

# **Chapter Three**

## **Research Methodology**

### **Introduction**

This chapter presents a full description of the research methodology adopted as well as the research instruments employed. Moreover, the validity and reliability of these instruments will be confirmed.

The chapter will further include as part of its components, four main sections:

1. The subjects of the study
2. The teaching/learning materials.
3. The theoretical principles on which the methodology is based.
4. Instrumentation and procedures of data collection.

### **3.1 The Study Methodology**

To analyze the collected data and arrive at a solid conclusion, the study espoused a mixed-method approach: the descriptive analytical and experimental method. This situation has the effect of allowing the instruments used in the research to go together in a complementary manner. For this reason, an experiment, questionnaires, and class observations were used to deal with the research questions and objectives. The (SPSS) program version 17 was used for data analysis.

### **3.2 Study population and sample**

The study population was students and the teaching staffs of English, male and female at the Sudan University of Science and Technology. This experiment was conducted at the College of Languages. It goes without saying, that undergraduate students enter university after spending eight years studying English at the basic and secondary levels of general education. All the students are aged 18 years old. They all speak Arabic as their first language, and all of them have studied English for 8 years at school. All the students who took part in the study experiment were gender-mixed groups.

The test used was similar to students test practiced on their text book and as Sudanese Secondary Certificate (see appendix 1). The test consists of true/false and multiple choice questions, such questions are good means

to assess reading comprehension because they don't require production (Nuttall 1982). The students stay for 4 years at the university before graduation. There were 25 students per group and in addition to studying. Besides English, students also enroll in other courses including Arabic and French and course of Islamic studies to complete their undergraduate credit hours.

Most of the tutors, who participated in the experimentation process, are experienced Sudanese teachers. Some have taught at the university for 10 years, while a few have joined recently. As the students mix together for hours, they spend a lot of time speaking Arabic, and have little or no exposure to English outside the classroom, apart from that they may speak very little English or listen songs in English over their headphones. The type of songs they listen to are. They listen to the types of songs that appeal to the interest of young and have no formal diction.

### **3.3 Tools of the study**

To collect the desired information to inform the recent study, two types of tools have been adopted. One type is a questionnaire, which was distributed to a randomly selected group of Sudanese English language teachers at universities. A pre-test and a post-test, is the second tool used in this research and classroom observation, among others. The tests were administered to *first year* undergraduate students of Sudan University of Science and Technology. Students were, amounting to as many as a hundred were divided into two groups, namely experimental and controlled. Before the test, the experimental group has been subjected to a dose of exposure to linking devices which was positively reflected in their exam performance.

The descriptive and analytical method of investigation has been adopted in the present research. The well-known package of (SPSS) was employed for the data analysis to produce the wanted statistical end.

### **3.4 Validity of the questionnaire**

The questionnaires of this study, were validated by a jury consisting of five assistant professors specialized in English language. They based their comments on the following criteria:

(1) The clarity of the items and instruction.

(ii) The simplicity of items, and how far they related to the subject.

(iii) The language used.

The jury made some remarks concerning some items and suggested modification for these items. Two items from TsQ. were omitted, and the researcher responded to their suggestions, and made the required modifications.

### **3.5 Strategies for the research**

The methodology adopted in this study is based mainly on a blend of the following methods and techniques:

1. Grounded Theory
2. Case study
3. Triangulation
4. Saturation

#### **3.5.1 Grounded theory**

This theory stresses the importance of “developing theories on the basis of empirical research and gradually build up general theories that emerge from data.” (Denscombe, 2003: 110). This means that “researchers should engage themselves in fieldwork as the fundamental part of the work they should do.” Practically, this entails that “the researcher should undertake data collection from the field.” which has to be a continuing process. The basic concepts of the theory are:

- a. Theories should be generated by a systematic analysis of the data.
- b. The selection of instances to be included in the research reflects the developing nature of the theory and cannot be predicted at the start.
- c. Researchers should start out with an “open-mind”.

d. Theories should be useful at a practical level and meaningful to those on ‘the ground’.

### **3.5.2 Grounded theory and the present study**

The present study employs these concepts of Grounded Theory.

a. Grounded Theory is suitable for the present study since the present study focuses on language learning in a specific setting – the classroom context.

b. The data, which is taken first hand from the field, will be approached on an “open-mind” basis.

c. The results of the study can be of great use and meaning to those “on the ground”. It will help enhance the learning outcomes of English language in the Sudanese context.

### **3.5.3 Triangulation**

Triangulation refers to the practice of using multiple methods, data sources, and instruments to enhance the validity of research findings. Mathison (1988:14) explains that the notion of triangulation as a research strategy is based on some basic assumptions. Firstly, the bias inherent in any particular data source, investigator, or method will be cancelled out when used in conjunction with other data sources, investigators, and methods. Secondly, when triangulation is used as a research strategy the result will be a convergence upon the truth about some social phenomenon. In other words, when data is collected from different sources and through different methods agree, the outcome is convergence.

