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Title

**The Use of Mobile-Assisted Language Learning to Foster Students' Self-Editing in Sentence Writing: Case of 1st Year EFL Students at Setif 2 University**

A Thesis

Submitted in Partial Fulfilment of the Requirements for the Degree of Doctorate in Teaching English as a Foreign Language (TEFL)

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## **Dedication**

Sincere gratitude to the Almighty Allah Who sheltered me with His compassion and grace; who poured me passion and patience to complete this work.

To my parents, my pillars in life and ever

To my brothers and sisters

To my family and

friends,

I dedicate this fruit of years.

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## Abstract

Recognition of the facilities that mobile technologies could supply for language learners and teachers has long been conceived with issuable spheres of formality; however, the pursuance of the present research endeavoured the manifestation of soundness that those portable devices might offer. Namely, the aim of this query is to pulse the utility of Mobile-Assisted Language Learning (MALL) in fostering students' self-editing at the level of sentence writing. The single-subject action research methodology was found to endorse outcomes of the preliminary stage investigations. As put up from the department of English language and literature at Setif 2 University, the sampled model was a group of thirty five (35) students who were purposively selected as they meet the prerequisites of the research framework. Earlier to settling on such a quasi-experimental action, a wider range of participants from the population wherein the sample is elected underwent a focus group interview and a classroom observation to be adjusted for conformity against a preliminary questionnaire with teachers. On that basis, the single-subject affiliates were exposed to an experiment of two treatment periods intermitted with two convalescence ones to practically evidence any potential of MALL over students self-editing of errors, which is also marked with pre and post questionnaires. The reported results revealed a considerable usefulness of mobile technologies across the body of the group under investigation. Furthermore, there was an established homogeneity in students' performances not only in self-editing and identifying there errors but also in the expression of writing where the marks of the language aspects continued to be competitive among those informants by dint of the awareness and positive perception they built through the approval of MALL. Those being the case, procedural behests to grip the hampers of its embodiment are enumerated eventually.

**Key words:** MALL, self-editing, sentence writing, error analysis

## **List of Abbreviations, Acronyms and Initialisms**

A.B.A.B: Time-Series/ Single-Subject Experiment

APPs: Applications (in mobiles)

ASU: Actual System Use

AtU/A: Attitudes towards Using

BItU/BI: Behavioural Intention to Use

BYOD: Bring Your Own Device model

CALL: Computer-Assisted Language Learning

CMC: Computer Mediated Communication

COVID-19: Corona Virus Disease-2019

D-Learning: Digital Learning

EFL: English as a Foreign Language

E-Learning: Electronic Learning

EV: External Variables

FGI: Focus Group Interview

FL: Foreign Language

FLL: Foreign Language Learning

ICT: Information and Communication Technologies

I-LEARN: Identify, Locate, Evaluate, Apply, kNow model

iWRGo: I WRIGHT Go Application

L1: Mother Language

L2: Second Language

LA learner Autonomy

MALL: Mobile-Assisted Language Learning

M-Learning: Mobile Learning

PDA: Personal Digital Assistant

PEoU/E: Perceived Ease of Use

PU/U: Perceived Usefulness

SOLE: Self-Organised Learning Environment model

SPSS: Statistical Package for Social Sciences

Stdnt: Student

TAM: Technology Acceptance Model

TEFL: Teaching English as a Foreign Language

TELL: Technology Enhanced Language Learning

TRA: Theory of Reasoned Action

V-Learning: Virtual Learning

WiFi: Wireless Fidelity

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## GENERAL INTRODUCTION

### 1.1 Research Background

Technology has notably been a critical component in the advancement of man's life. Due to its ubiquitous advent under the label of Information Communication Technologies (ICTs), pedagogy started to extend its insertion for instructional purposes, primarily sprung in the late 1970 (Parson, 2017). ICTs thence has been avowed to conform to language learners' capabilities, espousing their needs and personal differences. Underwoods (2009) contends that with the purport arrival of myriad digital technologies, which are dubbed as Computer Assisted Language Learning (CALL) and Mobile Assisted Language Learning (MALL), more positive students' attitudes to learning were noticeably established. Moreover, the prevalence of portable devices among learners has marked a catalyst revolution in the context of language didacticism. In this vein, Chinnery (2006) proclaims that MALL was not recognized until around 2005 when some universities in the US provided students with free mobile devices. The term becomes global in 2009 as the British Council released mobile applications directions to learning languages, English language mainly (Hockey, 2013). Alike CALL, MALL is featured of its use of personal portable devices about to make use of new ways of learning, categorized of continuity and spontaneity (Hulme and Shield, 2008). Furthermore, using this kind of technologies evokes learner of the constant accessibility to perform in different language skills. This point has been asserted by Anderson and Speck (2001) that technology motivates learners' engagement in both productive and receptive skills. Yet, the major concern of the present inquiry is related to writing and written assignments envisioned from the MALL angle. Diversified studies in this area have triggered a need to invest the prospects of the actual foci (Song and Fox, 2008; Li and Hegelheimer, 2013). Studies related

to grammar errors in L2 writing have largely focused on written corrective feedback from teachers. However, the efficacy of corrective feedback has been challenged by Truscott, and the academic debate over the effect and use of corrective feedback continues (Ferris, 2004; Bruton, 2009; Truscott, 2007). In this flow, Bitchener and Ferris (2012) described the activity of self-editing as a source of corrective feedback, and more importantly they view the competence of self-editing as an ultimate goal of providing corrective feedback. Self-editing, a learner initiated activity, has been recognised as a critical step in L2 learners' writing and grammar development, as it facilitates acquisition processes and promotes learner autonomy (Cresswell, 2000; Fathman & Whalley, 1990; Suzuki, 2008). In many ways of mobile learning, the teacher is now more accessible to the student with the help of forums and e-mail than he or she was before using only scheduled classes and office hours (Annetta et al., 2010). Li and Hegelheimer (2013) report on the development and implementation of a web-based mobile application, Grammar Clinic, for an ESL writing class. Their analyses showed that students' performance on Grammar Clinic assignments reflects their progress in self-editing. This progress is seen in the positive correlation of the students' Grammar Clinic performance with their gains on a grammar post-test, an increase of self-editing corrections, and a reduction in errors in the final drafts of two major paper assignments. For a better contextualization of the variables, the present study follows the Technology Acceptance Model (TAM) which has its origins in the Theory of Reasoned Action (TRA) introduced by Davis (1989).

## **1.2 Statement of the Problem**

Aligned with the present modern knowledge-based society, students are becoming digital natives and tech-savvy citizens. Hence, counting mobile devices as pedagogical tools appears to endorse the preferences of neoteric learners and promises to ensure solid

opportunities to satisfy their instructional lacks. To get the right corrective feedback, however, editing students' writing performance is said to attain its prominence along with the digitised language pedagogy better than in any traditional crowded and timely constrained. This end has been arrived to through investigating both teachers and students about their experiences in teaching and learning to write as a product, and particularly to edit as a process. In interviewing students and surveying teachers attitudes, the preliminary phase (as appended in Appendices A, B, C) of the present study ensued that there is a timid investment of the opportunities which portable devices can improvise as immediate ways to facilitate and self-edit their writing. Moreover, the classroom observation has unveiled the point of students' lack of necessary feedback due to the abundant number of students in classes added to traditional instruction which timely constrains the completion of the overwhelming participants. Hitherto, the present study scrutinizes the efficacy of MALL to enhance students' self-editing in sentence writing. More precisely, what would MALL bring about when incorporated? Worth mentioning, this statement works on magnifying the opportunities that mobile devices offer in the process of writing under the supervision of the teacher.

### **1.3 Purpose and Objectives of the Research**

Knowing that self-editing is time and effort gruelling, students might be assisted with a diverse learning kit inside and outside the classroom which may, in turn, facilitate and reinforce their performance. The present endeavour enquires the utility of MALL in self-editing the potential errors in students' writing among first year EFL students in Mohammed Lamine Debaghine, Setif 2 University. Along the track on, the subsequent items are leading objectives that ascertain a holistic coverage of the research main target.

1. Exploring teachers' and students' perceptions of MALL in EFL Classes

2. Investigating the challenges that confront the embodiment of MALL
3. Studying the efficiency of MALL in students' academic writing
4. Examining the efficacy of MALL in assisting students' self-editing

#### **1.4 Research Variables**

The preliminary stage with its set of research provisions ranging from the observation of different written expression classes and from that of the focus group interview with the sample informants have appointed the controversy in using MALL in the classes of writing across first year students and their teachers. Subsequently, students not only shared their lack of awareness of the merits offered by mobile technologies but also have evoked the insufficiency in their metalinguistic awareness, named self-editing, whenever using them. Put together, the inconveniences that teachers have shared diverse challenges that could assure the commencement to experiment the inter-influence of the following variables.

**1.4.1 Independent Variable:** The use of MALL in EFL classes

**1.4.2 Dependent Variable:** students' self-editing in sentence writing

#### **1.5 Research Questions**

Articulated in the problem statement, the first main concern is to request,

1. What Effect does MALL exert on the students' efficacy of self-editing?

The following are leading sub queries that would envisage the phenomenon under investigation from different angles:

1.1 How do teachers and learners perceive the integration of MALL in the classroom?

1.1.1 To what extent teachers and learners are aware of the potential uses of MALL?

An exploration of the profundity of the main question, therefore, is probed into through the subsequent leading investigations.

1.2 What are the roles of teachers and learners when MALL is adopted?

1.3 What are the challenges that confront the implementation of MALL in EFL Classes?

### **1.6 Research Hypotheses**

As any psycholinguistic experimental research in SLA, the present work is designated to assess the impact of an isolated variable on the development of a FL or L2 performance (Bielska, 2011). Accordingly, the characterized methodology presupposes testing hypotheses ratiocinated from theory and in-milieu considerations.

To predict and rather establish an adequate understanding of the phenomenon and after introducing the research topic that is displayed in the research problem which, in turn, was carefully narrowed as introduced in the research questions, the hypothesized insights are constituted ahead.

#### **1.6.1 Alternative Hypothesis 1**

$H_A$ : There will be significant differences in the intact group's self-editing before and after the integration of MALL.

#### **1.6.2 Null Hypothesis 1**

$H_0$ : There will be no difference in the intact group's self-editing before and after the integration of MALL.

#### **1.6.3 Alternative Hypothesis 2**

$H_A'$ : The perceptions of their writing performance will be significantly different before and after the treatment, MALL, among the subjects.

#### **1.6.4 Null Hypothesis 2**

$H_0'$ : The subjects' perceptions of their writing performance will not be different before and after the treatment, MALL.

### **1.7 Research Rationale**

To begin with, the research relevance has been through different procedures to maintain its directness in terms of the careful securing of extraneous variables. For its implicative outcomes, the study proposes practical recommendations for pedagogues, university policymakers as well as faculty staff in the investment of the opportunities that both synchronous and asynchronous technologies offer. Displayed in the section of related studies, it has become widely shared that mobile devices provide an easier transfer of the information amid any other technologies. The utility of MALL goes equitable to the positive perceptions and attitudes that have been probed since the research preliminary phases across teachers and students.

### **1.8 Research Context and Design**

Prior to settling on a participatory action research, an endorsement has been reached between the theoretical TAM framework and the primary data obtained from the primary investigations. Thus, a quasi-experimental action design has been found compatible in securing the relativity of challenges in human behaviours. The conduct of this investigation has partaken first year students from the English language and literature department at Setif 2 University. The research preliminary population, at first, was to cover as much possible informants as the researcher could question, interview and observe. However, the thirty five (35) single-study subjects were found to represent convenience with the both the primary findings of the current work and the TAM framework which are to examine and resolve the intervening variables.

### **1.9 Research Limitations and Researcher's Assumptions**

The tools utilized in the data gathering may sound less objective for the reason that they target human behaviours in their actual sense of instability and sensitivity. Yet, research concepts could not have been positioned without the careful test and retest strategy maintained in this study. In addition to the test and retest method of reliability, inter-rater, parallel test form and internal consistency are the methods through which this research proves considerable validity. Otherwise, the research has been under a pilot study which could justify the issuing variable that necessitated a combination of qualitative and quantitative paradigms, which were in turn through piloting for a strict betterment of the tools. Such a mixed method approach has aggregated the triangulation of the data gathering procedures to designate the issuing categories among others. As far as the representativity of the sample is concerned, the case study was selected from a wider range of correspondents whose attitudinal stances were proven homogenous with those experimented in the sample; consequently, it is exclusively representative of the target population. Due to its hypothetical mode and the concepts that have been inaugurated in this research, replication of the enquiry would not, forcedly, be attaining identical outcomes which are due to the instability of provisions.

Regarding the researcher's assumptions, Manen (1990) see them as the substratum of the human self-reflective and science-oriented form of an action research while storing the pedagogical quality. Among others, he enumerated five major assumptions which have been symbolized along with the progress of the current research.

a. **Democracy assumption**

The researcher has made the participation be deliberate; hence, communication among the researcher or any other practitioners and informants is to be in full transparency. Either for

moral or pragmatic reasons, the partnership among the participants in such an action research could stick around as democratic.

b. External knowledge Assumption

The extracted framework in this research operates a variety of personal and social knowledge-based resources that could carefully picture the human conduct in its spontaneous occurrence. Therefore, a teacher is known to be an active classroom dweller that is to learn about whatever sort of change in students demeanours.

c. Reflection Assumption

One of the main objectives of the present work, as pointed out previously, is that of capturing the naturally existing challenges in the teaching and learning then advice clues that accord to the situation. Wherein, it is sought from this work to yield on elaborating reflective recommendations that would be of practicality inside and outside the classroom setting.

d. Change Assumption

It is assumed that an action research aims at bringing about an amendment to ameliorate a certain contextualized behaviour. For that reason, the researcher would strive for the demonstration of that change and then put on an adequate resolution of his and his classes' own pedagogical practices

e. Teacher-as-Researcher Assumption

Leading an action research, the teacher is assumed to be objectively reflecting students' behaviours then relocating proper remedies for the classroom refinement. Thus, the researcher is directly associated with understanding the problem in his classes and is to propose any modifications to improve the conditions of teaching and learning.

### 1.10 Research Delimitations

Under the conduct of a preliminary stage, the researcher has devised a longitudinal action research to monitor any potential influence among of the variables. Accordingly, the option of an action research is found enrooted in the Theory of Reasoned Action and compatible with its sub theory of TAM. The assignment of the study informants from the English language department at Setif 2 University was to be on the basis of an incidental sampling, for it serves the teacher-researcher action research design. Therefore, the selection of another group as a control would not seek commensurate conditions between the groups whatsoever. Given that, an A B A B single-subject design could dispatch a rigorous treatment of the research problem in its very context. This type of research designs has endured a course of a full year to satisfy all the stages of an action research from the initiation to the follow-up. All in all, the delimitation of this study have been set by the researcher to make the study manageable relevant to the problem under examination.

### 1.11 Glossary of Operational Definitions

**IT.** Abbreviation for Information Technology. Essentially, technology relating to information processing, i.e. computer technology, but see also ICT, C&IT, both of which describe the converging of information technology and communications technology. The term IT is rapidly being replaced by ICT in order to reflect the important role that information technology plays in communications by email, the Web, satellites and mobile phones.

**TELL.** Acronym for Technology Enhanced Language Learning. A term which is felt to embrace a wider range of uses of technology in language learning and teaching than the more common term CALL. TELL figured in the name of the journal of CALL Austria, *TELL&CALL* (now defunct), and was also adopted by the TELL Consortium (now

defunct), University of Hull. Information and communication technology (**ICT**). 'consists of all technical means used to handle information and aid communication, including both computer and network hardware as well as necessary software. In other words, ICT consists of IT as well as telephony, broadcast media, and all types of audio and video processing and transmission' (FOLDOC, cited by European Agency).

**Distance learning.** A way of learning where the students are situated geographically far from the institution where they are studying, so are not able to physically attend classes.

**E-Learning.** Electronic learning; applies to a wide scope of processes including Web-based learning, computer-based instruction, virtual classrooms, and digital collaboration. Content may be delivered in a variety of ways including via the Internet, satellite broadcast, interactive TV, and DVD- or CD-ROMs.

**Online Learning:** The use of the Internet to follow a course that usually results in the award of a diploma or certificate. Closely associated with the concept of E-learning, which often - but not necessarily - implies some form of *online learning*, i.e. using Email and the World Wide Web. E-learning, i.e. electronic learning, is a broader term, embracing the use of ICT in general in teaching and learning as well as online learning.

**Blended Learning.** This term normally refers to combining Internet-based *distance learning* with face-to-face tuition but it may also be used to describe combining offline ICT based materials with more traditional materials, such as books, audiocassettes and videocassettes. M-Learning

**MALL.** Abbreviation for Mobile Assisted Language Learning (MALL) describes an approach to language learning that is assisted or enhanced through the use of handheld mobile devices such as smartphones such as the iPhone and tablet computers such as the iPad. MALL enables

students to access language learning materials and to communicate with their teachers and peers at anytime, anywhere.

**M-learning, Mobile learning.** Any kind of learning using portable electronic devices such as smartphones, tablets, MP3 players and laptops, usually through the Internet and coupled with mobile learning software and apps, and sometimes interacting with teachers and other learners in real time.

**Smartphone.** an advanced mobile phone that offers a wide range of applications. In addition to functioning as a mobile phone smartphones can be used as a media player, a camera, a GPS navigation device and a Web browser - and in many other ways.

**CALL.** Abbreviation for Computer Assisted Language Learning. A term which came into favour in the early 1980s, replacing the older term CALI (Computer Assisted Language Instruction). Often associated (wrongly) with an old-fashioned approach to the use of ICT in language learning and teaching, but the leading professional associations, i.e. EUROCALL, CALICO and IALLT, interpret CALL as meaning the use of computers in the learning and teaching of foreign languages in the broadest sense, from the use of word-processors to the use of the Internet.

**Moodle.** An open source software platform originally developed in Australia by programmer Martin Dougiamas, but now in use throughout the world.

**Web 2.0.** Web applications that facilitate interactive information sharing, interoperability, user-centred design, and collaboration on the World Wide Web. Examples of Web 2.0 include social-networking sites, blogs, wikis, video-sharing sites, hosted services, web applications'.

The term 'Web 2.0' can be traced back to Tom O'Reilly and the O'Reilly Media Conference in 2004 (2).

**Virtual classroom.** An online environment where students can have access to learning tools any time. Interaction between the instructor and the class participants can be via e-mail, chat, discussion group, etc.

**Collaborative Writing.** A process that involves the creation and editing documents using Web 2.0 tools designed for use by multiple authors, e.g. Google Documents or Zoho Writer. Such tools look, act and feel like normal word processors, but simplify the process of sharing and viewing documents.

**Student-centred learning.** Method of teaching where the needs and interests of the students receive priority and the teacher's role is "facilitator".

**Informal learning Learning.** resulting from daily activities related to work, family or leisure. It is not organised or structured in terms of objectives, time or learning support. Informal learning is in most cases unintentional from the learner's perspective. It typically does not lead to certification.

**Autonomous Learning.** When a learner can set his/her own aims and organise his/her own study, they are autonomous and independent. Many activities in course books help learners to be more independent by developing learning strategies and focusing on learner training.

**Writing.** one of the four language skills, writing is the "output" or productive skill associated with written language.

**Top-down and Bottom-up.** Starting from the SENTENCE as a whole and working down to the smallest parts of it, versus starting from the smallest parts and working up.

**Error.** A mistake that a learner makes when trying to say something above their level of language or language processing. A developmental error is an error made by a second language learner which could also be made by a young person learning their mother tongue as part of their normal development, e.g. I goed there last week (I went there last week). A fossilised error is an error that has become a permanent feature of a learner's language, the error has become a habit. Fossilised errors cannot easily be corrected. When a learner makes a slip they make a language mistake but they are able to correct themselves.

**Error analysis.** Identifying and analysing errors made by learners and their possible causes. This evidence is used to judge where the learner is in the learning process, what language learning strategies learners are using, and to suggest where and how improvement may be made. So, in this procedure, samples of learner language are collected and the errors are identified, described, and classified according to their hypothesized causes. The errors are then evaluated for relative seriousness.

**Feedback (n., v.), give / provide feedback.** The response learners get when they attempt to communicate. This can involve correction, acknowledgement, requests for clarification, backchannel cues (e.g., "mmm"). Feedback plays an important role in helping learners to test their ideas about the target language. 1. To tell someone how well they are doing. Teachers might give learners feedback at a certain point in the course, or after an exercise that learners have just completed. In addition, learners can give feedback to teachers and teacher trainers give feedback to trainee teachers. 2. To communicate to a speaker that you understand (or not) what they are saying.

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**LINGUISTICS GLOSSARY,**

Some terms used in linguistics, language studies, language teaching and SLA research. Based on V.J. Cook (1997), *Inside Language*, V.J. Cook (2004) *The English Writing System* and V.J. Cook & D. Singleton (2014), *Key Topics in SL*. Available at:

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**1.12 Organisation of the Thesis**

The present work is comprises five chapters where the researcher went deductively towards the initiation of the problem to the adoption of a suitable methodology to the arrangement of the experiment and the analysis of its findings.

To begin with, the general introduction is the chapter that juxtaposes the main concepts leading this research. From the excerpt background of the study, the researcher illustrates the theoretical back up that concerns the inclusion of mobile technologies in the language instruction stream. The statement of the problem has derived from both the theoretically introduced claims to the practically manifested procedures of investigation by means of which hypotheses have been drawn to advocate the derived research queries about the utility of MALL in fostering students' self-editing at Setif 2 University.

