, 4, 8) examine semantic knowledge. Items (2, 3, 7, 9, 10) examine grammatical knowledge. At the same Time, the items (5 and 6) examine phonological knowledge. Question number two is worth 20 marks.

3-Question number three (which also measures recognition) consists of (10) items that require the students to match pairs of words to form compound nouns. This question is worth 20 marks: 2 marks for each correct pair.

4-Question number four (also measures students' production) requires the students to supply the past tense and past participle for (10) irregular verbs. This question is also worth (20) marks, two for each item, and one for each conjugation.

It is clear that (60%) of the test items, which are represented by questions one and four, constitute production from the students. In other words, require students to supply or infer answers rather than choose them. The other (40%) of the items, questions two and three, constitute recognition. They require the students to choose the correct answers from the given alternatives.

Procedures of the Study Application

In conducting this research, which was already planned, some steps are followed to apply the experience:

1. In the first meeting on Sunday, 2nd October 2019, the pre-test was administered to both the control and experimental groups to obtain an index or a fair idea of the students' previous knowledge of English grammar.
2. All (50) students, the requirements of this study determined which class is the control group and which one is the experimental. Then classes are taught for forty-five minutes, four times a week. The control group is taught using the conventional strategy most Iraqi teachers use, i.e., deductive, inductive, or a mixture of both. With the experimental group, the Syntax Surgery Strategy is used.
3. The teaching process was followed by administering the post-test on 6th January 2020 to assess the significant effect of the Syntax Surgery Strategy on students.
4. Eleven days after the post-test is given, on 17th January 2020, a delayed post-test is administered to the experimental group to assess how well the students retain the grammar rules they have been taught.

Statistical Tools

The following statistical tools are used in the present study:

1. The Mean is used to calculate the average of a set of data; it is obtained by adding all the components and dividing the sum by the number of components.
2. An independent-samples t-test is used to determine the students' English levels and to assess sample homogeneity (ibid.: 147).
3. Cronbach's Alpha formula is used to achieve test reliability, which ranges (83%). The formula is shown below:
4. The percentage is used to determine the proportion of students who answer each test item correctly and/or incorrectly.
5. Standard Deviation is used to calculate the independent-samples t-test and to assess the difference between the groups in the study (bid: 88).

To obtain the results of this study, some of the statistical tools described above are handled manually, while others are handled automatically using SPSS (Statistical Package for the Social Sciences).

Verifying the hypothesis:

The hypothesis states that **"on the post-administering of the attainment test there is a statistically significant difference in the mean score level between the experimental class and control class of the Achievement favoring the experimental group."**

A t-test for independent, homogeneous groups was used for the Achievement score on the Test of English Grammar. The t-test results confirm hypothesis 2, as shown in Table 3.

Table 3. The t-test of the Achievement post scale comparing both control and experimental groups on the students' Achievement scale

Group	N	Mean	D	Levenes' Test for Equality of Variances		t-test for Equality of Means			Effect size
				F	SIG.	D.F	T Value	Sig.	
Control	25	2.54	0.75	1.78	0.189	3	<u>5.60</u>	0.05	Medium
				Equal variances are not assumed		3		Significance at Level 0.05	
Experimental	25	3.55	0.74	Equal variances are not assumed		3		Significance at Level 0.05	

The table shows that there was a statistically significant difference between the mean scores of the control and experimental groups on the students' achievement post-test. This table indicates that the computed t-value (5.60) is greater than the calculated t-value (2). This means that there is a statistically significant amount of Time at (0.05). These findings support the hypotheses positively and favor the experimental post-test results over those of the control group on the student English Language Achievement post-test. This significant difference between the experimental and control groups can be attributed to the training the experimental group received in the Syntax Surgery Strategy. This result shows the effect of Syntax Surgery Strategy activities (recognition and production) on students' achievement in grammar, providing opportunities for every student to learn English and enhance their preferences.

5.3. Recommendations:

In the study results, the following recommendations can be drawn:

- The educational system must pay greater attention to professional development programs for EFL teachers, particularly in grammar.
- EFL teachers must be aware of the tools and grading scales essential for assessing and monitoring students' language skill development.

Ideas for future research:

The study's findings and results provide a way for further research:

- Examine the impact of the Syntax Surgery Strategy on students' critical thinking, creative thinking, and problem-solving abilities.
- Examine the impact of the Syntax Surgery Strategy on students' achievement at different stages of schooling (Elementary, secondary, and University).

References

Abu Mouser, R. N. M. (2017). The effectiveness of a mastery learning model on English grammar learning and the self-efficacy of tenth graders.

- BaSaeed, E. A. (2013). An approach for teaching English language grammar to young Arab learners. *IOSR Journal of Research and Method in Education*, 1(2), 20-30.
- Brown, H. D. (2000). *Principles of Language Learning and Teaching*. Pearson Education Ltd.
- Damai, E. A. (2018). The influence of using the syntax surgery technique on students' reading comprehension in descriptive texts in the second semester of the tenth grade at SMK Gajah Mada Bandar Lampung in the academic year 2016/2017 (Doctoral dissertation, UIN Raden Intan Lampung).
- Damra, H. M., & Al Qudah, M. (2012). The effect of using the native language on grammar achievement and attitudes toward learning among basic-stage EFL students in Jordan. *International Journal of Business and Social Science*, 3(1).
- Ellis, R. (2006). Current issues in the teaching of grammar: An SLA perspective. *TESOL quarterly*, 40(1), 83-107.
- Harmer, J. (2001). *The practice of language teaching. The Practice of English Language Teaching*. 3rd ed. Oxford: Longman, 164-188.
- Herrell, Aderienne and Jordan, Micheal. (2012). *50 Strategies for Teaching English Language Learners*. (4th edition): Pearson Education. Boston, USA.
- Khaleel, H. A. A. (2016). A blended learning program to improve the oral reading skills of the middle-stage pupils in iraq republic (Doctoral dissertation, Doctoral dissertation. Mansoura University. Egypt).
- Kothari, C. R. (2004). *Research methodology: Methods and techniques*. New Age International.
- Kowsary, M. (2013). *The Effect of Teacher's Reading Aloud on Iranian EFL Learners' Reading Comprehension*. Unpublished Thesis, Hakim Sabzevari University.
- Mart, Ç. T. (2013). *Teaching grammar in context: why and how?*. *Theory & Practice in Language Studies*, 3(1).
- Nassaji, H., & Fotos, S. S. (2011). *Teaching grammar in second language classrooms: Integrating form-focused instruction in communicative context*. Routledge
- Orencia, M. A. (2006). Enhancing pupils reading comprehension and attitudes through a whole language-inspired literature-based reading program. *CELEA Journal*, 29(3), 3-18.
- Oruç Ertürk, N. (2013). Effects of visually enhanced input, input processing and pushed output on grammar teaching.
- Petrina, S. (Ed.). (2006). *Advanced teaching methods for the technology classroom*. IGI Global.
- Saaristo, P. (2015). Grammar is the heart of language: grammar and its role in language learning among Finnish university students. *Voices of pedagogical development—Expanding, enhancing and exploring higher education language learning*, 279-318.
- Tambunan, I. R., & Gintings, E. M. (2012). The effect of communicative and audio lingual Method On Student's Conversational Achievement. *Linguistica*, 1(1).
- Van Valin Jr, R. D. (2001). *An introduction to syntax*. Cambridge University Press.