Patton (2001: 247) advocates the use of triangulation by claiming that “triangulation strengthens a study by combining methods. This can mean using several kinds of methods or data, including using both quantitative and qualitative approaches”.

### **3.5.4 Saturation**

Saturation stems from Grounded Theory. It refers to the concept and practice of continuous sampling and collection and analysis of data until no new patterns emerge. Sandelowski (2008:875-876) points out that saturation occurs “when the researcher can assume that her/his emergent theory is adequately developed to fit any future data collected.” Although Grounded Theory and saturation relate primarily to qualitative data, Glaser (1978:6) observes that:

*Grounded Theory method although uniquely suited to fieldwork and qualitative data, can be easily used as a general method of analysis with any form of data collection: survey, experiment, case study. Further, it can combine and integrate them. It transcends specific data collection methods.*

The present study combines both quantitative and qualitative data analysis. As such it makes use of saturation as a technique for reaching more conclusive results.

### **3.6 Research Experiment**

There were three groups in the present study, that is (A),(B) and (C). The first one (A) as the experimental group, (B) and (C) were fused into a single (B) as a control group. Both members of the groups were daily exposed to reading comprehension for a couple of weeks. Then, for the remaining 45 days the tutor started to draw their attention to the question of lexical items, vocabulary with the aim of identifying the new lexis and trying to infer their meaning. Authentic material was included from time to time to make the work more

challenging and have the students work hard through the selected texts.

The main difference between the classes, in terms of how they studied, was that the researcher could use Arabic in the English class. The researcher has to resort to L1 now and then to help explain things that may pose impediments to understanding, while Arabic was not used at all in the control group. Both classes took a pre-test prior to the instruction program and a post-test after the program.

### **3.7 Questionnaire**

The teachers' questionnaire (TsQ.), consist of 15 multiple statements and two open-ended questions. It was divided into three parts (see appendix 3):

- i) Use of dictionaries to inquire about classroom research
- ii) The syllabus at university (whether it caters for the issue of classroom research- writing in particular)
- iii) Tutors' training ( to handle all the different parts of the contents adequately)

Part one i) includes 5 statements surveying students' use of dictionaries particularly bilingual ones, with Likert 4 points scale (strongly agree, Agree, disagree and strongly disagree).

Part two included also five statements surveying the tutors' attitude towards the syllabus, also with Likert 4 points scale.

Part three surveyed different issues ranging from tutors' training to teaching at the general education, with Likert 5 points scale.

The questionnaire papers were distributed to as many as a 100 tutors who send a considerable time responding to the different

items. The papers were, and then collected after two days for conducting the desired analysis and evaluation.

### **3.7.1 Reliability of the questionnaire**

In statistics, reliability is the consistency of a set of measurements often used to describe a test. For the reliability of the questionnaires, the study used the split – half method: A measure of consistency where a questionnaire is split in two and the score for each half of the questionnaire was compared with one another. The questionnaires were distributed to **100** teachers of English at Sudanese universities. The coefficient correlation formula was used to calculate the correlation:

### **3.7.2 Procedures**

The questionnaire was administered to teachers by hand, and was given up to 20 days to respond to the questions, some were given to other teachers to distribute them. Two forms were returned unfilled, and some were lost.

### **3.8 Pilot Study**

The pilot study (P.S) was conducted to check out the instruments used before their final administration. A group of randomly selected ten teachers, they were requested to fill in the questionnaire and feel free to write or comment orally on any observation they think necessary with a view to check the following:

1- The appropriate length of time needed to fill in the questionnaire.

2- Clarity of the questions.

The researcher received no comments regarding the above points from the teachers.

*aaa*

Table (3-1) summary of teacher's questionnaire

Variable measured	Measured by
Classroom research-its nature	Item 1,2,,4,5 and 6
Syllabus at university	Item 1,2,3, 4, 5 and 7
Tutors training	Item 1,2,4,5 and 5

Table (3.2) Academic status:

Valid	Frequency	Percent
Teacher	35	70.0%
Doctor	5	10.0%
Professor	10	20.0%
Total	50	100.0%

Table (3.3) Sex

Valid	Frequency	Percent
Male	33	66.0%
Female	17	34.0%
Total	50	100.0%

Table (3.4) Years of experience

Valid	Frequency	Percent
1-5 years	27	54.0%
5-10 years	8	16.0%
10-15 years	15	30.0%
Tssxsxxtotal	50	100.0%



### 3. 9 Classroom observation (Action Research)

The researcher visited some universities in Sudan and had a quick look at English language syllabus that was followed by these colleges. The researcher was also interested in attending reading comprehension sessions to get acquainted with the ways and the learning strategies students use to learn and retain new lexical items. The Classroom observations, which involved 10 tutors, were conducted by using check-list to note down observations. The check list covered the following items: explaining collocation exercises, their meaning, uses, grammar, vocabulary, checking understanding, praising, and telling jokes. As for vocabulary, students provide equivalent in Arabic, no more. No one particular strategy was used to show how they approach their vocabulary learning particularly the central issue of collocation.