The literature review is an extract of the mostly associated theories and beliefs the research problem area. This part is put in two successive sections to maintain the deductive

flow of the current work as to provide a thick understanding of the issue under scrutiny. The first section consisted of the allocation of MALL among the ICT world and how was it conceived in the literature. Otherwise, the second went to specify the possible efficiency of MALL that served the EFL writing and self-editing precisely.

Third is an illustration of the adopted methodology through which this research could be accomplished. To do so, rationalisations of adopting a certain method have been exhibited and additional concepts have detailed what has been mentioned in the introductory chapter.

Further, the analysis and discussion of the derived findings were completed in the fourth chapter. It is here where the researcher shared his experience with the single-subject experiment where he had to systematically secure any related factors and provide an objective reasoning for the descending outcomes.

Eventually, an overall argument of the major conclusions led by the on-going research questions was displayed in the fifth chapter. Together with this, a set of recommendation for practice have been implied to make a valid implementation of MALL, its efficiency in self-editing, and its hampers that are to be firmly controlled.

## CHAPTER TWO: REVIEW OF THE LITERATURE

## A- Allocating MALL among the ICT World

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## **Allocating MALL among the ICT World**

### **2.1.1 Introduction**

In the past, the cost of computers and courseware greatly restricted the use of computers in education. Now, however, regardless of the cost, computers and courseware are becoming important tools for learning in institutions. Indeed, in the polytechnic, considerable pressure is being put on the English language lecturers to make use of the courseware marvels in their lesson as the cost of the courseware is rather expensive. With the use of the courseware in the English language classroom in the polytechnic, and, with the integration of ICT in the teaching of the subject, it is important to ensure that the courseware really supports the students' learning as a learning tool; and whether the use of courseware is benefit for a long term investment for the polytechnic. English language lecturers cannot simply assume that the techniques, approaches and strategies that worked well in the traditional learning environment of the classroom can simply be successfully used in the environment of the ICT. The use of mobile phones and other portable devices is beginning to have an impact on how learning takes place in many disciplines and contexts, including language learning. Learners who are not dependent on access to fixed computers can engage in activities that relate more closely to their current surroundings, sometimes crossing the border between formal and informal learning. This creates the potential for significant change in teaching and learning practices. Taking the broader field of mobile learning as the setting within which developments in mobile-assisted language learning may be understood, the paper argues that an emphasis on mobility can lead to new perspectives and practices. The paper offers reflections on what mobile learning has to offer and considers whether it is likely to change how languages are taught and learnt. 'Mobile learning' is not a stable concept; therefore its

current interpretations need to be made explicit. Examples of current projects and practices show an affinity between mobile and games-based learning, and can further illuminate what is distinctive and worthwhile about mobile learning. ( KUKULSKA Hulme, 2009)

Despite using computers, mobile devices are seen to have proven as potential tools in increasing the learning of the language. At present, technology in the language classrooms has been noted for improvement of speaking, writing, listening, and reading skills (Zurita & Nussbaum, 2004). Thus, technology is essential for enhancing students' achievement, engagement, and overall participation in language learning (Cobb et al., 2010). Furthermore, technology also provides students unlimited access to different resources and tools that facilitate language learning. In English language teaching and learning, Computer-assisted Language Learning (CALL) and Mobile-assisted Language Learning (MALL) are the predominant areas which reflect the adoption of technology to support English language learning. Both CALL and MALL have impacted language acquisitions which distinguish between a modern language classroom and a traditional language classroom in the teaching and learning of English language.

### **2.1.2 Depicting MALL Technology in Applied Linguistics and TEFL**

The influence of ICT in education has been acknowledged in various studies for its efficiency in making the teaching motivating and meaningful, as it enhances students' engagement and achievement when learning (Cobb et al., 2010 and Chapelle, 2001).

Therefore, the unlimited access to knowledge about languages has been a facilitative factor of the english language learning. In the language classes, Zurita and Nussbaum (2004) put forward that the increase of computers and portable technologies led to an increase in the learning of the language and the improvement of its major skills. Together with CALL, MALL

has traced a considerable distinction between the new ways EFL teaching and learning and traditional ones across the fields of language acquisition.

About the effect of those technologies in Second Language Acquisition (SLA), Li and Hegelheimer have manifested the idiosyncrasy of the inter-language in their Grammar Clinic program. This web-based program has paired the concepts of Krashen's (1985) Input hypothesis and Swain's (1995) Output Hypothesis to demonstrate that the cycle of learning departs from the interaction of input to feedback. This idea has been invested by Gass and Mackey (2007) to become usefully manipulated with both computers and mobile technologies.

According to Fairclough (1996) through his chapter Technologisation of Discourse, the analysis of discourse should to consider the ever changing circumstances of texts. In a book of Text and Practices in critical discourse analysis (Caldas-Coulthard and Coulthard, 1996), Fairclough has triggered the emergence of discourse technologists, as he expanded on a notion of discourse technologisation as a contemporary discourse that is distinct from its traditional orders.

Contemporary orders of discourse are, I think, becoming deeply and distinctively affected by what I want to call a technologisation of discourse, whose central and defining characteristic is the embodiment in institutional forms and practices of circuits or networks which systematically chain together three domains of practice: research into the discursial practices of workplaces and institutions, design of discursial practices in accordance with institutional strategies and objectives, and training of personnel in such designed discursial practices. (ibid, p71)

Bases on Hegel's notion of dialectical communication, greater conceptual understanding (King and Honeybone, 1996) is led by the new means of dialogue as a key to

language learning; the one that could be well generated through technological means which are seen to assure a constant interaction. In that vein, Harvay et al. (2009) opine that each means requires different rules of discourse and interaction particularly when implementing new communication technologies.

The field of SLA in the last decades has known the emergence of one of the technological programs of Automatic Speech Recognition (ASR) which is the Computer Assisted Pronunciation Training (CAPT) (Hansen, 2007). This ASR-based program became recognized of its expansion of the learning time, its provision of self-paced materials and its division as a corrective feedback tool on students' errors in pronunciation.

According to Wible (2005) there exists a gap between the theories of SLA and FLL which could be cured through the insightful consideration of the massive resources that TELL offer. Yet, the author has gone on saying that issues related to certain external and internal variables in SLA such as L1 background, input and the learners' learning differences and other issues related to the cognitive aspects like awareness, salience, elaboration and rehearsal can all be optimized by means of the e-learning technologies.

From a social and cultural view, Beetham and Sharp (2007) reveal that technology is more than being but a means though what people; rather, it shapes an effective pedagogy that draws attention to the social habits and practices. Based on the point that learning is social and active, Farely et al. (2015) insists that the informal learning in or out of the classroom setting that is devised by the mobile technology is proving soundness as the proper method for engaging students in real world problem solving practices. In her recent trial to illustrate the extent to which smartphones could be utilized as a social constructivist pedagogical tool, Lötter (2019) could transfer what she named meta-theoretical explanations about the

epistemology of those tool in supporting the problem solving in the pedagogy. Otherwise, concepts like comprehensible input, negotiation of meaning and comprehensible output have been said to be retained through the properties of mobiles by dint of internet searching and decontextualized dialogues among learners and their teachers and peers (Nah, White, and Sussex, 2008).

As put forward by Ellis (2008), SLA approaches and theories which could more or less be subsumed under the notions of collaborative learning, situated learning, learner versus activity-centred learning, interaction, input versus output as well as sociocultural theories become envisioned from the two technological lenses of CALL and MALL.

### **2.1.3 Integration of MALL and Related Models of Psychology**

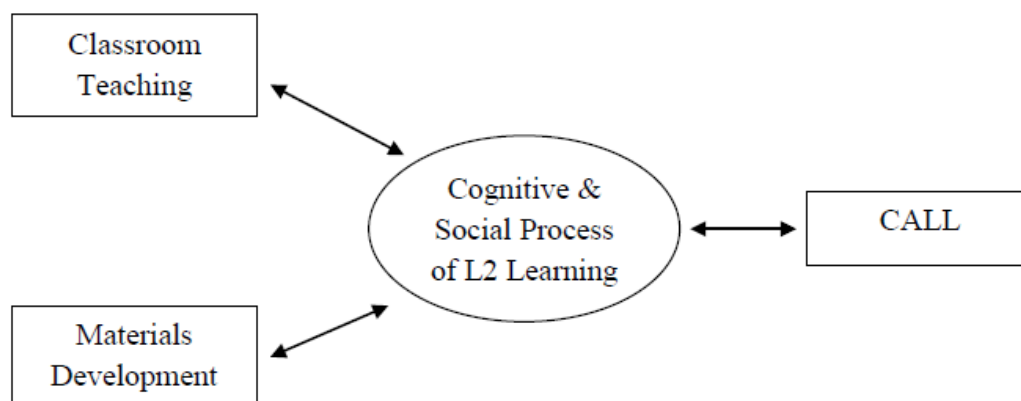
Six theory-based categories have been sorted out from an extensive review in the literature of m-learning psychology, as cited in Herrington et al. (2008). Each of those activities is theory-based and assists in one way or in another in the enhancement of learners' behaviours. Accordingly, the behaviourist theory suggested activities that ameliorate the process of learning as a change in actions and observable behaviours; this could be demonstrated through using systems of feedback. Besides, the constructivist theory proposes activities wherein students actively construct newer concepts and ideas on the basis of the background or current knowledge. In this case, the use of mobiles' instructional media such as animations and video documentaries and situated learning activities, on the other hand, sustain the authenticity of the multimedia tools used and the incorporation of contextual practices for the target culture. In the fourth place came the collaborative learning activities which promote learning from the social interactions; in this concern, PDAs have been said to constantly relate

students with their teachers and peers. Fifth, the lifelong or the informal learning indicates decontextualized activities that reinforce learning apart from its formal settings and curriculum.. According to the authors (Naismith et al., 2004), this can be ensured through the use of audio-visual materials and text images to students' PDAs. Eventually, learning and teaching sub theories advocate practices that aid in the coordination between students and the technological resources for learning (Naismith et al., 2004; cited in Herrington et al., 2008)

Studies have been underscoring the effectiveness of Web 2.0 technologies in promoting students' critical thinking (Matheson, 2004; Ducate and Lumicka, 2005; Reardon, 2005). Wherefore, both synchronous and asynchronous technologies, such as blogs, are conceived of having renewed the field of foreign language education. That being the case, Mcleod (2001) contends that blogging provides wider opportunities for learners to carry on monitoring each other, as it assist both teachers and learners to grasp novel concepts that inspire the connections between the known and the unknown. This prolongation offer of a virtual learning has permitted an expansion of the language familiarity among the classroom participants.

Regards to autonomous learning have succinctly sprung from that brand of education (Anderson and Garrison, 2003); moreover, a defining feature of first-generation technology is the maximization of freedom and independence for students." (Ibid., p. 36). In addition to this, the authors have tackled some of the major properties of distance learning with its favour of asynchronous and synchronous human interaction and through its combination of cognitivism and mass media technologies. Per se, this was the standpoint of Chapelle (2003) where he outlined the overlap that is driven from the main patterns of the traditional and modern knowledge construction modes.

**Figure 2.3:** The Relationship between Knowledge of Classroom Teaching and Knowledge of CALL



(Chapelle, 2003: 39)

*Figure 1. The Relationship Between Knowledge Of Classroom Teaching And Knowledge Of Call*

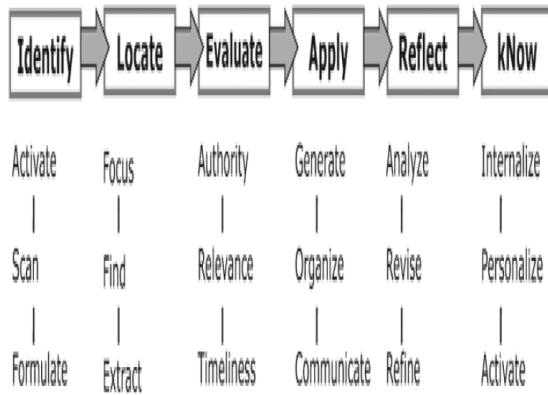
As exhibited, the classroom teaching with its materials considering the cognitive and social features of second language learning can all be merged in the actual dominance of CALL. Thus, the model is recognised to maintain the educational components of teaching and learning as being entirely flexible and decontextualized.

### 2.1.3.1 I-LEARN

The I-LEARN model, as declared by Neuman (2011), is an offer that makes “explicit the essential link between information use and learning both within and beyond current instructional practices... the model focuses directly on learning with information literacy” (p. 87). The latter is about the ways of how to locate and access appropriate resources of information. This leading acronym stands for Identify, Locate, Evaluate, Apply, Reflect and

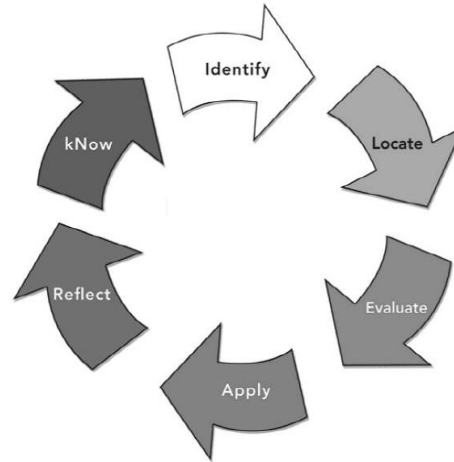
kNow. Throughout this model, Neuman has deciphered how six stages and eighteen sub-stages could, said elements, amalgamate in a recursive rather than linear way for they interweave and twist as appended in the Figures below.

Figure 2.6: I-LEARN Stages and Elements



(Neuman, 2011: 97)

Figure 2.5: The I-LEARN Model



(Neuman, 2011: 88)

Figure 2. The I-Learn Model

Figure 3. I-Learn Stages And Elements

The model is an endeavour that can be likened to Bloom’s Taxonomy, as it illustrates how is the information identified, how it is mentally located and how can its sources be evaluated of being relevant and valid then how to apply it through the three sub stages; next, how can that information be reflected for it to be eventually known and reactivated.

The letter “I” that initiates the acronym is said to not be only restricted to the stage of “Identify” but also goes to reach other concepts. Based on the authors assumptions of the constructivist learning theory, the “I” turns to get ones’ way of learning “to create own understanding of the world” (ibid., p.97); likewise, it intends to reflect the independence of the information. It is apparent from the figures that the last sub stage of “kNow”, activate, happens

to become the first element the “Identify” stage which, thus, retains the recursive feature of this model for its audience to I-LEARN.

Through that being mentioned, Neuman has stressed on the necessity teachers’ roles in joining students’ habits of mind with the world as a containant of the information to authorise them to live in such a digital milieu. Hence, she has advocated that the I-LEARN can “... help learners to develop a habit of mind that sees the world as an all-encompassing source of information that human beings can access, evaluate, and use to solve problems and improve lives. That habit is the cornerstone of independent, lifelong learning in a world brimming with information and with possibilities.” (Ibid., p. 114).

#### **2.1.3.2 Self-Regulated Learning**

The scope of self-regulated learning is identified as the process of an independent learning that helps learners to manage their thoughts, behaviours and emotions in their activities of learning (Roberts et al., 2011); therein, students become directed towards the acquisition of new information or skills. In that pace of the technological efflorescence, Ifenthaler et al (2010) pinpoint that students are regulated to actively construct their own knowledge. Accordingly, such self-regulated learners are perceived to proactively plan and set their goals, be self-motivated, control their attention, self monitor and self-evaluate their learning strategies (ibid); in other words, they own their learning and are aware of when feedback is needed.

#### **2.1.3.3 SOLE Learning**

This model of Self-Organised Learning Environments has been developed from Mitra’s (2006) earlier ‘hole in the wall’ experiments that was carried out in India between 1999 and 2006. Sugata Mitra, the issuer of the SOLE project is an Indian computer scientist, a

2013 TED Prize winner, and a professor of educational technology at the Newcastle University. From his talk in TED2 (2013), his idea was commenced when he and his colleagues installed a computer with a hidden around camera on a wall in New Delhi to record childrens' behaviours when playing with it. The figure below is a picture that documents the inauguration of the experiment in one of the poor villages as credited to Cary et al. (2014)

**Figure 2.1:** "Hole in the Wall" Experiment in New Delhi Slum



(Cary et al., 2014: 2)

*Figure 4. Hole in The Wall Experiment In New Delhi Slum*

After a longitudinal observation of children in India and other countries in the world, it has been deduced that learning can take place without any formal training and without any intervention adults or teachers. That spontaneous creativity of an unexpected learning was characterised of 'openness and flexibility' (Mitra et al., 2005, p. 3); thus, learners can manage their self-organised learning environments.

#### **2.1.3.4 BYOD**

Instead of having Higher Education Institutions (HEIs) as responsibly being the sponsor of educational technology kits, the idea of Bring Your Own Device as provisioned by

Hockly (2012) denotes that students could make use of their own technological devices for their classes. Being portable, students can bring their own laptops, tablets smartphones or any mobile technology during class times. Having that said,

Implementing a BYOD approach does not mean the lone teacher who occasionally gets students to use their mobile phones to look something up online or to consult their mobile phone dictionaries during class. A BYOD approach means a school explicitly implementing a policy of relying on student-owned technology, and providing the necessary support, infrastructure and evaluation to measure its efficacy (ibid., p.44).

With a solid infrastructure, faculty members and teachers are the first to be invited to resort to the enhancement of students' sense of responsibility towards learning and associated problem solving skills by dint of BYOD.

#### **2.1.4 Teachers' and Students' Roles in MALL Flipped Classrooms**

The actual modes of classroom learning are inevitably suiting certain sort of blended instruction. The term "flipped" moves out some activities that students and teachers could accomplish on the go or on their preferred setting; yet, the formal setting of classroom practices is as well maintained to foster those virtual instructions through front-of-the class collaborative learning. Furthermore, Martin (2011) defines the flipping of the instruction as when,

...students watch and listen to your lectures... for homework, and then use your precious class-time for what previously, often, was done in homework: tackling difficult problems, working in groups, researching, collaborating, crafting and creating. Classrooms become laboratories or studios, and yet content delivery is preserved (ibid).

The flipped classroom places more interest and responsibility on the part of learners, as it promises them flexibility and impetus in the process of learning. Displayed subsequently,

Zappe et al. (2009) have summarised the major practices of both students and teachers when acting in a flipped classroom.

Table 1

*Teachers' and Students' Roles in MALL*

| For students   | For teachers   |
|--|--|
| Learn at their own pace  | Work closely with students in the classroom            |
| Engage concepts with peers   | Improve student attitudes                              |
| Frustration levels remain low  | Teachers can group students together                   |
| Particular benefit to those students whose personality types and preferred learning styles impair their performance in traditional educational environment | Improve students' ability to solve open-ended problems |

In some way, this table introduces the roles of teachers and learners which by turn showcases the type of the relationship that assembles those two actors in a flipped classroom. A positive teacher-student relationship, as drawn by Partin (2009) would ascertain a stable foundation for effective instruction and constructive classroom management to take place.

Teachers' role in such semi-formal classrooms "branches off to directing instruction and eliciting communication which, in turn, affects learners" (Gorham et al., 2009, p. 4); that is, instructors are mainly assignment-directors and elicitors of interaction between students and their peers for socialisation. Added to this, distinct ancillary teacher roles may cater for learning facilitation such as embodying the speaker, the moderator, the trainer, the manager, and the coordinator (ibid). As stated by Burden and Williams (1997), teachers are expected to be circumspect to any repercussions of the communicative exchanges between learners for the sake of consolidating their sense of belonging. Otherwise, teachers are perceived to get along with a set of functions; namely, they should be subject matter experts, technologist designers, social facilitators, and reflective practitioners as the online fabric remodels them (Goodyear et al., 2001; Anderson & Garrison, 2003; Hampel & Lamy, 2007). In this way,

students as educational technology users would better be led towards how to be efficient time managers, autonomous learners. To englobe all these roles, Berry et al. (2013) have introduced the term “teacherpreneurs” to enclose the multifaceted areas wherein teachers act as entrepreneurs in their classrooms. Consequently, they incubate all their milieu with all the possible provisions to implement compatible practices alike enterpreneurs.

On the other extreme, roles of students are said to turn more as dynamic participants in flipped classrooms. By then, they can even contribute in the learning operation which imposes the to become researchers and in some situations lesson designers ( Harvay et al., 2009). Either digital natives or digital immigrants, Neuman (2011) stressed on students’ candidacy of being citizens of the actual age of information.

“individuals must be skilled managers of all the information-rich environments that surround them...They must be able to access, evaluate, and use various kinds of information as the basis for learning across the full spectrum of human knowledge. In other words, they must be information literate” (ibid., p. 85).

Learners’ roles can shift according to the activities in which he or she is included in; however, three essential roles are enumerated by Ó Murchú (2005). Amidst thse he mentioned self-learner role, team member/collaborator role, and knowledge manager/leader role. As for the former, self-learner can select his/her own tech-devices in their personal preferences of having wider range of sources of feedback which can mainly be the collaboration with peers. Otherwise, the team member role is that of social interactive element who is actively involved in multimedia activities that allow them to be virtually collaborative. Living in a technologically-advanced society, students are knowledge managers who can lead

the information and consult any subject-related issues with the use of electronic material which are at any cost affordable.

As a consequence, flipped classrooms have endorsed the up-to-date measures of leaning that considerably evoked a mutual recognition and confidence between the teachers and their students. As a result, both of them would consecrate their formal setting as remedy for the clues that they established virtually to advocate the modern patterns of learning.

#### **2.1.4.1 Classroom Centeredness in M-learning**

M-learning environments are mentioned to sustain collaborative learning through the synchronous and asynchronous communication tools that make students turn into initiators of the learning process then leaders of those instructional communications. In this line, Comas-Quinn, Mardomingo and Valentine (2009) argued that thanks to the characteristics of the mobile technologies that the classroom turned to foster collaborative and student-centered learning in which interaction is naturally stimulated among fellow learners and guided by their instructors. Similarly, mobile devices are basically personalised communicative tools by means of which students can be provided with a customized assistance on the time and pace that suit their level (Nah, White, & Sussex, 2008). Instead of having teachers said and led it all, present classrooms are succinctly oriented towards responsabilising the student in the process of learning. As a consequence of facts, Arends and Kilcher (2010), identifies the learners as the axis of nowadays education where the instruction became underpinned by their needs and options of learning. Teachers, therefore, maintain adequate behaviours and keep socialising students with the knowledge to be practiced in real-world contexts.

### **2.1.5 TELL: A Shift from the E-Learning to the M-Learning**

With regard to access to computers, large-scale one-to-one computing programs have been implemented in many countries globally (Bebell and O'Dwyer, 2010, Fleischer, 2012, Zucker and Light, 2009), such that elementary- and middle-school students and their teachers have their own mobile devices. In addition, in terms of promoting innovation in education via information technology, not only does mobile computing support traditional lecture-style teaching, but through convenient information gathering and sharing it can also promote innovative teaching methods such as cooperative learning (Lan et al., 2007, Roschelle et al., 2010), exploratory learning outside the classroom (Liu, Lin, Tsai, & Paas, 2012), and game-based learning (Klopfer, Sheldon, Perry, & Chen, 2012). Therefore, mobile technologies have great potential for facilitating more innovative educational methods. Simultaneously, these patterns in educational methods will likely not only help subject content learning, but may also facilitate the development of communication, problem-solving, creativity, and other high-level skills among students (Warschauer, 2007). increasing computer accessibility, diverse teaching styles, and academic performance, currently researchers found mixed results regarding the effects of mobile-devices (e.g., Warschauer, Zheng, Niiya, Cotten, & Farkas, 2014), and very few studies have addressed how best to use mobile devices, and the effectiveness of doing so.

Mobile computers have gradually been introduced into educational contexts over the past 2 decades. Mobile technology has led to most people to carry their own individual small computers that contain exceptional computing power, such as laptops, personal digital assistants (PDAs), tablet personal computers (PCs), cell phones, and e-book readers. This large amount of computing power and portability, combined with the wireless communication

and context sensitivity tools, makes one-to-one computing a learning tool of great potential in both traditional classrooms and outdoor informal learning.

Wong and Looi (2011) investigated the influence of mobile devices on seamless learning. Seamless learning refers to a learning model that students can learn whenever they want to learn in a variety of scenarios and that they can switch from one scenario or one context to another easily and quickly (Chan et al., 2006, Wong and Looi, 2011). Wong and Looi (2011) selected and analyzed a sample of 54 articles on the use of mobile devices to facilitate seamless learning, and found that all 54 articles contained 10 features, including formal and informal learning, personalized and social learning, and learning across multiple durations and locations.

M-Learning allows a method of educational delivery that could be more cost-effective than E-Learning methods, not to mention that the ubiquity of mobile phones means that many people are already familiar with mobile phone applications (Motlik, 2008).

“The term online learning (or, as it is sometimes called, distance learning) includes a number of computer-assisted instruction methods ... Online teaching and learning is faculty-delivered instruction via the Internet. Online instruction includes real-time (synchronous) and anytime, anywhere (asynchronous) interactions.” (A. & Poe, 2002: 5) Therefore, in response to the increasing propensity for online education, designers attempt to answer with, for example, e-books, virtual simulations and 3D holograms, podcasts, wikis, blogs, MOOCs, smart-mobile devices, applications, etc (Bonk & Kim, 2006: 22).

As Shield and Kukulska-Hulme have pointed out in the editorial to that issue, there are important differences between CALL and MALL; in particular, mobile technology can assist learners at the point of need and in ways that fit in with their mobile lifestyles. Receiving text

messages to support learning outside of class hours, assuming the messages are wanted, is one way in which learners are benefiting from their teachers' experimentation with mobile technology. Podcasting and mobile blogging are also technologies that are not difficult to understand and are beginning to make a mark on language learning.

As mobile technology becomes increasingly pervasive, we can expect to see more examples of language learning being integrated with everyday surroundings. Beaudin et al. (2007) have explored the use of ubiquitous sensing in the home for "context sensitive micro learning" of vocabulary on a mobile device. Built-in and stick-on sensors detected participants' interactions with objects, furniture, and appliances in the home; this triggered the audio presentation of English and Spanish phrases associated with the use of those objects. There are some obvious limitations to how much learning can be done in this way, but a personalized version of such a system might well find a place among other methods of language learning or revision. Home-based learning, enhanced by technology, certainly holds some potential for future language learning. It can be seen in the work of Fallahkair, Pemberton and Griffiths (2007) on living-room-based language learning, making use of a mobile phone to enable a private and personal learning experience from television programmes watched in an everyday social setting.

Movement from E-learning to M-Learning: It is a long-time project that aims to create a learning environment for wireless technologies by developing course materials for range of mobile devices (Colazzo et al., 2003). Laouris & Eteokleous (2005) made some comparisons between e-learning and m-learning, and they try to foresee the future of m-learning and the methods and technologies that should be used for successful m-learning.

Similarly, Mostakhdemin-Hosseini & Tuimala, (2005) believe that mobile learning can be considered as a natural evolution of e-learning, completing a missing component of the solution (i.e. adding the wireless feature). The transition from the e-learning to m-learning can be argued and identified by a change of terminology. For example, the dominant terms in the e-learning era were: multimedia, interactive, hyperlinked, media-rich environment (Laouris & Eteokleous, 2005). In the m-learning milieu, Laouris & Eteokleous (2005) assert terms such as intimate, situated, informal, connected, lightweight, private, spontaneous, and personal to characterize the context. While Table 1 compares and contrasts the choice of terminology with underlying characteristics of the two types of learning environments, Table 2 demonstrates their differences in the context of pedagogy and environment.

Table 3 represents the differences between e- and m-learning environments with respect to modes of communication. While e-learning was compatible with the classroom paradigm, m-learning calls for environment- and time independent pedagogy (Laouris & Eteokleous, 2005).

Table 2

*Terminology Comparisons Between E-And M-Learning*

Table 3

*Pedagogical Differences Between E- And M Learning Environments*

Table 4

*Differences Between E-And M Learning Environments With Respect To Modes Of Communication*

TABLE 1  
TERMINOLOGY COMPARISONS BETWEEN E-AND M-LEARNING

|                     |   |
|---------------------|---|
| e-learning          | m-learning                                  |
| Computer            | Mobile                                      |
| Bandwidth           | GPRS, Bluetooth                             |
| Multimedia          | Objects                                     |
| Interactive         | Spontaneous                                 |
| Hyperlinked         | Connected                                   |
| Collaborative       | Networked                                   |
| Media-rich          | Lightweight                                 |
| Distance learning   | Situated learning                           |
| More formal         | Informal                                    |
| Simulated situation | Realistic situation                         |
| hyper learning      | Constructivism, situationism, collaborative |

Taken from Laouris & Eteokleous (2005)

TABLE 2  
PEDAGOGICAL DIFFERENCES BETWEEN E-AND M-LEARNING ENVIRONMENTS

|  |   |
|--|---|
| More text- and graphics based instructions | More voice, graphics and animation based Instructions |
| Lecture in classroom or in internet labs   | Learning occurring in the field or while mobile       |

(Taken from Laouris & Eteokleous, 2005)

TABLE 3  
DIFFERENCES BETWEEN E- AND M-LEARNING ENVIRONMENTS WITH RESPECT TO MODES OF COMMUNICATION  
A) INSTRUCTOR TO STUDENT COMMUNICATION

|                       |                       |
|-----------------------|-----------------------|
| Time-delayed          | Instant delivery      |
| Passive communication | Instant communication |
| Asynchronous          | Synchronous           |
| Scheduled             | Spontaneous           |

B) STUDENT TO STUDENT COMMUNICATION

|                                       |   |
|---------------------------------------|---|
| Face- to- face                        | Flexible                                  |
| Audio-teleconference common           | Audio- and video- teleconference possible |
| Private location                      | No geographic boundaries                  |
| Travel time to reach to internet site | No travel time                            |

(Adopted from Laouris & Eteokleous, 2005)

Whereas in traditional models of education the goal is the transfer of knowledge from teacher to student, mLearning empowers students to actively participate in the learning process to make it a process of construction and not mere instruction (dela Pena-Bandalaria, 2007).

Yamaguchi (2005) recapitulates: "A computer is better than a mobile phone for handling various types of information such as visual, sound, and textual information, but mobile phone is superior to a computer in portability. And some students don't have their own computer" (p. 57). So, while m-learning in general and MALL in particular have clear challenges and limitations, the paucity of applications and formal research will indubitably

proliferate. Colpaert (2004) observes that in the history of CALL, periods of professional development have been followed by periods of amateur development—coincident with periods of hype—by teachers and researchers, and further portends that "if this prevails, the mobile hype will burst out as soon as tools become available allowing teachers and researchers to develop their own mobile applications and tools" (p. 262). Still, humankind is not likely in the immediate future to reach the state of Salmon's (2003) Planet Nomadic, where "terrestrial universities and corporate training facilities have disappeared" (p. 141) and wearable devices "help to pace the learners...through their courses" (p. 142). But it does seem quickly headed for a world where m-learning is a fashionable channel for language study.

To date, online learning and CMCL have been interchanged with a collection of other acronyms.

Table 5

*Acronyms In Computer-Assisted Language Learning*

**Table 2.1: Acronyms in Computer-Assisted Language Learning**

|  |
|--|
| <b>CALI</b> Computer-Assisted Language Instruction       |
| <b>CALL</b> Computer-Assisted Language Learning          |
| <b>CELL</b> Computer-Enhanced Language Learning          |
| <b>CBLT</b> Computer-Based Language Teaching             |
| <b>CMC</b> Computer-Mediated Communication               |
| <b>ICALL</b> Intelligent CALL                            |
| <b>MALL</b> Mobile technology-Assisted Language Learning |
| <b>NBLT</b> Network-Based Language Learning              |
| <b>TELL</b> Technology-Enhanced Language Learning        |
| <b>WELL</b> Web-Enhanced Language Learning               |

(Hampel & Lamy, 2007: 8)

M-Learning thus represents learning that is not 'just-in-case,' education for the sake of producing a bank of knowledge, but rather represents learning that is 'just-in-time,' 'just

enough,' or 'just-for-me' (Traxler, 2007, p. 5). As a facilitator of new learning, M-Learning goes beyond an emphasis on the possession of information to enabling learners to find, identify, manipulate, and evaluate existing information (Brown, 2003, p. 2).

## **2.1.6 Typology of Modernised Learning**

### **2.1.6.1 D-Learning**

The electronic Gartner IT Glossary defines digitalisation as: “The use of digital technologies to change a business model and provide new revenue and value-producing opportunities; it is the process of moving to a digital business.” In other words, it is the process by which life aspects make more use of digital means and tools.

**Digital Natives.** Those whom the “major aspects of their lives—social interactions, friendships, civic activities—are mediated by digital technologies. And they have never known any other way of life” (Gasser & Palfrey, 2008 p.2). They are also characterised as: “The young people becoming university students and new entrants in the workforce, while living much of their lives online, are different from us along many dimensions. Unlike those of us just a shade older, this new generation didn't have to relearn anything to live lives of digital immersion. They learned in digital the first time around; they only know a world that is digital.” (Ibid., p. 4)

For digital natives, learning is mediated by technological tools. Gasser and Palfrey adduce:

“For these young people, new digital technologies—computers, cell phones, sidekicks—are primary mediators of human-to-human connections. They have created a 24/7 network that blends the human with the technical...” (Ibid., p. 4)

**Digital Settlers and Digital Immigrants.** Gasser and Palfrey illustrate:

“Digital Settlers” though not native to the digital environment, because they grew up in an analog-only world have helped to shape its contours. These older people are online, too, and often quite sophisticated in their use of these technologies, but they also continue to rely heavily on traditional, analog forms of interaction. Others less familiar with this environment, “Digital Immigrants,” learned how to e-mail and use social networks late in life.” (Ibid., p. 3-4)

#### **2.1.6.2 E-Learning**

It refers to the use of Internet technologies to deliver a broad array of solutions that enhance knowledge and performance. It is based on three fundamental criteria:

1- E-Learning is networked, which makes it capable of instant updating, storage/retrieval, distribution and sharing of instruction or information...

2- It is delivered to the end-user via a computer using standard Internet technology...

3- It focuses on the broadest view of learning solutions that go beyond the traditional paradigms of training ...” (Rosenberg, 2001: 28-29)

“Going from distance to digital” (Ross & Davis in Preston, 2004: 29) has given birth to Virtual Learning Environments -VLE- and 3D Virtual Learning Environments (Annetta et al., 2010: 20-51). Annetta et al. define:

“Virtual worlds are places where people come to socialize, play, conduct business, and even learn. They give the person a sense of face-to-face communication, even when in reality people may be thousands of miles apart.” (Ibid., p. 154)

#### **2.1.6.3 Virtual learning**

A term that has begun to be used in schools and education in general to describe an application that enables teachers and learners to do some or all of the following:

. share files; download information; email; use discussion boards; undertake tests and surveys; share information; organise time and resources; link teaching and learning applications and activities with management information systems.” (Boulton et al., 2007, p. 1)

### **Virtual Schools**

Distance education, also referred to as distributed learning, is given the following definition:

“The communication over distance between teacher and student mediated by print or some form of technology designed to bridge the separation between teacher and student in space or time.” (Salkind, 2008, p. 261). The discrepancy between distribution of mobile devices and their use in higher educational institutions is a very interesting and relevant one. The growing interest in the field has compelled many researchers to scientifically study the m-Learning phenomenon. Despite this, relatively little is known about the big picture of how universities can use mobile devices to support teaching and learning (Zeng & Luyegu, 2011). This is because most of the research in the area of m-Learning is highly subjective and contextual, tailored to the requirements of a specific educational institution. Additionally, the definitions used by researchers to describe what they mean by m-Learning are also different. This makes it difficult to collate various studies in the area of m-learning (Väättäjä et al., 2009). Further, most of the technical students in this age group already own mobile phones and thoroughly understand their use (Tsai et al., 2005). Studies have shown learners to be completely in favor of using m-Learning as a learning platform as they believe that this will enhance their educational experience. While there are certain concerns regarding the price of inclusion of the technology, most learners consider it to be a good idea. According to learners,

the most attractive feature of m-Learning is the possibility of self-learning at their own pace, place, and time (Vate-U-Lan, 2008).

### **2.1.7 Mobile Learning throughout Teaching and Learning Approaches**

Apparently, within an online learning experience, all modes of communication - written, oral, gestural, or pictorial- are conveyed via the computer, a medium that opens up for glowing avenues but also imposes its own constraints (Hampel and Lamy, 2007, p. 34). To allude to a couple of those avenues, e-learning unfolds in collaborative learning (Anderson & Garrison, 2003: 48). Second, it is a “catalyst for communicative creativity and cognitive freedom” (Ibid., p. 117). Drawing on the Input Hypothesis (Krashen, 1985) and the Output Hypothesis (Swain, 1995), the interactionist approach to SLA emphasizes the complete learning cycle, moving from input and interaction, to feedback and output (Gass, 1997; Gass & Mackey, 2007). With an expansion of the term interaction to learner-computer interaction, the interactionist theory has been widely used in computer-assisted language learning (CALL) software design and research (Chapelle, 2009; Heift, 2004; Hegelheimer and Chapelle, 2000). In CALL program design, another important theory that has been influential and that has been adapted to include modalities beyond face-to-face communication is Schmidt’s Noticing Hypothesis (1990, 1993). This hypothesis states that noticing is a necessary condition for learning. The employed of the principles in the interactionist approach to SLA and the Noticing Hypothesis to guide our design of web-based mobile application in an English academic writing class.

According to the interactionist theory, input includes materials that learners should be exposed to for language development; input is typically a target like model, which provides positive evidence to learners (Mackey, 2006). Even so, input should also include negative

evidence for learners, information about ungrammatical or unacceptable linguistic production (Long, 1996). The input materials in Grammar Clinic are extracted from a small local learner corpus, which consists of about 100 student essays from the same level of ESL classes at the same university. To keep the input material authentic, relevant, context-independent, original erroneous sentences in the corpus were modified and then used in Grammar Clinic item writing. Each item in Grammar Clinic is a complete sentence with only one grammatical error. To make the input more noticeable to learners, only one item or sentence is displayed on the screen, and the error alone is highlighted once it has been spotted by learners. This focused visual enhancement can direct learner's attention to feedback uptake and follow-up error correction (Heift, 2009). (from Li & Hegelheimer, 2013).

In language teaching, the use of computers has started since thirty years ago. When integrated appropriately, MALL technologies can support experiential learning and practice in a variety of modes, provide effective feedback to learners, enable pair and group work, promote exploratory and global learning, enhance student achievement, provide access to authentic materials, facilitate greater interaction, individualize instruction, allow independence from a single source of information, and motivate learners (Lee, 2000). A better representation of the Learner Autonomy (LA) as an approach that involves learners in mediated mental activities, MALL intervenes so they become in charge of their own language learning (Benson & Voller, 2014).

In a volume devoted to “rethinking” pedagogy for the digital age in which we live and learn, Kukulska-Hulme and Traxler (2007) emphasized a conceptualization of mobile learning in terms of learners' experiences, with an emphasis on device ownership, informality, movement and context that will always be inaccessible to conventional e-learning. The key

attributes of mobile learning are identified as the potential for learning to be personalized, situated, authentic, spontaneous and informal. Mobile and wireless technologies certainly fit well with designs for learning which make it personalized, situated and authentic. Admittedly, it is more difficult to design intentionally for learning that will be spontaneous and informal; however, mobile and wireless technologies do have affordances that support these types of learning. As subsequently noted by Kukulska-Hulme et al. (2009), although mobile devices enable in-context interaction and content delivery, the most innovative use of mobile devices is in “book-marking areas of interest and creating context annotations that can trigger and support follow-up learning” (op. cit., p. 26). In other words, a mobile learning experience is an occasion to capture a moment of interest, for example through the action of annotation, with the goal of continuing to build on that interest in another place, at a later date.

Historically, access to educational hardware and software in classrooms has not guaranteed that teachers will use the tools in an effective way (Cuban, 1986; Cuban, Kirkpatrick, and Peck, 2001). Despite all the effort to give teachers and students access to technology, Cuban et al. (2001) found that access to educational software and hardware did not lead to its widespread use in classroom learning. The most creative and frequent uses of technology have not been linked to curricula (Becker, 2000). The Kaiser Family Foundation (2005) named today’s youth the M-generation because of the adolescents’ ability to multitask with a variety of media devices at one time, such as talking on the cell phone, instant messaging, and writing an essay all at once. Hattie (2013) suggests that several teaching strategies, numerous learning opportunities, student-controlled learning, improved collaborative learning and regular feedback are required to effectively utilise mobile technological tools within a teaching and learning environment. In agreement, Baker, Dede

and Evans (2014) and Montrieux *et al.* (2015) propose ways to successfully integrate mobile learning tools in HEIs. Practically since their availability, a succession of audiovisual recording devices (e.g., reel-to-reel, VCRs, PCs) has been used to capture language samples, and myriad playback and broadcast devices (e.g., phonographs, radios, televisions) have provided access to authentic speech samples. The espousal of audiolingual theory in the 1950s brought the widespread use of the language laboratory in educational settings (Salaberry, 2001). Influenced by behaviourism, the lab was progressively replaced in the 1960s by drill-based computer-assisted instruction, which decades later was itself surpassed by a more intelligent, interactive and multimedia computer-assisted language learning. The popular acceptance of the Internet in the 1990s advanced the development of computer-mediated communications.

The mobile phone industry has experienced the fastest rate of growth universally throughout the world. While the technology itself came into prominence in the 1980s, the use of the mobile phone was limited to only about 30% of the global population in 2004 (Paul & Seth, 2012). This figure has increased drastically, and, according to a World Bank estimative, more than 90% of the global population is within the range of a cell phone tower. The number of global subscribers has increased from fewer than 700 million in 2000 to more than five billion in 2010, which was about 70% of the population in this year (The World Bank Institute, 2012). The statistics not only point towards the immense success of the technology, but also highlight the versatility of the mobile phone. The rapid acceptance of the technology only serves to underscore the fact that people are aware of the multitude of benefits of the technology and are interested in using it in their daily lives. The continual addition of

sophisticated features has only enhanced the usability of mobile phones in several different application areas.

### **2.1.8 MALL: Essence and Challenges of Implementation**

The mobile technology, while essential, is only one of the different types of technology and interaction employed. The learning experiences cross spatial, temporal and/or conceptual borders and involve interactions with fixed technologies as well as mobile devices. Weaving the interactions with mobile technology into the fabric of pedagogical interaction that develops around them becomes the focus of attention... (Kukulska-Hulme et al., 2009)

It is not the intention to provide in this paper an account of the field of mobile learning; in any case, the field has already grown and diversified to the extent that doing justice to it in a brief overview is now becoming close to impossible. A number of publications offer general orientations and reflections on progress that are suitable for mobile learning researchers and practitioners alike (Naismith et al., 2004; Kukulska-Hulme & Traxler, 2005; Naismith & Corlett, 2006; Faux et al., 2006; Sharples, 2006; Kukulska-Hulme et al., 2009). In this section, we will focus on some points that are essential for understanding mobile learning.

#### **2.1.8.1 Essence of MALL**

There is no agreed definition of “mobile learning”, partly because the field is experiencing rapid evolution, and partly because of the ambiguity of “mobile” – does it relate to mobile technologies, or the more general notion of learner mobility? In fact both aspects are currently important; in addition, the mobility of content is often highlighted. Mobility needs to be understood not only in terms of spatial movement but also the ways in which such movement may enable time-shifting and boundary crossing (see Traxler, 2009, for a

discussion of definitions of mobile learning; see Kakihara & Sørensen, 2002, for an analysis of mobility).