Table (3.5) Validity coefficient

Validity coefficient is the square of the islands so reliability coefficient is (0.84), and this shows that there is a high sincerity of the scale and that the benefit of the study.

No		Mean	Std. Deviation	Chi-Square	df	Sig	Scale
1	Poor linguistic knowledge in English language syllabuses affect the improvement of student writing skill	4.56	0.611	25.720	2	0.00	Strongly agree ,
2	An adequately structured written sentence should aid the reader to understand the text	4.24	0.847	26.000	3	0.00	Agree

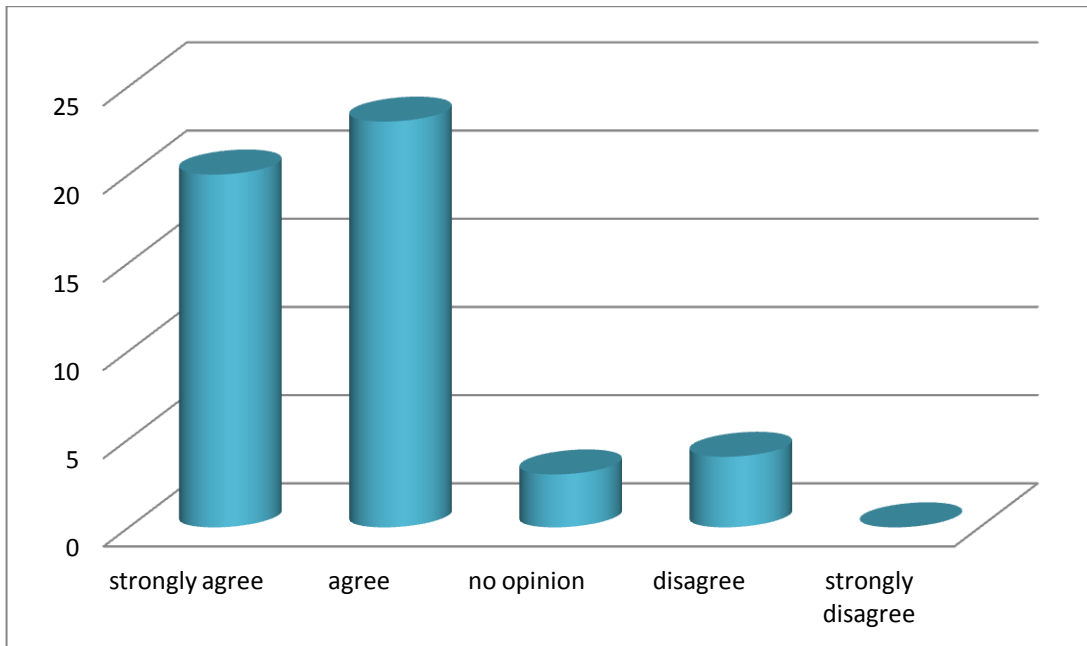
3	The methods and purposes of teaching the writing skill allow the students to communicative competence	4.24	0.981	44.000	4	0.00	Agree
4	Activities inside the class help the students to improve their communicative competence	4.52	0.580	21.280	2	0.00	Strongly Agree
5	Structures of good sentences help students to improve their writing skill	4.44	0.644	15.520	2	0.00	Agree
6	Vocabulary should have an essential focus inside the class	4.36	0.722	32.720	3	0.00	Agree

Table (3.6) Paired Samples Test

Pair	No	Mean	Std. deviation	T test	Df	Sig.(2-tailed)
Before	50	10.9	4.38	-5.713	49	0.00
After	50	12.01	2.38			

Note from the table above is that the t-test (-5.713) significant value (0.00) which is less than the probability value (0.05) this means that there are statistically significant differences in the degrees of students before and after the test.

Figure No (3.1) Paired Samples Test



From the table and figure above that the distribution of the sample by the statement as follows strongly agree by (44%) agree by (28%) no opinion by (12%) disagree by (8%) Strongly Disagree by (8%)

### 3.9 Cranach's alpha method:

Where reliability was calculated using Cranach's alpha equation shown below:

$$\text{Reliability coefficient} = \frac{n}{N-1} \frac{(1 - \text{Total variations questions})}{\text{variation college grades}}$$

Cranach alpha coefficient = (0.70), a reliability coefficient is high and it indicates the stability of the scale and the validity of the study.

### **3.10 Summary of the chapter**

This chapter described the methodology employed for gathering the data of the present study. Research instruments were described; instruments reliability and validity were confirmed. Having finished with the methodology of the study, the next chapter will present data analysis, results and discussion.