Within the classroom, it has been shown that mobile devices, with appropriate software, can be highly effective in supporting small group collaborative learning, improving on what was possible to achieve without these tools (Zurita & Nussbaum, 2004; Valdivia & Nussbaum, 2007). Mobility may not be an obvious feature here, but the design of the learning activity is predicated on close interaction, conversation and decision-making between members of a group, which includes some physical movement and can be difficult to achieve with the use of fixed computers. Another recent effort made to determine the CSFs of m-Learning was made by UNESCO. A recent report by UNESCO on m-Learning considers the following factors as essential conditions for successful adoption of m-Learning: affordability, leadership, content, support from educators and parents, well-defined m-learning goals, recognition of informal learning, and defined target learner groups for m-Learning (UNESCO, 2011).

Mobile technology is not unique in providing an impetus to reconsider existing educational activity, including language education, in the light of availability of new technology (see e.g. Donaldson & Haggstrom, 2006). Irrespective of whether teachers decide to adopt new technologies in formal education, learners are found to be already using them to support aspects of their learning. This has been true with regard to the use of desktop applications, and there is growing evidence that this is also now the case with mobile devices (Pettit & Kukulska-Hulme, 2007).

Kukulska-Hulme and Shield (2008) note that MALL differs from computer-assisted language learning in its use of personal, portable devices that enable new ways of learning,

emphasizing continuity or spontaneity of access and interaction across different contexts of use. Conceived in this way, mobile learning seems to belong more to learners than it does to teachers, although we know that most learners will struggle without a teacher's direction and guidance. So far within MALL there is little published evidence of approaches that are not teacher-led, although there are some signs that this is beginning to change.

The immense variety of available apps, the connectivity to real world environments and the proximity of communication tools enable lecturers to discover active teaching and learning activities, develop differentiated learning opportunities and create collaborative information-sharing prospects (Heinrich, 2012; Hattie, 2013). As suggested by Woodcock, Middleton and Nortcliffe (2012), besides the use of technological tools to digitalise learning activities, mobile learning comprises of authentic learning experiences created through the integrated and meaningful use of technological tools to develop, communicate and disseminate knowledge and ideas. For example, lecturers could utilise virtual learning environments; interactive lessons and videos; quizzing; polling; student responses; discussion apps; and/or, online software programs for baseline, diagnostic, formative and summative assessments to enhance student' skills.

Clark and Luckin (2013) specifically encourage the use of small, wireless and mobile technological tools, such as smartphones, that have finger-operated touch screens with easy access to a variety of applications (apps) and information resources to enhance students' active learning and/or collaborative problem-solving skills inside or outside the classroom.

### ***Smartphones***

Several other free and commercial mobile language learning programs have recently become available: the BBC World Service's Learning English section offers English lessons

via SMS in Francophone West Africa and China (Godwin-Jones, 2005); BBC Wales has similarly offered Welsh lessons since 2003 (Andrews, 2003); and an EU-funded initiative known simply as 'm-learning' provides English lessons directed towards non-English speaking young adults. The goal of such programs is to engage new kinds of learners (e.g., young, disabled) in a time and place of their preference (Godwin-Jones, 2005; Kadyte, 2004; Kukulska-Hulme, 2005). Norbrook and Scott (2003) suggest that portability and immediacy, rather than localization, are the essential motivating factors in mobile language learning. Further, lessons are provided in bite-sized format, a fact appealing to busy students (McNicol, 2004). Lessons are typically delivered several times a week or even daily, include translations, and provide options for further context based applications.

### ***PDA's***

Personal digital assistants (PDAs) are more often associated with m-learning than cell phones. Their use has been integrated into various disciplines within high schools, universities, and medical schools (Carlson, 2002). In language learning, one of its primary functions has been as translator. Software programs such as MobiLearn allege to turn PDAs into 'talking phrasebooks.'

### ***iPods***

Several other applications of the iPod in language learning have been explored. In the fall of 2004, Duke University provided all incoming freshmen with free 20 gigabyte iPods equipped with voice recorders. Amongst the pilot courses utilizing the players were several language courses, which utilized both their listening and recording capabilities. Students in a Spanish class used iPods to respond to verbal quizzes, submit audio assignments, record audio journals, and receive oral feedback from their instructor. A Turkish class used them to listen to

authentic materials such as news, songs, and poems, and to the instructor's vocabulary and translations (Belanger, 2005).

### Critical Success Factors Affecting Mobile Learning

Table 6

*Classification Of CSFs*

**Table 3: Classification of CSFs.**

| <b>Variables</b>             | <b>CSF Categories</b> |
|------------------------------|-----------------------|
| Availability                 | Technology            |
| Accessibility                |                       |
| Affordability                |                       |
| Internet access              |                       |
| Connectivity                 |                       |
| Choice of Mobile Devices     |                       |
| Web 2.0 software             |                       |
| Cross-platform capability    |                       |
| Ownership                    |                       |
| Institutional Support        |                       |
| Administrative support       |                       |
| Assimilation with Curriculum |                       |
| User feedback                |                       |

|   |                                 |
|---|---------------------------------|
| <p><b>Educator perceptions</b></p> <p><b>Technical competence of instructors</b></p>                                | <p><b>Teaching Pedagogy</b></p> |
| <p><b>Faculty commitment</b></p> <p><b>Develop assessment techniques</b></p> <p><b>User feedback</b></p>            |                                 |
| <p><b>Assimilation with Curriculum</b></p> <p><b>Learning community development</b></p> <p><b>User feedback</b></p> |                                 |
| <p><b>Learner perceptions</b></p> <p><b>Technical competence of students</b></p>                                    | <p><b>Learning Approach</b></p> |
| <p><b>User friendly design of content</b></p>   |                                 |
| <p><b>Assimilation with Curriculum</b></p>  |                                 |

From: Turkish Online Journal of Educational Technology, Volume 14, Issue 2, pp. 41-51, April 2015. Determination of critical success factors affecting mobile learning: a meta-analysis approach. Muasaad Alrasheedi and Luiz Fernando Capretz.

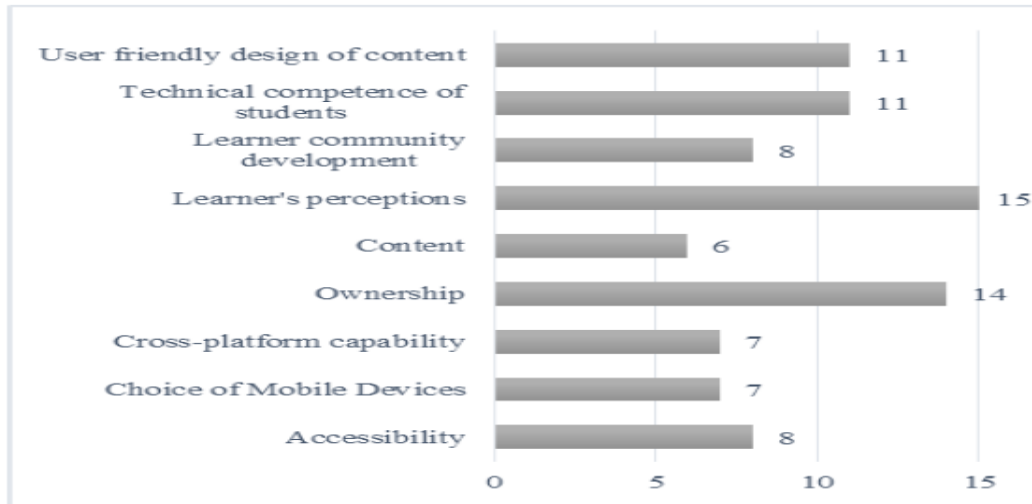


Figure 1. Plot of Shortlisted CSFs against the number of citations.

Figure 5. Plot of Shortlisted CSFs Against The Number of Citations

In regards to cost, the benefit of increased access afforded by M-Learning is particularly relevant in the developing country context. Many developing countries are completely bypassing investments in costly, fixed telephone infrastructure for the installation of mobile phone networks (Motlik, 2008; Sharples, Taylor, & Vavoula, 2007, p.224; Traxler & Dearden, 2005).

#### 2.1.8.2 Challenges of Implementing the MALL

Although 47% of teachers think it is acceptable for students to have cell phones in school for emergency situations, more than 25% of teachers do not believe cell phones belong on a school campus at all (Project Tomorrow, 2006b). Instead of spending time, energy, and money creating policies to fight cell phone use in schools, educators could spend their time finding useful ways to integrate these devices acknowledge construction, data collection, and collaborative communication tools to help students become more competitive in the digital world. There have been observed the controversy and decided to gather and present the resources they have found that provide examples for utilizing cell phones as classroom

learning tools in hopes that other educators might find these resources useful and worth exploring. (Kolb Liz. Toys to Tools, Connecting Student Cell Phones to Education)

Researchers who have studied the disconnect between the culture of student home life and student experiences in school believe that if the home culture of students is integrated into their classroom learning, they are more likely to be academically successful (Cazden & Leggett, 1981; Jordan, 1985; Mohatt & Erikson, 1981). Experts in the field of literacy over the last decade focused on broadening the definition of literacy by studying student culture outside of school as a resource for adolescent literacy learning (Alvermann & Xu, 2003; Bean, Bean, & Bean, 1999; Chandler-Olcott & Mahar, 2003; Finders, 1996; Moje, 2002).

The issues of youth literacy and everyday technology that Moje (2002) pinpoints are common concerns. Educators dismiss cell phones, instant messaging, and other popular technology communication tools as “distracting” to classroom learning. Yet if educational technology theory, research, and pedagogy are reconceptualised to include the tools and knowledge that students already possess, then students will have better opportunities to connect learning inside and outside of school. Yet, teachers assume students are the same as they have always been, and the traditional methods that worked for teachers when they were students will work for students today (Prensky, 2001).

Students are aware of and sensitive to their teachers’ dislike of their social “toys.” Teachers have very little appreciation for these new devices and the communication and knowledge-building skills students have developed as a result of them (Levin et al., 2002). Thus, Instructors repeatedly let students know their everyday social toys are not acceptable in the learning environment. Some teachers see the technologies of youth as distracting, time

consuming, wasteful, and even harmful. One of the most popular youth technologies is the cell phone.

As mentioned earlier, many school districts have strong policies prohibiting students from bringing their cell phones into the school building. Because these policies may be difficult to change, cell phones do not have to be brought to school in order to be used for the learning activities in this book. Field trips and homework assignments are two ways that students can take advantage of their cell phones as learning tools without having to bring them to the classroom. Since cell phones are becoming ubiquitous in our society, it is important to talk with students about cell phone etiquette inside and outside of school. Students consider their cell phones a fashion accessory (Selian & Srivastava, 2004).

Farley et al. (2015) and Kaliisa and Picard (2017) argue that contemporary lecturers are hesitant to engage in mobile learning strategies as their teaching and learning styles have been influenced by a teacher-centred, rather than a student-centred approach. This is problematic within a digital global environment, as lecturers, according to Ozan (2013), are clearly required to incorporate contemporary support mechanisms that enhance students' active learning and collaborative problem-solving skills. For example, planning could be focused on the use of mobile devices, acquiring management buy-in, incorporating mobile-centred curricula and content, successfully training and developing lecturers, providing efficient Internet access, providing an accessible and maintainable technology environment, developing student capability and proficiency for self-directed learning and determining results with valuable metrics. (Using Smartphones as a Social Constructivist Pedagogical Tool for Inquiry-Supported Problem-Solving: An Exploratory Study. Dr. Melissa Jeanette Lötter, 2019). These students have diverse backgrounds, cultures and home languages; may have difficulty in

reading and writing in English; may have hearing, visual and coordination difficulties; may have emotional, social and physical difficulties; and may have trouble in remembering what has been taught due to possible adaptation challenges and their unfamiliarity with mobile learning strategies (Department of Basic Education, 2011). As such, Price (2009) suggests incorporating collaborative research-based methods, applying information (relevance), motivating specific policies and assignments (rationale), creating an informal and relaxed teaching and learning environment, as well as connecting with students on a more personal level (rapport). (Using Smartphones as a Social Constructivist Pedagogical Tool for Inquiry-Supported Problem-Solving: An Exploratory Study. Dr. Melissa Jeanette Lötter, 2019).

With the rapid development of mobile device, mobile learning has recently become a focus of attention in education (Cho, 2009; Kukulska-Hume, 2009). Moreover, MALL has also attracted much attention with its perceived advantages over traditional CALL. Mobile learning can be defined as any educational provision where the sole or dominant technologies are handheld or palmtop devices (Kukulska-Hulme & Shield, 2008). The term covers any portable device such as PDAs, smartphones, and handheld computers with wireless internet access. The possibility of language learning anywhere and anytime has made mobile learning attractive to many researchers of language learning. Therefore, there have been a number of attempts to investigate the effect and preferences of mobile learning and learners using mobile phones (Dia, 2002; Levy and Kennedy, 2005; Stockwell, 2007, 2008; Thornton & Houser, 2005), PDAs (Thornton and Houser, 2003), and handheld computers (Samuel, 2003).

Other challenges that MALL also poses are inherent in the portability of mobile media are reduced screen sizes, limited audiovisual quality, virtual keyboarding and one-finger data entry, and limited power. Further, their availability can be limited. While cell phone

ownership may be almost universal for college-aged individuals, this is not true for other populations or media. The costs to educational institutions of purchasing them en masse could be staggering. Nevertheless, Gilgen (2004) has demonstrated the possibilities of developing mobile labs for schools with limited funding. Other potential drawbacks include limited nonverbal communications, limited message lengths, a lack of cultural context, and potentially limited social interaction. While mobile technologies are advancing, their output is quickly moving from verbal to visual, a clear disadvantage for language learning (Colpaert, 2004). Connection problems are also a concern: web-based language learners might choose to limit their online connection times, or they may not have access at all. Still, as a result of this issue, Trifanova, Knapp, Ronchetti, and Gamper (2004) are developing a program which allows learners of web-based German and Italian courses to hoard online content, a process similar to planned caching, so that it can be used during periods of disconnection.

M-Learning, as Visser and West (2005) suggest, can also increase access in those situations where cost represents a significant barrier to learning (p. 132). For those in rural or remote areas where environmental and infrastructure challenges hinder other learning modalities, particularly eLearning, M-Learning presents great opportunities.

On the other hand, there are some other teachers and researchers who are in favor of a more pessimistic approach, pointing out many factors that impede their introduction into language learning environments (Stockwell, 2008). Wang and Higgins (2006), for example, give a comprehensive overview of the psychological, pedagogical, and technical barriers to using mobile phones in the classroom. They argue that it is time-consuming for the learners to embrace new technologies, and it is not logical to expect all learners to feel comfortable with using new technologies at the same rate. Dias (2002a) persuasively argues that some learners

may just see mobile learning as an intrusion into their own personal space, and this in turn would constrain the degree of their acceptance. From a pedagogical point of view, Kukulska-Hulme and Shield (2007) argue that activities that capitalize on mobility and portability which are considered as the very rationale for using mobile technologies are not as commonplace as one might hope, and although the —anywhere factor is often not an issue, the —anytime part is, where learners are sent messages by email or text-messaging at either fixed times, or times that suit the teacher, a tendency which seems to defeat the purpose of using mobile technologies at all. Thornton & Houser (2002), however, experienced the technical limitations including the size of the screen and the difficulties of inputting text, particularly English.

Allowing students to use mobile devices in class can lead to chats and other inappropriate usage. Campbell and Pargas (2003) therefore suggest restricting the use of such devices by a “laptop etiquette”. One expectation is that laptops brought to class are always fully charged and in suspend mode. This is only realistic if the campus offers enough freely available power outlets for recharging laptops between lectures. As the university pays for the recharging, and short-outs of the devices may damage university property, universities may be reluctant to allow recharging. Laptop-based solutions thus have to consider the limited availability of power outlets. The following solutions address this by using other mobile devices.

All these factors should mean that the rate of adoption of m-Learning platforms in universities should be at least on a scale similar to its overall growth. Statistics show that this is not the case. Campuses have been relatively slow to adopt m-Learning as a mainstream platform. For instance, the 2010 Campus Computing survey showed that only 13.1% of higher educational institutions have already developed or enabled M-Learning (Quinn, 2011).

### **2.1.9 Instructing Language Skills with MALL**

The role of blogs in study skills; namely, writing, reading, listening and even speaking, has been approved in the literature. Liaw, Chen & Huang (2008) revealed that students having internet access has been motivating students to read extensively. In the same line, Yang (2009) suggested the integration of blogging into writing and reading classes due to its interactive nature. Students can have the chance to read their peers' language and give/receive feedback interactively. There have been also other advisable ways of blogging as a tool in the foreign language classrooms. To illustrate, the use of blogging to increase reflectivity of learners and their strategy use during written language production are the ways suggested. In a similar vein, the major benefits of this tool are stated to be its being encouraging and facilitative with respect to exchange of ideas and self-reflection (Williams and Jacobs, 2004). In this way, the learning environment turns to be a student-centred one in which learners can virtually collaborate, ask for feedback, and share their own opinions about their peers' writings. In terms of pedagogical purposes, blogs in language learning process promote dialogue between students and teacher through the exchange of ideas out of class. Specifically speaking, due to the limited amount of time to use foreign language in the expanding circle countries (Kachru, 1992), use of blogs to enhance and practice language out of class time is of great benefit for the foreign language learners. Nah et al. (2008) investigated the potential of using a mobile phone to browse wireless application protocol (WAP) sites for the purpose of developing EFL listening skills. One experiment was carried out with undergraduate students who took an intermediate EFL listening course. During the experiment students accessed WAP sites to participate in pre-listening, during-listening, and post-listening activities. During the activities, students listened to key vocabulary and audio files and then discussed activity questions.

Results of the study showed that students expressed positive attitudes towards the use of the technology. Furthermore, results demonstrated that the technology was effective for students' development of listening skills.

Hwang and Chen (2013) developed a mobile listening and speaking practice system for EFL learning. One experiment was conducted by Hwang and Chen (2013) to compare the performance of the control group (i.e. students learned by using paper-based learning materials) and the experimental group (i.e. students learned by using learning materials with personal digital assistants). Results of the experiment revealed that the experimental group significantly outperformed the control group in language proficiency. According to results of this study, students could repeatedly record their own voices and listen to themselves and others' recordings using personal digital assistant (PDA), thus obtaining more opportunities to practice and improve their language proficiency.

Kukulka-Hulme and Shield (2008) offer an overview of MALL asking whether and how mobile devices support collaborative practice in speaking and listening. The study presented the two main approaches to MALL, content related and design-related studies. With the use of mobiles, the participants extended their EFL learning in terms of reading materials and time and place of reading. Students utilised WhatsApp to reflect on the self-study parts with their classmates and teacher and to access reading materials of their choice. (Hazaea, A., & Alzubi, A., 2018). Studies have mainly concentrated on strengthening students' vocabulary learning in an environment where students use mobile technologies for prescribed vocabulary learning tasks, or tested designed personalized learning systems to enhance students' vocabulary learning in the short term in language related courses (Chen and Chung, 2008; Song and Fox, 2008; Stockwell, 2007; 2008; Thornton and Houser, 2005). When writing

is assessed with paper and pencil, teachers are less likely to use computers when they teach writing (Russell and Abrams, 2004). This is despite the pervasive use of word processors for writing in the real world and the fact that research on the use of word processors consistently shows high levels of impact on the quality of student writing (Bangert-Drowns, 1993; Kulik, 2003).

### **2.1.1 Conclusion**

It is worth mentioning that MALL studies have gained prominence over the last few years. The chapter has recapitulated the major concepts and theories underlying MALL. It also elaborated profoundly upon the differences between E-learning and M-learning. MALL is without any doubt the next step in the evolution of educational technology, reflecting the digital convergence of mobile technology and E-learning in response to a more dynamic society that seeks a personalized, lifelong and universal education (Romero et al., 2010).

**B- Academic Writing under Mobile-Based Editing**

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## **Academic Writing under Mobile-Based Editing**

### **2.1.1 Introduction**

Learning to write at an acceptable academic level cannot be isolated from learning a foreign language as writing communicatively is one of the skills in language learning. Yet, as learning other language skills, the acquisition of academic writing is a long-term endeavour. Therefore, in many curricula, teachers search for proper methods to provide more support to students in developing their writing competence. Peer and self-assessment are activities in which students consider the quality of their fellow students' work as well as that of themselves and in which the assessment is a formative one. Due to the importance of self-editing, a lot of researches tackled with the nature, the techniques, and the observable role of self-editing in creating good writers. However, very few researches were concerned with CALL and self-editing; no research could be found about using MALL in self-editing (The Effect of Mobile Phone Applications on Improving EFL Learners' Self-editing. Baleigh Qassem Al-Wasy1 & Hassan Saleh Mahdi. 2016). The scope of this study was to determine the effectiveness of mobile phones on EFL learners' self-editing.

### **2.1.1 Nature of Academic Writing**

Freeman (1998) reveals that the writing process is how we translate ideas into written text. In addition, the product approach claims that the writing process is linear and can be determined by the writer before starting to write (Hairston, 1982). In this orientation, writing is conceptualized as a sequential completion of separate tasks (Reid, 1982). The focus of the product approach in writing is on words, sentences, paragraphs - but not on meaning and ideas (Sommers, 1982). Thus, according to the product approach teaching writing is a matter of prescribing a set of predetermined tasks or exercises to the students. The students are expected

to put words into grammatical sentences. This is not writing but a 'grammar exercise' in a controlled context. Campbell (1990, cited in Jordan, 1997, p. 171) has pointed out that an important aspect of academic writing is "the ability to integrate information from previous researchers in relevant areas of study." Leki and Carson (1994) have, in turn, recommended that, EAP writing classes encourage learners to integrate personal opinions and experiences with external sources of information. The interactive strategies discussed in this paper may be used to design writing tasks in which learners practice the use of appropriate paraphrases when integrating information from different sources. Writing is not a set of ordered steps of planning, organizing and writing procedures. It is recursive, a "cyclical process during which writers move back and forth on a continuum, discovering, analysing, and synthesizing ideas" (Hughey, et al., 1983). Mahendran (2012) defines writing as "the creation of original text using the individual's intellectual and linguistic resources rather than copying one's text." (p.206). According to Dastgoshadeh, et al. (2011), writing is a highly sophisticated skill combining a number of diverse elements, only some of which are strictly linguistic. As one of the four English skills, writing has its own distinctive features. Unlike reading, for example, a writer has the ability to select the content of the written text attentively and appropriately to accommodate what she/he believes in and the way she/he likes things to go. Though it has its distinctive features, writing should be taught integrally with the other three skills: reading, listening and speaking.

Nation (2009, p. 113) assures the importance of the other three skills in teaching writing and describes writing as "an activity that can usefully be prepared for by work in the other skills of listening, speaking, and reading." On the same point, Hinkel (2006, p. 113) states that "in meaningful communication, people employ incremental language skills not in

isolation, but in tandem." Hedge (2000, p. 124) stated the different activities involved in the writing process:

"It involves a number of activities: setting goals, generating ideas, organising information, selecting appropriate language, making a draft , reading and reviewing it , then revising and editing . It involves a complex process which is neither easy nor spontaneous for many second language writers". Therefore, writing is complex and difficult for students to learn, requiring mastery not only grammatical and rhetorical devices but also conceptual and judgment elements (Heaton, 1989).

### **2.2.2.1 Writing into Major Approaches**

**Product Approach.** With the product approach, teachers focus on what a final piece of writing will look like and measure it against criteria of “vocabulary use, grammatical use, and mechanical considerations such as spelling and punctuation, as well as content and organization” (Brown 1989, p. 320). The normal procedure is to assign a piece of writing, collect it, and then return it for further revision with the errors either corrected or marked for the student to do the corrections (Raimes, 1983).

**Process Approach.** In the mid-1970s, the process approach began to replace the product approach which identifies four stages in writing: (1) prewriting, (2) composing/drafting, (3) revising, and (4) editing (Tribble, 1996). These stages are recursive, or nonlinear, and can interact with each other throughout the writing process. For example, many writers return to prewriting activities during the stage of the revision process to develop a new idea or refine a viewpoint. The process approach emphasizes revision, and also feedback from others, so students may produce many drafts with much crossing out of sentences and moving around of paragraphs. The correction of spelling and punctuation is not of central importance at the early

stages. According to Badge and White (2000), the process approach has been criticized because it views the process as the same for all writers, regardless of what is being written and who is doing the writing, and also because it gives insufficient importance to the purpose and social context of the piece of writing. However, the process approach is widely accepted and utilized because it allows students to understand the steps involved in writing, and it recognizes that what learners bring to the writing classroom contributes to the development of the writing skill.

**Genre Approach.** In the 1980s, the genre approach became popular along with the notion that student writers could benefit from studying different types of written texts. As Nunan (1999, 280) explained, different genres of writing "are typified by a particular structure and by grammatical forms that reflect the communicative purpose of the genre. According to Cope and Kalantzis (2001), the genre approach to writing consists of three phases: (1) the target genre is modelled for the students, (2) a text is jointly constructed by the teacher and students, and (3) a text is independently constructed by each student. According to Badge and White (2000), the approach acknowledges that writing takes place in a social situation, reflects a particular purpose, and that learning can happen consciously through imitation and analysis, which facilitates explicit instruction. The genre approach has been criticized because it undervalues the processes needed to produce a text and sees learners as largely passive. The genre approach succeeds at showing students how different discourses require different structures. In addition, introducing authentic texts enhances student involvement and brings relevance to the writing process.

**Process Genre Model.** Today many writing teachers recognize that we need not rigidly adopt just one approach in the writing classroom. In some cases, combining the approaches results in

a new way of thinking about writing. One example is a synthesis of the process and the genre approaches, which Badge and White (2000) termed the process genre approach. This approach allows students to study the relationship between purpose and form for a particular genre as they use the recursive processes of prewriting, drafting, revision, and editing. Using these steps develops students' awareness of different text types and of the composing process.

### **2.2.3 Process of Academic Writing**

Some first language (L1) teachers and scholars have taken an interest in the writing process, rather than the product itself (Faigley and Witte, 1981; Sommers, 1980). Being influenced by L1 research, many L2 researchers have applied the process approach to L2 writing (Keh, 1990; Raimes, 1984; Semke, 1984; Zamel, 1980, 1985). Since writing is a process, there are some stages a writer should follow in the writing process. Nation(2009:114) identifies seven sub-processes any writer should go through: considering the goals of the writer, having a model of the reader, gathering ideas, organizing ideas, turning ideas into written text, reviewing what has been written, and editing. Morgan and others (2007) claim that five stages should be followed in the process of writing: prewriting, drafting, revising, editing, and publishing. Hendrix (2013) names four distinct steps/roles in the writing process: madman, architect, carpenter, and judge. The madman brainstorms the main and sub ideas that can be included; the architect transforms those ideas into an outline; the carpenter connects the ideas in the outline to one another forming one or more drafts; the judge is responsible for cleaning and polishing the final draft. Zamel (1980) suggested that the purpose of composing should be to help students express their feelings, experiences and opinions. This approach emphasizes the on-going steps of student writing from prewriting to post-writing such as brainstorming, planning, drafting, rewriting, and editing (Keh, 1990). The act of writing is

considered to be a matter of communication between reader and writer, and is not restricted to grammar practice. The alternative proposed involves a primary focus on academic discourse genres and the range and nature of academic writing tasks, aimed at helping to socialize the student into the academic context and thus “ensure that student writing falls within the range of acceptable writing behaviours dictated by the academic community” (Horowitz 1986).

Flower and Hayes (1981) distinguish three levels in their description of the writing process: "A resource level, a process level, and a control level. The resource level consists of linguistic and general knowledge that is called upon by the processes at the process level, such as translating and revising. The control level includes a task schema consisting of the goal and a set of production that govern the interactions among the processes. At the control level, other kinds of knowledge resources might be called upon, such as knowledge of writing strategies".

Richards (2002) described the process of approach to teaching of writing as having four basic stages-planning, drafting, editing final drafts.

**a. Planning.** Richards (2002) states that experienced writers plan what they are going to write. Before starting to write or type, they try and decide what it is they are going to say. For some writers this may involve making detailed notes, for others a few jotted words may be enough. Still others may not actually write down any preliminary notes at all since they may do all their planning in their heads. But they will have planned, nevertheless, just as the shopping list writer has thought-at some level consciousness-about what food is needed before writing it on the piece of paper. Richards et al (2002) say that when planning, writers have to think about three main issues. In the first place they have to consider the purpose of their writing since this will influence (amongst other things ) not only the type of text they wish to produce, but also the language they use, and the information they choose to include. Secondly,

experienced writers think of the audience they are writing for, since this will influence not only the shape of the writing (how it is laid out, how the paragraphs are structured, etc), but also choice of language-whether, for example, it is formal in tone. Thirdly, writers have to consider the content structure of the piece-that is, how best to sequence the facts, ideas, or arguments which they have decided to include. Planning is not a unitary stage, but a distinctive thinking process which writers use over and over again during writing (Zamel, 1982).

**b. Drafting.** The first version of a piece of writing is referred as a draft. This first 'go ' at a text is often done on the assumption that it will be amended later. As the writing process proceeds into editing; a number of drafts may be produced on the way to the final version. Richards (2002).

**c. Editing.** (Reflecting and Revising). The earliest model by Flower and Hayes (1980, p.18) included two different reviewing processes:

"We distinguish between Reviewing and Editing as two distinct modes of behaviour. On the one hand, Editing is triggered automatically and may occur in brief episodes interrupting other processes. Reviewing, on the other hand, is not a spur-of-the-moment activity but rather one in which the writer decides to devote a period of time to systematic examination and improvement of the text. It occurs typically when the writer has finished a translation process rather than as an interruption to that process".

**d. Final Version.** Once writers have edited their draft, making the changes they consider to be necessary, they produce their final version. This may look considerably different from both the original plan and the first draft, because things have changed in the editing process. But the

writer is now ready to send the written text to its intended audience. For Flower and Hayes (1980), the process can be diagrammed as follows:

Planning→ drafting→ editing→ final draft

McCrimmon (1984) states that the writing process is divided into three stages: planning, drafting, and revising. Firstly, planning is a series of strategies designed to find and produce information in writing. Secondly, drafting is a series of strategies designed to organized and develop a sustained piece of writing. Finally, revising is a series of strategies designed to re-examine and re-evaluate the choices that have created a piece of writing.

Besides McCrimmon, Olson (1992) divides the writing process into seven stages: prewriting, pre-composing, writing, sharing, revising, editing and evaluation. The first stage, prewriting, is a generative activity to initiate thinking and fluency. The second stage, pre-composing, is the stage in which the writer makes initial plans about how they will approach the blank page. The third stage, writing, is drafting to give ideas shape and form in the symbols of written language. The fourth stage, sharing, is the activities of giving and receiving feedback to and from other writers concerning how writer's words affect the readers. The fifth stage, revising, is the activity to reflect upon what has been written to rethink, re-see, and reshape words and ideas after a writer has generated a draft and received feedback. The sixth stage, editing, is a particular subcategory of constraints in the composing process involving conforming to the conventions of written English, including accurate grammar, punctuation, and spelling. The last stage, evaluation, is a special form of sharing in the writing process. It is the final feedback given to a writer when a paper is completed.

In this context, Broughton (1980) considered writing process as both individual and social activity or more accurately "private and public": "When we write, unlike when we talk,

we are engaged in an activity which is usually at the same time both private and public. It is private because the act of composition is by nature solitary, but it is public in that most writing is intended for an audience..." (p.16).

#### **2.2.4 Types and Characteristics of Writing**

“Writing is a meaning- making process that is both complex and intellectually demanding. It requires thoughtfulness, precision, and time. It takes place on the blank page within the mind of the writer. As it creates meaning for the reader, it deepens understanding for the writer. It is a primary means of knowing” Hampton, 1995, p.293) According to Hedge (2000), there is a set of types of writing among which he could cite: personal writing, public writing, creative writing, social writing, study writing, institutional writing demonstrated in the following table.

Table7

*Types Of Writing*

| <b>Personal writing</b>   | <b>Public writing</b>   | <b>Creative writing</b>   |
|---|---|---|
| <ul style="list-style-type: none"> <li>-diaries</li> <li>-journals</li> <li>-shopping lists</li> <li>-reminders for oneself</li> <li>-packing lists</li> <li>-addresses</li> <li>-recipes</li> </ul>  | <ul style="list-style-type: none"> <li>-Letters for -enquiry</li> <li>Complaints-request</li> <li>-form filling</li> <li>-application (for membership)</li> </ul>   | <ul style="list-style-type: none"> <li>-Poems</li> <li>-Stories</li> <li>-Rhymes</li> <li>-Drama</li> <li>-Songs</li> <li>-autobiographies</li> </ul>   |
| <b>Social writing</b>   | <b>Study writing</b>  | <b>Institutional writing</b>  |
| <ul style="list-style-type: none"> <li>-Letters</li> <li>-Invitations</li> <li>-Notes of:</li> <li>-Condolence</li> <li>- Thanks</li> <li>-Congratulations</li> <li>-Telephone</li> <li>-messages</li> <li>-Instructions to friends</li> <li>-family</li> </ul> | <ul style="list-style-type: none"> <li>-Making notes while reading</li> <li>-Taking notes from lectures</li> <li>-Making a card index</li> <li>Summaries</li> <li>Reviews</li> <li>Reports of: experiments</li> <li>Workshops</li> <li>-Visits</li> <li>-Essays</li> <li>-bibliographies</li> </ul> | <ul style="list-style-type: none"> <li>-Agendas</li> <li>posters</li> <li>-Curriculum vitae</li> <li>-speeches</li> <li>-instructions</li> <li>applications</li> <li>-Minutes</li> <li>-Memoranda</li> <li>-Reports</li> <li>-Reviews</li> <li>-Contracts</li> <li>-Business letters</li> <li>-Public notices</li> <li>-Advertisements</li> <li>-Specifications</li> <li>-Note making(doctors and other professionals)</li> </ul> |

**Table 1.1: Types of Writing (Hedge, writing: 96)**

Creative writing is “a journey of self-discovery and self-discovery promotes effective learning” ( Gaffield-Vile 1998:31) (cited in Ur1996:169). Teachers set up imaginative writing tasks so that their students are thoroughly engaged; those students frequently strive harder than

usual to produce a greater variety of correct and appropriate language than they might for more routine assignments.

Davis and Widdowson (1974) draw a distinction between what they call institutional and personal writing. Institutional writing is the type of writing which we produce in our professional (or institutional) roles, such as that of school teachers, administrators, technicians, and so on. What distinguishes such institutional roles from personal ones (such as that of friends, sons, uncles, parents, etc.) is that there are institutionalized conventions (or rules) as to how one behaves in relation to others who are part of the same institutional network.

Hairston (1986) says that good writing has some characteristics for readers. First, good writing is significant. It should tell readers what they want or need to know. Second, good writing is clear. Readers do not want to have reread it several times to find out what it means. Third, good writing is unified and well organized. It should tell readers that the systematic development of the entire paragraph is based on the central idea stated in the topic sentence. Fourth, good writing is economical. Readers do not want to feel bored to read unnecessary words or sentences that are already clear. Fifth, good writing is adequately developed. Readers want the author to support key points with enough explanation and examples. At last, good writing is grammatically acceptable. Readers do not want to find some grammatical mistakes that can affect in meaning and readers' perception. (Winarto, A. E. (2018) Peer and Self Editing Strategies to Improve Students' Writing Skill. JEELS, Volume 5, Number 1, May 2018).

Murray (1972) tried to get at writing from another angle. Rather than focus on an end result, he looked at how a piece of writing was composed - what a writer did to reach an end result. Murray emphasized the importance of pre-writing, drafting, and the individual seeking

to express himself / herself, an idea that was echoed by Elbow (1973). Perl (1979) later added to this by noting how unskilled writers go through recursive behaviours in the process of writing. She did this by simply noticing what students did at various stages of the process. This echoes Murray, who urged teachers to "be quiet, to listen, and to respond." In this case, Emig was quiet and listened, not for a specific text but for the process of composing itself; her book is her response. In all, from these works and others, it is clear the writing process tends not to be linear but non-linear, not "one-and-done" but recursive, and collaboration from both instructors and other students shapes writer's ideas about text and audience.

As these theories are often put into practice in regards to the process writing, it is assumed that there are semi-orderly stages to writing, and they are: prewriting/brainstorming, drafting, revision, editing/proofreading, and final product/publishing. As shown from both streams above, the act of process writing is shaped by forces that are social, historical, and tribal. In other words, people and the rules of a geographical place determine what is social. The tribal (non-geographical) is determined by whom one chooses to affiliate and with whom one chooses not to affiliate. The historical means the previous events that shaped the moments one is in. These three forces shape how the L2 writer will meet his or her L1 audience. In the case of this research, we looked at how L2 Emirati students drew on these forces to reach an international L1 audience.

Britton (1978) proposes other categories associated with functions of writing which are: expressive, transactional, and poetic. He (Ibid) associated function with what the writer intends to do with the piece of writing and how the reader is affected by it. This can be displayed as follows:

Transactional←Expressive→Poetic.

The expressive stage refers to personal feelings and ideas that the writer wants to express. These may either develop into transactional or poetic. The first category includes writing in order to achieve a particular purpose, the written form being a means for achieving this function; whereas in the poetic type, the important purpose is the writing itself.

### **2.2.5 Teaching and Learning Writing Through MALL**

The task of the teacher is to control and evaluate the written productions, taking into account a number of criteria such as ‘organization, coherence, clarity, with accurate language, and word choice’ (Starkey 2004). Raimes (1991) summarized the shift in the teaching of writing according to second language acquisition theory. Until the 1970's, language teachers put great emphasis on accuracy and attached greater importance to form rather than meaning. During this period, when behaviourism and structuralism predominated in the language learning field, writing was regarded as a tool to practice grammatical structures. Accurate forms of language were given the highest priority in writing classes. In this framework, writing was mainly taught through controlled writing exercises and students had few opportunities to express their opinions in written English. With regard to errors, most writing teachers spent a lot of time treating students' errors and they usually provided the correct forms directly. Since the 1970's, the major teaching theory has been Communicative Language Teaching (CLT), which has emphasized the communicative function of a language. In this framework, writing teachers have attempted to help their students gain fluency in writing. Free writing was a popular technique used frequently in the classroom. Since then, some first language (L1) teachers and scholars have taken an interest in the writing process, rather than the product itself (Faigley and Witte, 1981; Sommers, 1980).

Hyland (2002) stated that:

"(...) fundamentally, writing is learned, rather than taught, and the teacher's best methods are flexibility and support. This means responding to the specific instructional context, particularly the age, first language and experience of the students, their writing purposes, and their target writing communities, and providing extensive encouragement in the form of meaningful contexts, peer involvement, prior texts, useful feedback and guidance in the writing process." (p.78).

Harmer (2001) stated that "The reasons for teaching writing to students of English as a foreign language include reinforcement, language development learning style and, most importantly, writing as a skill in its own right".

**a. Reinforcement**

Harmer (2001) said that: "The majority of students acquire language in a purely oral / aural way, most of us benefit greatly from seeing the language down. Therefore, written language can be traced greatly in the memory than in the oral way. Students often find it useful to write sentences using new language shortly after they had studied it".

**b. Language Development**

The process of writing helps us to learn as we go along (rather like the process of speaking).

Harmer (2001, p. 79) states that "The mental activity we have to go through in order to construct proper written texts is all part of the on-going learning experience".

**c. Learning Style**

It may be found that students are very quick at picking up language just by looking and listening, but for others it may take a little longer. Harmer (Ibid, p. 79) reports "For many

learners, the time to think things through, to produce language in slower way, is invaluable. Writing is appropriate for such learners".

**d. Writing as a Skill**

By far the most important reason for teaching writing is that it is a basic language skill, just as important as speaking, listening and reading. Students need to know how to write letters, how to put written reports together, how to reply to advertisements. With the many uses of writing skills, it would appear evident that people should be made aware of its importance. Harmer (2001) states that: "We can get beginners to write simple poems, but we probably won't give them an extended report on town planning to do. When we set tasks for elementary students, we will make sure that the students have –or can get –enough language to complete the task".

FL teachers and students face certain problems in teaching and learning writing. As many teachers of English have noted, acquiring the writing skill seems to be more laborious and demanding than acquiring the other three skills (Zheng 1999). In fact, Nunan (1999) considers as an enormous challenge to produce "a coherent, fluent, extended piece of writing" in one's second language. This is magnified by the fact that the rhetorical conventions of English texts, the structure, style, and organization, often differ from the conventions in other languages. It requires effort to recognize and manage the differences (Leki, 1991). Hence, the student is to be seen both as a learner and as a writer, and the purpose of writing is communicating with the others through his/her written production (Stewart, 1988).

Many researchers like Engber (1995), Cumming (2001); Chenoweth (2001) who tried to find the best technique to teach the writing skill. A series of questions comes to one's mind as Richards (2002) said "Which theoretical trends are we going to adopt? Are we to use the process approach or the genre based approach? Or an eclectic approach? What will the focus

of our course be? What activities are likely to help students develop their writing skills? How do treat learners' errors? ». Griffin (1982) has noted, «the major question confronting any theory of responding to student writing is where we should focus our attention". Should classroom teachers' written feedback focus on form or content? Does the research in composition support the current trends in composition teaching to focus on content?

Teachers, tutors and students working collaboratively together in the assessing process may bring some advantages in this procedure. Some could be the decrease of staff workload and time spent on assessment. Other advantages may be the development of additional skills for students like communication and observation skills as well as self-criticism and self-evaluation (Al-Smadi, Guetl, and Kappe, 2010).

#### **2.2.6 Sentence Writing in EFL Classes**

For both students and professionals, clear communication is important. Whether you are typing an e-mail or writing a report, it is your responsibility to present your thoughts and ideas clearly and precisely. Writing in complete sentences is one way to ensure that you communicate well. It is important to know how to recognize and write basic sentence structures and how to avoid some common writing errors. Complete sentences require key information: a subject, a verb and a complete idea. A sentence needs to make sense on its own. First of all, writers, who have the intention of expressing an idea or message to a reader, need to have some vocabulary knowledge of the language in which they are writing (Kaplan, 1996). Writers' lexical knowledge or vocabulary size is likely to influence the quality of their texts correlate substantially with holistic ratings of these texts (Engber, 1995). Also, in a study by Laufer & Nation (1995), it was shown that vocabulary size, use of words of different frequency bands (lexical frequency profile), and composition rating are highly intercorrelated.

Limited lexical resources seem to reduce writers' possibilities for expressing their ideas. How to reduce writers' ideas are not just expressed in single words but need to be cast in grammatical structure that indicate the relationship between the constituents in the clauses containing those single words. Consequently, writers need to have some grammatical knowledge at their disposal to be able to connect the words into proper clauses and sentences (Kaplan, 1996).

Coe and Rycroft (2000) presented the main reasons why learner's writing may be difficult to understand or defective in some other way:

- a) The sentence may not have clear punctuation: there may be commas and full stops without any good reason; there may be no punctuation where it should.
- b) The idea may not have been presented in an order that easily makes sense to the reader.
- c) The relation between the ideas may not be clear because of the absence, or inappropriate use, of linking words and phrases, such as although, for example, lastly, on the other hand, and so on.
- d) The writer's attitude to what he or she is writing may not be clear: is he or she describing, suggesting or criticizing something?
- e) The ideas may not be grouped together into distinct paragraphs, or the learner may begin practically every sentence on a new line. Again, a paragraph-or a longer text-may not begin with an introduction that leads the reader in the right direction.
- f) A text may contain ideas that are not really relevant to what the writer wants to express, or the writer may find it difficult to think of enough ideas.

### 2.2.6.1 Editing Errors in Sentence Writing

Early in the nineteenth century, rhetoric was taught, and little or no attention was paid to grammatical correctness (Connor, 1985). Toward the end of the nineteenth century and into the twentieth, interest in grammatical correctness grew. Text-books focused on exercises that required students to find and correct errors.

The teacher may often find that many students can communicate ideas and meaning, but they often write loose-jointed sentences without meeting the standards of grammatical accuracy and coherence. This kind of writing in terms of incoherent sentences is referred to as spaghetti writing by McDevitt (1989). After the students have written their work, it needs to be revised and evaluated. Learners who are unused to process writing will view revision as a sign of failure if handled poorly by the teacher. As with revision, evaluation is often viewed negatively, mostly due to the traditional technique of merely highlighting the errors in a learner's work. The teacher's task is to provide evaluation that will lead the learners into reflecting on their work. (Simpson 2002). However, they may have more trouble choosing appropriate words in context and using acceptable sentence structures if only the locations of errors are indicated without any guidance as to how to correct the forms as shown in the study of Ferris and Roberts (2001).

“It appeared that as the researcher explored the topic authors frequently confused editing and revising. When reviewing the literature several authors appeared to use these almost as synonyms. If educators are not sure of the process then it will be as difficult for the students. Some authors would be discussing revising and mentioning ideas about checking spelling and punctuation. This is something that occurs in the editing process. The revision

process is going back through the writing and looking at the sentences to see if there is anything that can be changed in the writing to enhance the message” (Josué Gonzalez, 2009).

Semke (1984), who utilized a process approach, suggested that teachers should be concerned more about content since error correction did not help L2 German students improve their accuracy. She found that error correction did not make a difference in the accuracy of her L2 students' compositions. Semke formed four groups for the study: the first group was given comments on grammatical errors; the second group was provided with comments on content; the third group was provided with comments on both grammar and content; and the fourth group had errors pointed out. She reported that there was no significant difference in accuracy of the students' compositions among the four groups after the 10-week experimental period. Findings from the studies of Semke (1984) and Zamel (1985) gave L2 writing teachers considerable insights about the need to be more concerned with content than with surface forms by recognizing the communicative aspect of writing. However, the finding regarding the effect of feedback improvements in surface level grammar usage in composing must be interpreted cautiously. In the study by Semke (1984), for example, a 10- week experimental period may not have been long enough to observe the effects of feedback on students' interlanguage.

#### **2.2.6.2 Language Error Analysis**

The Standard Theory, also known as the Aspects Model in Transformational Generative Grammar (Chomsky, 1965), prescribed four basic components in language analysis. The base component of syntactic structures, also known as the deep aspect, the transformational component reflected in the sentence or surface structures, the phonological component defining the phonetic representation of pronunciation, and the semantic component

allowing for interpretive semantics and dealing with the meaning of the sentences. The theta theory (Chomsky, 1980) dealing with semantic relationships prescribes that the lexical entry of a verb constrains the semantic or thematic roles associated with it in agent and patient positions. Government and binding theory identifies levels of abstract sentence categories that operate according to set rules of structures. D-structures deal with semantic constraints. S-structures deal with syntactic and grammatical constraints. (Proceedings of the BAAL Conference 2007 When Language Talks Dr Hayat Al-Khatib). Linguistic analysis from this perspective leads at best to the identification of the micro categories that combine to produce a sentence, adhering to the idealized forms in language production.(Al-khtib). Truscott's (1999) response to her rebuttal essentially repeated his previous conclusions. Truscott and Ferris agreed on only two points (a) that the research base on error correction in L2 writing is indeed insufficient and (b) that the "burden of proof" is on those who would argue in favor of error correction (see also Polio, Fleck, and Leder, 1998). At that point, since both agreed that more research was necessary, Ferris decided to stop debating and go and do some more research! She attempted to articulate answers to two questions regarding research on grammar correction in L2 writing: (1) Where are we? (2) Where do we go from here?

### **2.2.7 The Essence of Editing in EFL Writing**

Editing is the last stage of the writing process. It can be defined as "manipulating a text in such a way that it yields a product which is as correct as possible and thus contains the fewest errors possible," (DePoel, et al., 2012: 6). Mahendran (2012: 209) summarizes the purpose of editing in reducing 'ambiguities and anomalies' in a writing text and increasing its 'readability and acceptability in terms of the writer's goals and intentions'. Therefore an editor should not only deal with the features of grammar, spelling, and punctuation, but he should

also go back over the writing and check its organization, style, grammatical and lexical correctness, and appropriateness. (Nation, 2008 and Neubort and McNelis, 1986). For Weir (1990), one of the indirect methods for assessing learners' writing ability is editing in which the student is given a text and is asked to rewrite the passage making all the necessary corrections. According to Harmer (2001), most students find correction desparating if they get their piece of written work back covered with red ink, underlining crossings-out .It is a powerful visual statement that their written English is very bad. One way for Harmer (2001) to avoid the 'over -correction' problem is for teachers to tell their students that for a particular piece of work they are only going to correct mistakes of punctuation, spelling, or grammar etc. This has two advantages: it makes students concentrate on that particular aspect, and it cuts down on the correction. Noskin (2000) views that revising is considered the heart of the writing process, the means by which ideas emerge and evolve and meanings are clarified. Moreover, Manzo (1995) argued that revising should be viewed as a thinking process that helps students refine ideas, discover new connections and explore them more in an attempt to best communicate their ideas with an audience. Hyland (2002) stated that: "(....) fundamentally, writing is learned, rather than taught, and the teacher's best methods are flexibility and support. This means responding to the specific instructional context, particularly the age, first language and experience of the students, their writing purposes, and their target writing communities, and providing extensive encouragement in the form of meaningful contexts, peer involvement, prior texts, useful feedback and guidance in the writing process." Lucy Calkins (1994) even states that "we need to find ways to interest students in spelling and grammatical rules, making it fun to explore, ponder, and wonder about our complex language" (quoted by Laura Michael, second paragraph under Editing section).

Zhou (2009) studied learner perceptions concerning the importance of improvement of grammar and vocabulary in their writing. The study found that these learners, who were enrolled in a pre-university intensive English for Academic Purposes program, did regard improvement of grammar and vocabulary in their writing to be an important personal goal to be met in language study. Another study of learner perceptions was conducted with respect to French as a foreign language. Manley & Calk (1997) found that the majority of their participants perceived explicit, grammar instruction to be useful for their writing skills development.

Weir (1990) suggested two different approaches for assessing writing ability communicatively. They include direct and indirect methods. Indirect methods like editing task enjoy the advantage of having a good wash back effect as students are taught and encouraged to edit their written work more carefully. Students are often unfamiliar with marking criteria. Hence, they need to be clearly introduced to them at the beginning of their course of study. Therefore, Weir (1999) offered appropriate criteria for assessing written production: the Test in English for Educational Purposes (TEEP). In this scale, the criteria of relevance and adequacy, organization, cohesion, grammatical accuracy, spelling, and punctuation were seen as the most suitable factors for assessing writing tasks (see the Appendix for more details). To him, in order to resolve the issue of criteria, both the teacher and the students should be able to clarify the concepts of the criteria. Cowan (2004), in his study on the role of reflective self and peer assessment in writing evaluation, concluded that although initially fearful, most students found the experience of reading a peer's work helpful and enjoyable, and that self-assessment makes students become more confident and autonomous in writing.

Editing is not only a stage in the writing process but also a process in itself. Many activities can be done in editing. In the process of editing, the writer should "correct misspellings, check punctuation, search for grammatical inaccuracies, look at the paper's format, and consider any of other surface features that might weaken the paper's message," (Kirszner and Mandell, 1992). According to Bates (2011), the process of editing should cover these activities: getting rid of all unnecessary words, improving words that remain, putting the best words in the right places, and removing words to other places. DePoel and others (2012) indicates that a text in the process of editing should go through many people: it should first be given to a content editor who focuses on content and structure; then passed to a development editor who reshapes and inserts missing information; next submitted to a text editor who is responsible for language, grammar, punctuation, style, and the clear and correct meaning conveyed by the components of the text; and finally the production editor will proofread for the final product.

## **2.2.8 Types of Editing in Writing**

### **2.2.8.1 Peer Editing**

Editing can be done by the writer himself or there may be some kind of peer editing. Simply, peer editing is a kind of feedback given from one learner to another. It refers to the dynamic process of reviewing peer texts and writing comments where necessary. In peer editing, learners should participate in critical evaluation of peer texts by sharing their drafts for the purpose of discussing them and receiving helpful feedback. (Tessema, 2005; Wakabayashi, 2013). Ozarska (2008, p. 31) suggests another way to achieve peer editing, that is, by dividing the class into groups, each of which will focus on one aspect of language; organization, logic, vocabulary, or grammar. Peer feedback does not mean the learners can replace the teacher in the process of error correction.

Instead, they play the role of agents which "provides the ground upon which learners scaffold each other's' learning," (Wakabayashi, 2013). Peer editing is an interactive process of reading and commenting on a classmate's writing (Oshima, 2007). The goal of peer editing is to provide constructive criticism to improve writing. In order to make it easier for students to check, correct, give comments, or suggest a classmate's writing, peer editing worksheet is really needed as a guide.

Table 8

*Peer Editing Worksheet**JEELS, Volume 5, Number 1, May 2018***Table 1 Peer Editing Worksheet**

**Instruction to peers:** Your job is to help your classmate revise his/her paragraph. Read your classmate's paragraph (draft) and write your comments. Focus only on content and organization.

| No | Questions   |
|----|---|
| 1  | Do you understand everything? If you think there are some difficult words or sentences to understand, write them and your comment.            |
| 2  | Is there a topic sentence? Is the topic sentence consists of a topic and a controlling idea. Write your comment.                              |
| 3  | Are there some supporting sentences? Is there enough information or explanation or example for every supporting sentence? Write your comment. |
| 4  | Do you find some information that is out of the topic or the central idea? Write your comment.  |
| 5  | Is there a concluding sentence? Write your comment.   |
| 6  | Do you think this paragraph has enough transition signals? Write your comment.  |
| 7  | Do you still have any other comments to improve this paragraph? Write your comments.  |

Adapted from: Alice Oshima and Ann Hogue (2007)

### 2.2.8.2 Self-Editing

Self-editing is the second form of the editing process. Epting (2003) indicates that writers, in self-editing, work as self-listeners, reacting and editing their own verbal behaviours. Due to the nature of writing, writers may have a better chance to edit their work, taking into account the expected behaviour of their audience. In its simplest meaning, self-editing demands the writer to revise his work before submitting it for publication. Self-editing has two main theoretical perspectives: structural and behavioural perspectives. The structural perspective views 'self-editing' as an attempt to understand the mechanisms of speech production whereas the behavioural approach views 'self-editing' as a behaviour of interest which is subject to manipulation and study. In the behavioural perspective, the primary function of self-editing is avoidance of, or escape from, unwilling conditions such as a punishment. To avoid a punishment such as reducing marks, a student writer, for example, will edit his piece of writing to avoid committing mistakes, and thus to avoid being punished by his teacher. (The Effect of Mobile Phone Applications on Improving EFL Learners' Self-editing.2016. Baleigh Qassem Al-Wasy and Hassan Saleh Mahdi)

Thus it can be concluded that the followers of the structural perspective pay more attention to speech than the analogous processes in writing. However, the followers of the behavioural perspective pay more attention to writing than to speech. To summarize it can be said that studies related to the application of self-editing in speech can be adhered to the structural perspective whereas studies related to writing have tended to follow the behavioural perspective (Epting, 2003: 7-16). To date, studies investigating self-editing practices focus mostly on ESL writing courses with students of varied linguistic backgrounds (Diab, 2005; Ferris, 1995a, 1995b; Ferris & Roberts, 2001; Leki, 1990, 1991). Since the beginnings of process writing in the 1970s, grammar correction has had a place in the writing classroom, albeit a small one at first (Holland Jennifer, 2009

Perceptions and Practices of Self-editing in Advanced Writing). The importance of self-editing during process-based writing classes has been acknowledged by many. Recently, Bitchener and Ferris (2012) described the activity of self-editing as a source of corrective feedback, and more importantly they view the competence of self-editing as an ultimate goal of providing corrective feedback. Self-editing, a learner initiated activity, has been recognized as a critical step in L2 learners' writing and grammar development, as it facilitates acquisition processes and promotes learner autonomy (Cresswell, 2000; Fathman and Whalley, 1990; Suzuki, 2008). Polio, Fleck, and Leder (1998) studied this topic when they examined the performances of two groups of ESL learners who were given extra time for self-editing. They found that even though learners showed significant improvement across the writing assignments, both experiment groups, which received grammar review and feedback, did not perform better than the control group, which had no treatment at all in terms of developing grammatical precision in their writing. This finding demonstrates the potential of self-editing in L2 writing; nevertheless, it asks us to reconsider the effectiveness of grammar instruction used in the experiment. To investigate self-editing in terms of the effects of teachers' cues on Japanese college students' self-correction in English writing, Makino (1993) compared the performance of three groups of learners. She found that when no cues were given, learners could make limited and fewer self-corrections of grammar errors, compared with the other two groups that respectively received cues on general error location or cues with specific underlines. This further suggests that training or support of self-editing for ESL learners is necessary. (Li and Hegelheimer, 2013)

According to Hendrix (2013), the most important points that should be revised by the self-editor are: the necessity to move a specific paragraph up or down in the piece of writing, the clarity of its sentences and paragraphs, and the relevance and accurateness of its citations. Cresswell (2000:

236) states that a self-editor needs not to concentrate only on grammar rules and spelling but also on "more 'substantive' or 'global' aspects of content and organization, such as checking logic, relevance of single ideas to the global argumentation pattern, and appropriateness of content to the given reader. "Saver (2006) insists on four components a self-editor should take care of: clarity, conciseness, correctness, and compelling. Clarity means to check whether you choose the right words and craft them carefully into your sentences and paragraphs. To achieve clarity, a writer should better avoid long words where simpler words can be used, passive voice, jargon and acronyms, and ambiguous wording. Conciseness can be achieved by checking the use of headings and sub-headings in organizing your article and graphics in presenting information. You can also make your piece of writing concise by omitting 'extraneous words' that can slow the reader down; you can only focus on the 'need to know versus nice to know'. Correctness refers to checking the facts in your piece of writing to ensure their accuracy. Facts include numbers or statistics, references, grammar and spelling, etc. Compelling can be achieved by looking for gaps in logic and anticipating readers' questions. In essence, there are two ways to go about self-editing. First, students use checklists while proofreading a draft and look for the types of errors listed. Such checklists are commonly found in textbooks for process writing (see Ferris, 1995b for a sample list of textbooks which deal with self-editing). Second, students may edit their work based on indirect feedback, that is, a teacher points out an error (for example by underlining or highlighting) and may provide a code or other clue as to the type of error that was made (Holland Jennifer, 2009). Bates et al. (1993) and Ferris (1995a, 1995b, 1999, 2002) discuss methods of implementing self-editing and make suggestions for how error feedback should be given to best promote student success. These authors agree that providing selective feedback focusing on the most frequent and serious errors are important. Not only is indirect feedback less time-consuming than direct feedback, but indirect

feedback has been shown to be most effective in long-term gains in grammatical accuracy and editing ability (see Ferris, 1995a; Ferris and Roberts, 2001). Bates et al. (1993) and Ferris (2002) clearly state that indirect feedback methods also promote learner responsibility.

Some comparative studies focusing on self- and peer-editing have shed light on learners' actual performances during each stage of the editing process. Suzuki (2008) took a qualitative approach in examining 24 Japanese university students' self- and peer-editing processes. By analysing verbal reports, she found that peer-editing generated more episodes of negotiation whereas self-editing resulted in more text changes focused on word choice and grammar error correction. Diab (2010) also found that peer-editing helped reduce more rule-based errors, but not non-rule-based errors, compared with self-editing practice. On the whole, these studies indicate that learners generally can notice their errors during self-editing, but that supplemental instruction or training is also needed. A tailored web-based mobile application may be one option that can provide learners with opportunities to improve their self-editing practices. ( Li and Hegelheimer, 2013). Diab (2010) carried out a research to compare the effects of peer-editing to that of self-editing on students' correction of specific language errors in revised drafts. The language errors under study were two rule-based errors (subject-verb agreement and pronoun agreement) and two non-rule based errors (wrong word choice and awkward sentence structure). Results revealed that peer-editing is more effective in reducing rule-based errors than self-editing. For the non-rule-based errors, both methods of correction have the same significance. Peer and self-editing strategies are strategies which are used by students in the process of writing, especially in the process of sharing, revising, editing, or evaluating phases. They are considered as social and metacognitive strategies (O'Malley & Chamot, 1990; Oxford, 1990). Peer and self-editing strategies are social strategies and metacognitive strategies (O'Malley and Chamot, 1990; Oxford, 1990). They are commonly used by

students in the process of writing, in the phase of sharing, revising, editing, or evaluating. As social strategies, peer editing strategies are strategies that facilitate interaction with others, often in a discourse situation. These strategies, such as asking questions or clarifications, cooperating, and empathizing, help students learn through interaction with others. Studies related to grammar errors in L2 writing have largely focused on written corrective feedback from teachers. However, the efficacy of corrective feedback has been challenged by Truscott, and the academic debate over the effect and use of corrective feedback continues (Ferris, 2004; Bruton, 2009; Truscott, 1999, 2007). Truscott's (1999) rejection of corrective feedback for its minor positive effects—and his assertion of potentially harmful effects—on the development of English learners' grammar competence has sparked a series of theoretical arguments and empirical studies. Recently, a number of empirical studies on both short-term and long-term effects of written corrective feedback have lent support to the proponents of corrective feedback (Bitchener and Ferris, 2012; Ferris, 2006, 2010; Sheen, 2007). Nevertheless, this does not mean that the practice of corrective feedback is without its problems.

Table 9

*Self-Editing Worksheet*

**Table 2 Self-Editing Worksheet**

Instructions: Read your paragraph carefully. Use this worksheet to check your work.

| No | Indicators  | Checklist |    |
|----|---|-----------|----|
|    |   | Yes       | No |
| 1  | <b>Paragraph Format</b><br>My title is centered.<br>My first sentence is indented.<br>Besides the first sentence, no other sentence is indented.<br>My paragraph has margins on both sides.<br>My paragraph is written on every other line.   |           |    |
| 2  | <b>Content and Organization</b><br>I do not copy any sentences from another book or online source. If I use information from another book or online source, I rewrite the information in my own words.<br>My paragraph has a topic sentence.<br>The topic sentence consists of a topic and a controlling idea.<br>My paragraph has some supporting sentences.<br>Every supporting sentence has enough explanation or information or example.<br>My paragraph has a concluding sentence.<br>My paragraph has unity. No sentences are out of the topic and the controlling idea.<br>My paragraph has coherence. I repeat key nouns, use consistent pronouns, use transition signals to link idea, and arrange the ideas in logical order. |           |    |
| 3  | <b>Punctuation, Capitalization, and Spelling</b><br>I put a period after every sentence.<br>I use commas correctly.<br>I use capital letters correctly.<br>I spell the words correctly.   |           |    |
| 4  | <b>Grammar and Sentence Structure</b><br>I have read and checked every sentence<br>I have checked <i>subject and verb agreement</i><br>I have checked <i>the nouns, pronouns, verbs, adverbs, adjective, etc</i><br>I have found no <input type="checkbox"/> / a few <input type="checkbox"/> / some <input type="checkbox"/> / many <input type="checkbox"/> mistakes  |           |    |
| 5  | I still have some other comments to improve my paragraph<br>.....   |           |    |

Adapted from: Alice Oshima and Ann Hogue (2007)

### 2.2.9 Proofreading Strategies and Corrective Feedback for Self-Editing

Feedback can be regarded as a means of providing information and as a reinforcer for revision. It consists of comments and information about performance that someone has demonstrated. Overall, three broad meanings of feedback have been examined (Kulhavy and Wager 1993). First, in a motivational meaning, some feedback, such as praise, could be considered a

motivator that increases a general behaviour (e.g., writing or revision activities overall). This piece of the definition came from the research that tried to influence the amount of exerted effort through motivation (Brown, 1932; Symonds and Chase, 1929). Second, in a reinforcement meaning, feedback may specifically reward or punish very particular prior behaviours (e.g. a particular spelling error or particular approach to a concluding paragraph). This piece of the definition came from the law of Effect (Thorndike, 1927). Third, in an informational meaning, feedback might consist of information used by a learner to change performance in a particular direction. This piece of the definition came from information-processing theories (Pressey, 1926; 1927). Chandler (2003) reported that self-correction has a positive long-term effect on improvement of accuracy in writing. Teachers can offer a self-correction opportunity for their students by providing indirect feedback on students' mistakes.

#### **2.2.9.1 Direct Versus Indirect Feedback**

Long (1977) identified the difference between error correction and feedback. The purpose of error feedback is to help students detect grammatical errors and correct them (cited in Makino, 1993). In this context, direct feedback is more closely related to error correction than error feedback. Ellis (1985) also noted that this direct method is just low-level correction and not real feedback. According to Hendrickson (1984), the purpose of indirect feedback is to indicate either the presence or the specific location of errors; direct feedback means not only to indicate the presence or location of errors, but also to suggest correct forms. If the students are only provided with direct feedback on their final drafts, they do not have an opportunity to reflect and correct the errors for themselves; they only note the errors marked by the teacher. This is one reason why indirect feedback has received more support among researchers (Ferris, 2002; Hendrickson, 1984; Lalande, 1982; Robb, Ross and Shortreed, (1986) suggested that teachers should not waste time giving direct feedback to

students if both direct and indirect feedback methods are equally effective. Frodesen (2001) also suggested that indirect feedback was generally more useful than direct correction in composing. He advised L2 writing teachers not to provide correction on all errors because it makes students feel overwhelmed and reduces their motivation for learning. Charles (1990) describes her techniques as a four-phase activity.

**Step 1:** Students draft and ‘monitor’ their texts.

Students write the first draft, underline and annotate the problem areas for teacher response.

**Step 2:** Teacher/editor responds in writing to the monitored comments.

Teacher responds to the first draft and replies the written queries. He also adds further comments and returns the paper.

**Step 3:** Students respond to editorial comments and rewrite their drafts. Students produce a second draft and add further explanations or questions to the teacher’s comments. First and second drafts are then handed in.

**Step 4:** Teacher/editor responds to student comment and second drafts.

The teacher again notes down on the first draft any further explanations that are necessary. Teacher responds to the second draft checking whether the student is able to deal with the problems identified during the self-monitoring phase. Further revisions can go on depending on the students, the nature of paper and the time available. If not, the second draft may be the final revision.

The merit of the student-centred self-monitoring technique is that it encourages students to look critically and analytically at their writing as if they were the reader. Moreover, the teacher can give tailor-made feedback to individual students.

A popular procedure is “conferencing”. As the class writes, the teacher can talk with individual students about work in progress. Through careful questioning, the teacher can support a

student writer in getting ideas together, organizing them, and finding appropriate language. Keh (1990) (cited in Johns 1990) suggests an elicitation procedure with focusing questions such as « who are you writing to?» and « how have you organized your points?

Carnicelli (1980) lists six major teacher activities when a conference method is adopted:

- a. The teacher should read the paper carefully;
- b. The teacher should offer encouragement;
- c. The teacher should ask the right questions;
- d. The teacher should evaluate the paper;
- e. The teacher should make specific suggestions for revising the paper;
- f. The teacher must listen to the student.

He also summarizes five major advantages of the conference method.

- a. Individualized instruction in writing is more effective than group instruction.
- b. The teacher can make a more effective response to the paper in an oral conference than in written comments.
- c. The student can learn more from an oral response than from written comments.
- d. Conferences can promote self-learning.
- e. The conference method is the most efficient use of the teacher's time.

Moreover, “reformulation” is a useful procedure when students have produced a first draft and are moving on to look at more local possibilities for improvement. It has the particular advantage that it provides students with opportunities to notice any differences between the target model and their own production and thus to acquire language forms. Reformulation (Allwright 1984) proceeds through the following stages:

- a. The students carry out a guided writing task. The task is guided to ensure that the content and organization of their writing is similar. Indeed, collaborative work could be used at the planning stage.
- b. Each student writes a first draft and hands it to the reader.
- c. The teacher marks the work by indicating problems by means of underlining or highlighting
- d. The teacher chooses one student's essay and reformulates it, following the ideas closely but improving the expression in terms of accuracy.
- e. The original piece and the reformulation are copied so that students can compare them.
- f. The class works in pairs and groups, identifying the changes in the reformulation and discussing the reasons for them.
- g. The teacher, with the class, discusses the changes and gives a rationale, inviting comments and questions.
- h. Students then go through their own first drafts and revise them in the light of any useful information they have gained.

The advantage of reformulation is that it allows discussion of such aspects as how ideas are developed, how a range of structures, vocabulary, or connecting devices can be used, and how the style needs to be appropriate to the readers.

Feedback is one of the fundamental tools used to provide effective interaction in teaching-learning contexts. Narciss (2008, p. 292) defines the term “feedback” in any teaching context as “the post-response information which informs the learners on their actual states of learning and/or performance in order to help them detect if their states corresponds to the learning aims in a given context”. The scope of feedback has a vital impact on the process of any specific learning situation. The feedback provided by a teacher will determine the progress of learners, the pedagogical and

assessment intentions and expectations of the teacher and the institution, the degree of student engagement in the learning process, and the revision responses expected from learners (Parr and Timperley, 2010). By deciding on a specific type of feedback, a writing teacher can put emphasis on form, content, discourse, punctuation, or any other language item in isolation or in combination with multiple aspects. In a writing classroom context, feedback has a vital role serving multidimensional function. In addition to assessment purposes, it has a larger pedagogical role "...by pointing forward to other texts students will write, assisting students to work out the text's potential and to comprehend the writing context, and providing a sense of audience and an understanding of the expectations of the communities they are writing for" (F. Hyland & K. Hyland, 2006b, p. 206). When used effectively, it can also act as a medium of interaction between student-teacher and student-student and trigger revisions, which subsequently foster language improvement (Hyland, 1998; Ferris, 1997) and contribute to the process of learning when the nature of it is well chosen (Balzer, Doherty, & O'Connor, 1989; Kluger and Denisi, 1998). However, in second language instruction, identifying the scope and the format of providing feedback for learners' writings has always been controversial. The on-going debate is multifaceted. While educators' views display divergent implications for the feedback process in writing classes, the studies conducted on students' opinions and attitudes also present disparate results.

By reducing the negative effects of marking errors without reducing the benefits of the teacher's diligent efforts, Hyland (1990) suggests 'minimal marking' and taped commentary to make feedback more productive and interactive. The means to 'minimal marking' is by using correction codes. This leaves a space for active correction by the student rather than reading the disheartening correction of the teacher written in red. By decoding the correction symbols, students have the opportunity to identify the mistakes and correct them for reassessment by the teacher.

Jeff Anderson (2008) gathered his useful techniques for editing based on the familiar concept of the grocery express lane. When going to the grocery store one usually has a specific list of what he or she is looking for and this is how he incorporated that idea into writing. The students choose some points such as apostrophes, run on sentences or spelling as a focus. These points can be written on one side of a sheet of paper and on the other is the receipt. After one purchases his or her items he or she receives a receipt to show what was purchased. The idea with the receipt side is that the students then look specifically at the points they selected and find examples in their writing as to how they used it correctly or incorrectly. Using this method they are able to quickly “get in and get out” during the editing process. Jim Meyer (2008) suggests that editing can be done at two levels. The first level would entail of typing the text onto word processing software in a computer. This strategy is one that is also mentioned by Eldridge (2008). On the computer the student could then use the spell check function to correct words that are misspelled or sentences that are incomplete. The individual can do this type of editing and revising. The problem with relying on the spell check function from the computer is that it may not detect the usage of words. This is where Meyer addresses level two. A peer editing checklist can be made so that someone else checks the writing as well. The checklist can be adapted as the year and mini lessons in writing progress. Along with the technology technique discussed above, Perry and Smithmier (2005) combined the idea of peer editing using Microsoft Word. Incorporated into Microsoft Word is a tool called the Reviewing Toolbar. Perry created a six step “how to” guide on using the toolbar. This toolbar allowed other students to post comments onto another students writing. Not only could one use the spell check function but also others could review it as well and make suggestions or comments about the writing. The original writer could then review the comments made and determine if they would like to make changes or not. Besides using technology and checklists as tools for editing and revising,

DaSilva (2001) incorporated the use of art to assist in revising writing. This is especially useful when being descriptive or attempting to create an image in the readers mind. DaSilva suggests that students paint or draw the sentence that they wrote. This will allow students to elaborate and reconnect with the writing they had in mind. She also states that revision is more than just rewriting what was already there but changing words around, the meaning or even the idea. She states “making a picture can help you do all of that and can take you to more descriptive, beautiful, thoughtful writing” (2001, p. 33) (In Josué Gonzalez, 2009. *Accurate Editing in Student Writing*)

A major focus of research in Intelligent Tutoring Systems (ITS) has been devoted to the identification of feedback strategies that best facilitate student learning. Much of this has studied one-on-one tutorial interactions in sciences domains. In contrast, relatively little effort has been devoted to understanding effective feedback strategies for foreign language teaching. ITS systems for foreign language learning have incorporated Natural Language Processing (NLP) techniques to analyse learners' language production or model their knowledge of a foreign language, in order to provide learners with flexible feedback and guidance in their learning process. These systems use parsing techniques to analyse the student's response and identify errors or missing items. This allows systems to produce sophisticated types of feedback, such as meta-linguistic feedback and error reports, to correct particular student errors (Dodigovic, 2005; Trude and Schulze, 2007).

In regards to feedback types, some studies indicate that students prefer comments on content and ideas rather than on grammatical errors (e.g. Semke, 1984; Zamel, 1985). Yet, other studies show that students demand feedback on their grammatical errors (Leki, 1991; Ashwell, 2000; Lee, 2005). Still, there are also results indicating that students expect various types of feedback including content-related, grammatical and organizational aspects (e.g. Radecki and Swales, 1988; Ferris, 1995; Lee, 2005). Most of the research in the field, on the other hand, meets on the ground that

students and teachers need to agree on the effective feedback types and strategies (Leki, 1991; Raimes, 1991; Saito, 1994; Schulz, 1996, 2001; Diab, 2005; Plonsky and Mills, 2006). However, studies have also revealed that such a match in the preferences does not come naturally. When there is no prior investigation, pre-planning or training, a match in the feedback preferences of students and teachers is almost circumstantial (Saito, 1994; Hyland, 1998; Diab, 2005; Montgomery and Baker, 2007). However, when students are included actively in the process of defining the scope of feedback, the chance of meeting both students' and the institutions' needs may increase. (e.g. Plonsky and Mills, 2006). Moving from these discussions, it seems that adopting a strategy for feedback based on the outcomes of other learning contexts may not meet the specific needs of our students. As Joughin (2008) states, when teachers expect students to understand the academic standards of the learning situation and to try to improve their performance based on teachers' judgments on their current achievements through feedback, they may fail to consider that professional or academic standards are not always clear for students since these standards are derived from context-free theoretical perspectives. Therefore, rather than meeting the pre-specified learning and teaching standards, students may benefit more from feedback which is based on the specific setting and the contextual constraints such as linguistic, educational, socio-economic and cultural background of the learners to suit their specific needs (e.g. Hamp-Lyons, 2001; Amrhein and Nassaji, 2010; Bailey and Garner, 2010). Since the way they receive feedback will determine students' course of action and the possible subsequent learning (Black and Wiliam, 1998), teachers need to acknowledge the importance of student involvement and place room for their needs and preferences (Hyland, 2010). To achieve this, there should be a dynamic interaction between the teacher and learners to communicate the needs and the expectations of both parties. A good number of studies suggest that students are eager to gain opportunities to voice their needs and to

experiment with different feedback options (e.g. Leki, 1991; Master, 1995; Wiliam, 2001; Lee, 2007).

Indeed, the prompting strategies seem to promote more constructive student learning in a tutorial context (Chi et al., 2001) because they encourage the student to respond more constructively than when the teacher gives a simple repetition of the answer or a correction of the error. Initially, the feedback produced by CALL systems was limited to simple error messages, using a “wrong-try-again” approach to interaction that offered little information about the nature of the learner's errors.

According to Garret (1995), four types of feedback are proposed for treatment of error:

- Feedback that presents only the correct answer.
- Feedback that pinpoints the location of errors on the basis of the computer's letter-by-letter comparison of the student's input with the machine's stored correct version (pattern mark-up).
- Feedback based on analysis of the anticipated wrong answers. Error messages associated with possible errors are stored in the computer and are presented if the student's response matches these possible errors (error-anticipation technique).
- Feedback based on a natural language processing (NLP) approach, such as the “parsing” technique, in which the computer does linguistic analysis of the student's response comparing it to an analysis derived from the relevant grammar rules and lexicon of the target language, and identifies problematic or missing items of the student's response.

Truscott (1996) states that “teachers and researchers hold a widespread, deeply entrenched belief that grammar correction should, even must, be part of writing courses” (p. 327). Many others agree that most teachers hold beliefs about the essential value of grammar feedback (Ferris, 2002; Leki, 1990; and Zamel, 1985). Silva (1990) asserts that a process writing teacher's role includes helping students learn to edit (p. 15). However, several studies have also noted that giving grammar

feedback is a time-consuming undertaking (see Ferris, 1999, 2002; Leki, 1990; Truscott, 1996; and Zamel, 1985). Self-editing may help mitigate this problem. In addition to positive teacher views on error feedback, many studies have revealed a strong belief in the value of error feedback on the part of students; it is sometimes valued to the point where students expect it in writing classes (Bates, Lane and Lange, 1993; Diab, 2005; Ferris, 1999, 2002; Ferris & Roberts 2001; and Truscott, 1996). To go a step further, many students admit they feel they need this feedback in order to improve their drafts, and this result in some students becoming overly dependent on it (Diab, 2005; Ferris, 1995b, 2002; and Truscott, 1996). A survey by Leki (1991) even found that 63 out of 100 students named their teacher as the most helpful source of assistance with errors (p. 207). In addition, 93 of those students said that having a teacher point out errors for them was “very important” (p. 206).

The field of corrective feedback stems out of the inter-language approach, in that teachers are looking at students and their idiosyncratic structures. Ellis (2009) developed a useful typology that summarized the possible ways a teacher might correct errors. This study heavily used this typology as a means to analyse teacher corrective feedback. With new technologies and applications for writing, it has become easier to analyse teachers’ feedback and compare them with each other, as will be explained. In sum, from contrastive rhetoric to corrective feedback, SLA has added a great deal of research in which L2 teachers must choose from to develop their methodology. Corrective feedback, by nature, acts as a reactive measure to highlight and address learners’ weaknesses in their written production. This process can be burdensome to teachers due to time constraints and the necessity to prioritize feedback of various error types. As one potential solution, pre-emptive measures can be taken to raise learners’ awareness of the typical errors made at their proficiency level, to help them avoid making the same mistakes in new pieces of writing (Long & Robinson, 1998; Ellis, Basturkmen and Loewen, 2001). At the same time, such pre-emptive measures can help

complete the learning-writing-feedback-revision cycle. This is where the process of self-editing can play a role in L2 writing, because unlike passive corrective feedback, learners will be required to identify and correct errors actively in self-editing activities.

Blogs can be used as online personal journals and electronic portfolios. They can be used as a new assessment tool in the classroom because by their nature, blogs keep recording postings by learners, and teachers can check how much the postings have improved in terms of content and grammar. In addition, students feel responsibility for their writing because they are writing for real audiences (Godwin-Jones, 2003; Ducate & Lomicka, 2005). Eventually, learners might be more careful in terms of selecting formal grammar or writing styles in their postings.

### **2.2.10 Self-Editing Using Mobile-Assisted Language Learning**

Mobile devices make possible assessment-centred learning as well by enabling the provision of continual feedback throughout the learning process, presenting learners with diagnosis and formative guidance as to what might be improved or what might be learned next. Moreover, in providing prompt feedback, M-Learning maintains the appeal of learning and provides a motivating factor that can at times be lacking in traditional modes of education (Geddes, 2004). Electronic comments and correction of this type differs from handwritten marking in one significant way—namely that it can be acted on instantly without the student having to find a fresh sheet of paper, rub things out, or make clean copies, etc. A click of the mouse accepts or rejects the changes. Typing is immediately 'clean' and a piece of correct writing can emerge within a very short space of time. (Harmer 2002)

To find out the effect of mobile phones on self-editing, Cheng, 2004 suggests that Blog writing can be helpful to overcome these concerns because of its asynchronous and flexible nature. As Campbell (2003) puts it, there exist three types of blogs that can be integrated into writing

classes, namely, the blog prepared and monitored by the instructor, the self-blogs of the students monitored by them individually and the class blog that is open for the students' idea sharing under the monitoring of the teacher. It does not matter which type of blogging is used as a tool in writing classes since any of them provides real audience and a collaborative environment. Thus, they can interact, receive/give feedback on each other's pieces of writing (Barlett-Bragg, 2003). Moreover, becoming bloggers help learners to develop organizational and monitoring skills together with self-reflectivity and self-efficacy. As Bandura (1997) suggested, human competence is highly dependent on self-efficacy and the mediation between beliefs and behaviours are created by self-efficacy. The strong positive correlation between self-efficacy of learners and their achievements in their language learning has been proved in the field (e.g., Schunk, 1981; Pajares, 2003). According to the self-efficacy theories, when students perceive high self-efficacy, they try harder and use the knowledge and skills they have (Kim and Lorschach, 2005). Therefore, the efficacy level of students in the writing classes is a strong determinant of their writing skill development and achievement. Despite the growing number of self-efficacy studies in academic areas, such as Science and Mathematics, less attention has been given to writing skill courses in foreign language contexts. As Schunk (2003) stated that in order to improve writing performance, subject matter knowledge, skills and high-efficacy are the prerequisites to improve writing performance. There are many studies identifying the positive and facilitative role of making use of blogs in writing classes of different levels (Bernstein, 2004; Wu, 2005; Arani, 2005).

Stead (2005) believes that M-Learning seems to have a place at all stages of the accepted learning process.

a) Engage: The original M-Learning project focused on the engagement of reluctant learners. The novelty and status of the devices, as well as the visual and auditory appeal of the materials seem to be key factors (Stead, 2005).

b) Assess: Using m-learning to assess skills has several advantages:

- You can use the devices privately and in your own time.
- M-learning assessment is less threatening than paper-based screeners and initial assessments for new learners.
- M-learning is not as frightening as computer-based assessment.

c) Teach: M-learning uses innovative and developing technologies. It is clear that m-learning has a role in assessment and in practice. There is some evidence that being able to look at learning as many times as possible might be the ideal way for some learners to understand a concept.

d) Practice: Since material is accessible on learner's phone, he or she is in a better position to practice the material. Whenever learners have a spare five minutes, they can use it to practice some learning.

e) Assess: Formative assessment can be carried out using mobile technology, privately and independently.

### **2.2.11 Related Studies**

Stockwell (2010) compared the vocabulary learning performance and vocabulary gains from pre-intermediate learners of English when using mobile platforms and computers/laptops. His study's results indicate that there were no consistent differences on vocabulary activity scores or vocabulary learning improvements between the two groups.

Kalman (2015) carried out a research to examine how younger and older adults approach simple and complex computerized writing tasks: writing tasks that were completed on a computer.

Typing speed, quantitative measures of outcome and process, and self-corrections were recorded. The results suggest that the approach to the task was different across age groups, either because of age or because of cohort effects. Older adults who typed fast also edited more, whereas younger adults edited their texts regardless of their typing rate; younger adults who took more time to complete the tasks used more delete keys compared to the other keys and edited more.

Li and Hegelheimer's study (2013) examined the development and implementation of a web-based mobile application, Grammar Clinic, for an ESL writing class. The results indicated that the learners' performance on Grammar Clinic was positively correlated with their score gains between pre- and post-tests of grammar.

The Self-editing application (White Smoke) was used for the purpose of the study. The participants of the study were 18 students in the 2nd level of English Department, University of Bisha, Saudi Arabia. The participants were randomly selected to participate in the study. In order to achieve the objectives of the study, a quasi-experimental study was designed, with pre-and-post test for the research subjects. The results of the study revealed statistically significant differences in self-editing in the two areas of grammar and punctuation but no statistically significant differences were revealed in the two areas of spelling and capitalization. (The Effect of Mobile Phone Applications on Improving EFL Learners' Self-editing. Baleigh Qassem Al-Wasy1 & Hassan Saleh Mahdi. 2016).

A relatively rare example of learner-led mobile language learning activity is reported by Song and Fox (2008), who tracked advanced learners of English to see how they were using a mobile device to support and extend their learning in self-directed ways, especially to build their knowledge of vocabulary.

Michelsen (2008) proposes the design of a mobile, game based, digital revision space which is learner-centred, self-directed and based around a virtual community of practice, enabling second language learners to revise on the go for the challenging third paper of the Cambridge First Certificate in English exam.

Some empirical studies have focused on the effect of mobile devices on writing in general and self-editing, in particular. Most existing studies related to MALL have considered vocabulary-related research (Godwin-Jones, 2011). For example, Lu (2008) conducted a quasi-experimental study on the effectiveness of English vocabulary learning through mobile phone short message service (SMS) lessons for a group of 30 high school students. A tool to learn German based on Computational Thinking.

**CHAPTER THREE: RESEARCH FRAMEWORK AND METHODOLOGY**

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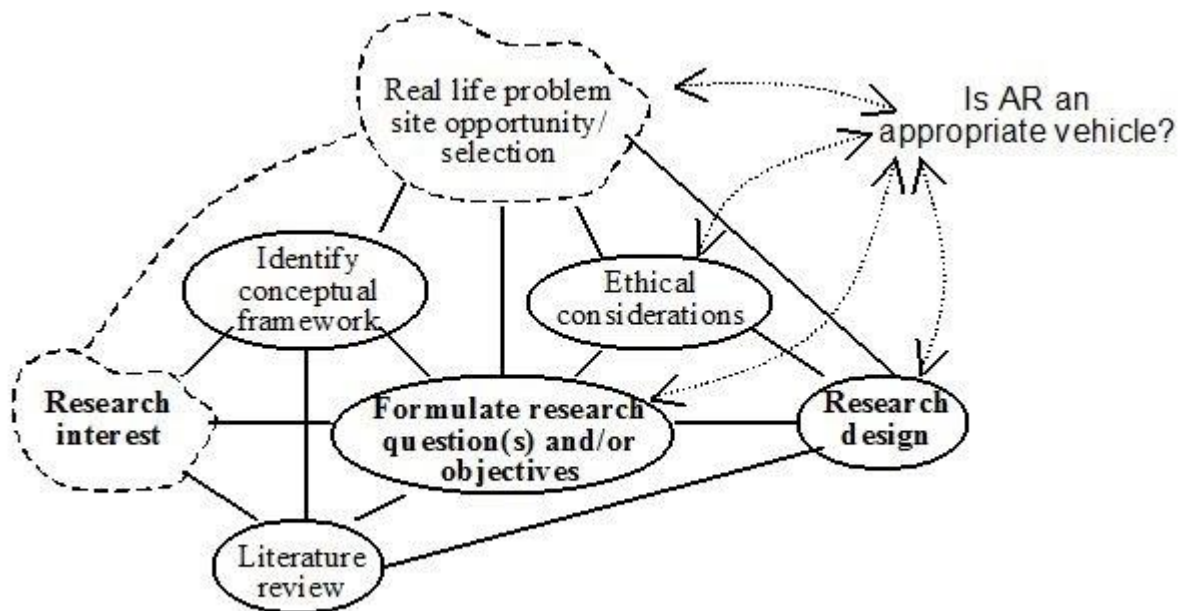
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## CHAPTER THREE

### RESEARCH FRAMEWORK AND METHODOLOGY

#### 3.1. Introduction

To suit its theoretically mentioned claims in the prior chapter, the methodical framework describes the feasibility of the inquiry followed in gathering the necessary data that serves the present research questions. Therefore, the chapter displays the research approach that, in turn, proceeds from the nature of the research. A description of the population and the selected sample, the research instruments and data collection procedures, as for the analysis of the findings will be provided. As to prove the quality of the process, issues of trustworthiness, confidentiality, validity, and reliability are to be magnified at this segment.



**The "Warm-up" Phase of Action Research Design (McKay and Marshall, 2002)**

*Figure 6.* The "Warm-Up" Phase of Action Research Design

### **3.2. Research variables, Questions and Hypotheses**

Taking into consideration that the initial phase of an action research necessitates working on a problem that is to be narrowed the mostly possible, finding of the randomly observed classes, the intact sample's focus interview and teachers questionnaire were found to provide an accurate caption of the problem that inspects the research prime components. After getting to the process of locating the issue, the research concern under scrutiny has been entitled: The Use of Mobile Assisted Language Learning to Foster Students' Self-Editing in Sentence Writing.

#### **3.2.1. Research Variables**

**3.2.1.1. Independent Variable:** The use of MALL in EFL classes

**3.2.1.2. Dependent Variable:** students' self-editing in sentence writing

#### **3.2.2. Research Questions**

1. What Effect does MALL exert on the students' efficacy of self-editing?
  - 1.1 How do teachers and learners perceive the integration of MALL in the classroom?
    - 1.1.1 To what extent teachers and learners are aware of the potential uses of MALL?
  - 1.2 What are the roles of teachers and learners when MALL is adopted?
  - 1.3 What are the challenges that confront the implementation of MALL in EFL Classes?

#### **3.2.3. Research Hypotheses**

##### **3.2.3.1. Alternative Hypothesis 01**

**H<sub>A</sub>:** There will be significant differences in the intact group's self-editing before and after the integration of MALL.

### **3.2.3.2. Null Hypothesis 01**

**H<sub>0</sub>**: There will be no difference in the intact group's self-editing before and after the integration of MALL.

### **3.2.3.3. Alternative Hypothesis 02**

**H<sub>A</sub>**: The subjects' perceptions of the writing performance will be significantly different before and after the treatment, MALL, among the subjects.

### **3.2.3.4. Null Hypothesis 02**

**H<sub>0</sub>**: The subjects' perceptions of their writing performance will not be different before and after the treatment, MALL.

## **3.3. Research Framework**

To endorse the current research demeanour, named in students Self-Editing (SE), and to ascertain the soundness of mobile technologies as an intervention, a quasi-experimental action design is found integral with what Davis et. al (1989) supervised in their Technology Acceptance Model (TAM). The latter had its origins in the Theory of Reasoned Action (TRA) by Fishbein and Ajzen (1988), which recognizes situations that limit the influence of attitude on behaviour, as it captures the actual use of a determined system.

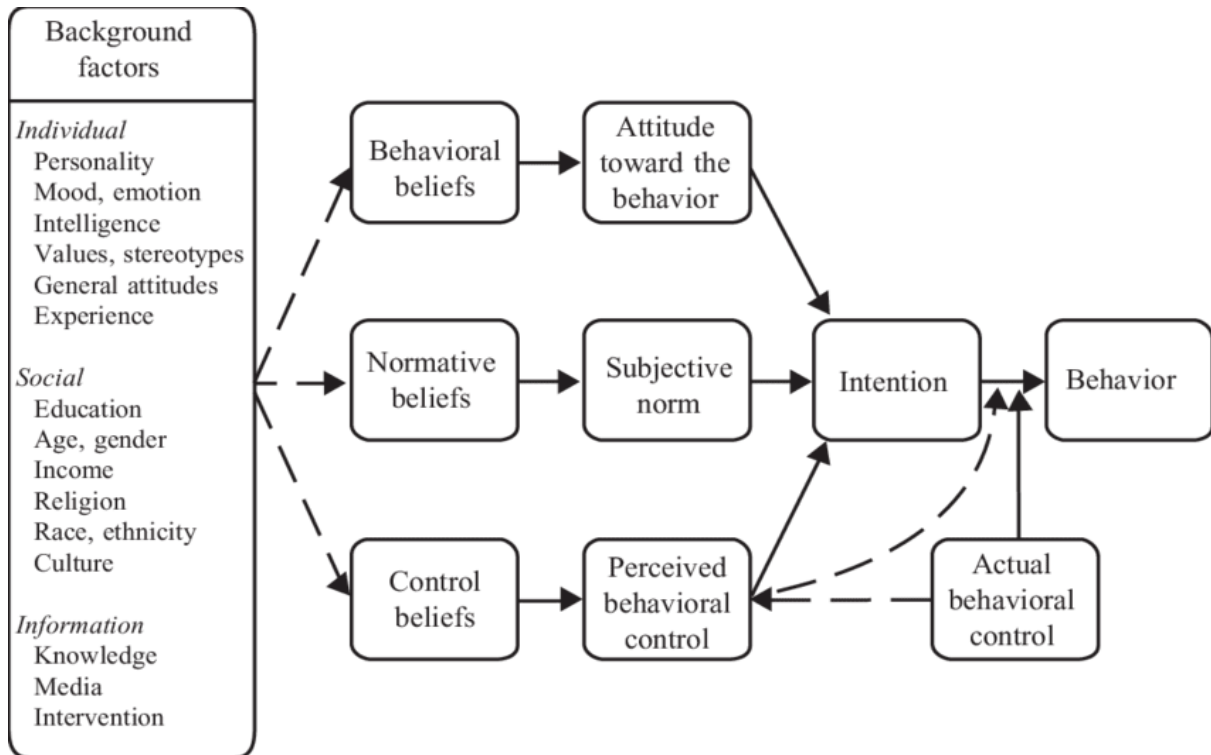
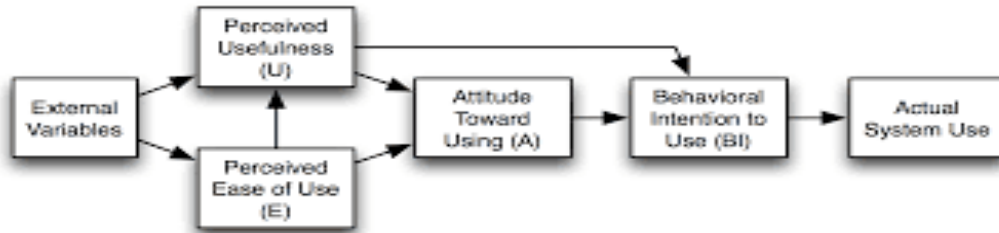


Figure 7. Research Framework

As not only a common theory for describing peoples' openness to ICTs but also its proven efficiency (Lee et al., 2003), TAM has had received 698 citations in the Social Science Citation Index, establishing its magnitude, validity and reliability in information and communication systems (Lee et al., 2003. Cited in Dizon, 2016). Otherwise, the findings of the preliminary phase investigations of the present work secured the External Variables (EV), in the first stage of the inquiry, and captured both Perceived Usefulness (PU), the degree to which a person believes that using a particular system would enhance his or her performance, and Perceived Ease of Use (PEoU), the degree to which a person believes that using a particular system would be free of effort (Davis, 1989). Out of the PU and PEoU check, Attitudes towards Using (AtU) and Behavioural Intention to Use (BI) have been determined

(as detailed in the exploratory phase) and, thirdly, to serve out the Actual System Use (ASU). TAM was therefore elected as the framework for this treatise.



*Figure 8.* Research Framework

For the espousment of the theoretical framework (TAM) with a fit methodology, an intervention of the researcher, as dictated in TAM, a treatment should apply to scope the ASU. Having the independent variable (MALL) manipulated to see how the dependent (SE) varies accordingly, and whose changes are to be measured by the researcher, imposes an experimental research design. Moreover, the framework, in prospect, necessitates an interactive method for the integration of the researcher's intervention, named in a MALL system for SE.

### **3.4. Action Research Design and Teachers' Development**

Action research is designated as a research device that can solve the classroom problems in an objective and systematic way and whose scope is modifying and improving the teaching process (Singh, 2006). The concern and origin of action research relates to the field of social psychology which was being used in education since 1926 as pinpointed by Buckingham and Stephen M. Corey, in the latter's book "Research for Teachers ( as cited in Singh, 2006). The conformity of the present research problem, purpose and investigator endorses Singh's main objectives of an action research. Accordingly, the problem should be

much localised, narrow, practical and directly associated with the investigator, in person, and with the purpose of fostering the classroom teaching process. Gabryś-Barker (2011) claims that the main reasons for carrying out action research projects are “promotion of teacher development and his/her autonomy, thus making him/her a more aware, effective and successful teacher”(p 15).

Regardless of the teachers’ actual acquaintance with the teaching practices and expertise, action research is designated to raise the sense of a the teacher- researcher who caters for his/ her idiosyncratic professional development (Little 1995). Put together, the traits of its procedures can apply for all sorts and levels of teachers’ action as a remedy or betterment of an issue witnessed in one’s very classroom. In this vein, Wallace (1998) sees an action research as a method of professional self-development which involves the systematic collection and analysis of data related to practice.

### **3.5 Experimenting in action research**

The integration of an experimental design in behavioural studies and applied linguistic studies has long been known of considerable challenge; yet, Dornyei (2007) contends that an experiment could be claimed to represent a research continuum at its most scientific. That is, experimental studies in action research could avail the aim of enabling teachers to evaluate or justify their choices concerning classroom instruction by testing hypotheses related to contextualised pedagogical issues. Given that, research related to investigating language classrooms behaviours is said to turn empirical by means of testing a hypothesis from theory to practice, by dint of experimental method (Brzeziński 2008). The latter’s position in the SLA field is viewed as a psychometric research norm that is to be taking place at the end of any qualitative-quantitative research methodologies, as introduced by Larsen-Freeman and Long

(1991). The potential challenges of the incorporation of the experimental research methodology into action research can be surmounted; in Mertens's (2005) words, "when the two approaches are perceived as complementary rather than contradictory and an experimental investigation is designed as part of a mixed methods study, where qualitative and quantitative methods of data collection and/or analysis are combined to increase the strengths and eliminate the weaknesses of its component methodologies" (cited in Dornyei, 2007, p164).

Therefore, the present quasi-experimental centres its data collection tools and analytical procedures around the posed research questions; wherein, action research in language learning requires a verification of a hypothesis (Bielska, 2011) with a mixed method case study investigation.

### **3.5.1 Case Study Method**

Under the aim of developing classroom awareness, the case study method represented in this research as an intact group conforms to what Kemmis and McTaggart (1988) pointed out in their explanation of an action research as teachers' individual inquest. The distinguishable features that could bring about the soundness of case studies in action research design have enumerated by Edge (1993). Among which are when:

- Information is brought from the front line.
- Learners are sources of information.
- Research is relevant to the teacher's own classroom.
- It means learning about language learning.
- It means learning through research (teachers become researchers).
- It influences decision making, thus autonomy

Further, Yin (2003) has affirmed that a case study method can be fulfilled when the research framework hovers around the following issues; all of which are prerequisite in responding to the research questions. Being elucidated, the focal interest should: encompass answering the “how” and “why”, manipulate the behaviour of those involved in the study, and develop contextual conditions because they seem relevant to the phenomenon under study (ibid).

To conclude, it has been manifested that experimental and quasi-experimental case studies have been proven successful when led inside and/or outside language classrooms, for they could generate a large body of reliable findings (Bielska, 2011).

### **3.5.2 Time-Series/Single-Subject Experiment**

The constraints detailed in the section of research delimitations represented in the longitudinal trait of an action research, the intact case study method, added to the impracticality of seeking a control group with another investigator have featured this design by means of which the treatment is conducted. In such of experimental designs, the sampled subjects who are exposed to a treatment are, themselves, the control group.. Hence, this research assumes to examine the change of the intact sample’s behaviours, attitudes and achievements in which informants are subject to more than two pre-tests and more than two post-tests at certain intervals before and after the introduction of the treatment. According to Bielska (2011), the major advantages lay on the fact that the learning process is objectively documented in such a longitudinal design; additionally, the levels of research validity and reliability are enhanced when the threat of using a non-equivalent groups is eliminated.

### **3.6 Description of the Research Setting**

The research has been fulfilled across Mohammed Lamin Debaghine, Setif 2 University. The latter is constituted of three institutional divisions: humanities and social sciences, letters and languages, and lately laws and political sciences. However, the investigation is constrained to take place in the department of English language and literature which, in the academic year 2019/2020, consists of more than 1200 students segmented among Licence and Master's cycles. As a provision of the teaching staff to cover that number, the department comprised 61 teachers in both cycles and in different majors. The temporal extension of this study was the interval from fall 2019 to fall 2020. Worth mentioning, the academic season was exclusively prolonged by virtue of the pandemic conditions to which the world has been exposed. Correspondingly, the study could endure to serve the longitudinal considerations to be treated.

### **3.7. Population and Sampling Procedures**

The population targeted for this study requirement is the body of first year level students enrolled in the department of English language and literature at the University of Mohammed Lamine Debaghine- Setif 2. This population is composed of 382 freshmen who are registered as fully first year students, in addition to 112 senior students who are registered as having credits to be recuperated who are meanwhile enrolled in higher levels. Therefore, the sample of this inquiry is carefully selected from the population of full first year students to partake in the subsequent phases. In the preliminary stage, 125 students from four (04) different convenient classes have been under a classroom observation; additionally, a Focus Group Interview (FGI) has been conducted with 77 of them. Therewith, thirty (30) questionnaire copies and electronic Google Forms versions have been administered; but at the

latest, only 21 could be considered due to non-answered, unclear or missed copies which, thence, were disregarded. In accordance with locating the problem and the methodical framework, the experimental stage was carried out with thirty five intact cohort (n=35), who are meanwhile the treatment group and the control group in time series. This single-subject, or in Lodico et al (2006) words A-B-A-B, design appropiates a limited sample of informants who are to be belonging to the same class and are to be taught by the same teachers, the investigator. The motive of opting for such a sample is sought for its applicability with what has been priorly demonstrated as the core of an experimental, time series, action research design. The aim of this design is to introduce the change occurring in a well-defined context or teacher's classroom; thus, the type of non-probability assignment of the incidental cohort would not seek generalizability of the outcomes to another population, whatsoever.

### **3.8. Data Collection Procedures**

As an endeavour to locate the problem and capture any of the intervening variables, the preliminary phase endured for six (06) weeks, precisely from September 22nd to November 3rd, 2019. Likewise, they have been studying the module of Written Expression (WE) in two sessions of one hour and a half, which is the overall of three hours a week. At this due time, four (04) classroom observation sittings with four distinct classes and teachers have been carried out. To have an accurate vision of their observed behaviours and to secure the potentiality of any extraneous variables, an FGI was held with 77 of those students while a questionnaire was administered to 21 teachers.

Throughout its experimental phase, the study is realized with the measurement of two baseline periods and two treatment periods. The collection of each treatment data could not have been less timely for the stability of the behaviours to be secured. The first treatment

period was, preceded with a baseline period (from October 17th to November 21st, 2019), covered along four fortnight tests out of eight weeks (from November 28th, 2019 to January 23rd, 2020) utilizing the intervention of the mobile self-editing strategies. On that spectrum, each of baseline periods followed the two intervention ones; both of which partook twelve weeks. As a follow-up, a replication of the intervention introduced a mobile application (iWRight Go) that enclosed the needed features of self-editing derived from the previous investigations with students and whose conformity is systematically certified. Eventually, four tests have been set up on a ten-week schedule (from June 25th to September 03rd, 2020).

### 3.8.1- A B A B Research Calendar

Table 10 *A B A B Research Calendar*

| Phases of the Action Research                                      | Activities and Tasks                                   | Timeline                           |
|--|--|------------------------------------|
| <b>Preliminary</b><br><br>Initiation and Preliminary Investigation | <b>Exploring the topic and identifying the problem</b> | <b>Sept.22nd to Nov.03rd, 2019</b> |
|  | Questionnaire for Teachers                             | Sept.22nd to Oct.07th, 2019        |
|  | Focus Group Interview with Students                    | Oct.07th to Oct.09th, 2019         |
|  | Classroom Observation                                  | Oct.13th to Oct.15th, 2019         |
|  | <b>Analysis of the Preliminary findings</b>            | <b>Oct.14th to Nov.03rd, 2019</b>  |

|                             |  |  |
|-----------------------------|--|--|
| <b>Introduction of MALL</b> | Using Mobile Technologies inside and outside the Classroom<br>Collection of students Google mails<br>Creating a Google Classroom<br>Devising a Facebook and a Messenger Group<br>Introducing the Google Meet | <b>Oct.17th, 2019 to Nov.11th, 2020</b>  |
| <b>Experiment</b>           | <b>Pre-Questionnaire (Subject-Placement)</b>   | <b>Oct.17th to Oct.19th, 2019</b>  |
| Hypothesising               | <b>Baseline Period 01 (A)</b>  | <b>Oct.17th to Nov. 21st, 2019</b>   |
| Intervention 01             | 1st Test<br>2nd Test<br>3rd Test   | October 24th, 2019<br>November 07th, 2019<br>November 21st, 2019   |
| Evaluation                  | <b>Treatment Period 01 (B)</b><br>Intervention of Mobile Self-Editing Strategies<br><br>1st Test<br><b>Winter Holidays</b><br>2nd Test<br>3rd Test<br>4th Test   | <b>Nov.28th, 2019 to Jan.23rd, 2020</b><br><br>December 12th, 2019<br><b>Dec.19th, 2020 to Jan.04th, 2020</b><br>December 26th, 2019<br>January 09th, 2020<br>January 23rd, 2020 |
|                             | <b>Baseline Period 02 (A)</b>  | <b>Feb.09th to March</b>   |

|  |   |  |
|--|---|--|
| Intervention 02  | 1st Test<br>2nd Test<br>3rd Test  | <b>19th, 2020</b><br><br>February 20th, 2020<br>March 05th, 2020<br>March 19th, 2020 |
|  | <b>Spring Holidays</b>  | <b>March 19th to April 04th, 2020</b>  |
|  | Extending the Holidays Due to COVID-19 Quarantine<br>Adopting Online Education through Launching the University Moodle    | <b>April 04th, 2020 and thenceforth</b>  |
|  | Reviewing the Previous Lectures on Google Meet  | <b>April 30th to May 21st, 2020</b>  |
| Evaluation, Dissemination and Follow-Up of MALL for Self-Editing | <b>Treatment Period 02 (B)</b><br>Resumption of the WE Classes on Google Meet with Mobile Self-Editing Strategies         | <b>June 25th to Sept.03rd, 2020</b>  |
|  | 1st Test<br>2nd Test + <b>Introducing the iWRGo App</b><br>3rd Test<br>4th Test   | July 2nd, 2020<br>July 23rd, 2020<br><br>August 13th, 2020<br>September 03rd, 2020   |
|  | <b>Use of:</b><br>Mobile Technologies inside and outside the Classroom<br>Google Classroom, Facebook and Messenger Groups | <b>Sept.10th to Nov.11th, 2020</b>   |

|                                  |   |   |
|----------------------------------|---|---|
|                                  | Google Meet<br>Using iWRG App   |   |
|                                  | <b>Post-Questionnaire</b>   | <b>Sept.13th to<br/>Sept.15th, 2020</b> |
| <b>Follow-Up</b> Post-Experiment | Using iWRG App<br>Resuming the Presential Classes through<br>the Precautionary Protocole of Batches | <b>Nov.02nd to<br/>Nov.11th, 2020</b>   |

### 3.9- Research Instrumentations and Piloting Procedures

Data have been brought forward through the adoption of a mixed method approach; thus, findings resulted from both quantitative and a qualitative research instruments. As declared by O' Brien (2001), action research is more of a holistic approach to problem-solving, rather than a single method for collecting and analysing data. Accordingly, these various methods, which are generally common to the qualitative research paradigm, include: keeping a research journal, document collection and analysis, participant observation recordings, questionnaire surveys, structured and unstructured interviews, and case studies (ibid).

#### 3.9.1. Initiation and Preliminary Investigation Stage

The preliminary findings derived from the quantification of teachers' responses to a structured questionnaire, a record of a focus group Interview and an analysis of a classroom observation grid. The aims of this stage are to explore the dimensions of the research topic and

diagnose the problem from that topic in its context (Nunan, 1992) then decide on its intervening variables that could be secured.

### **3.9.1.1. Questionnaire with Teachers**

Twenty-eight (28) items varied from closed to open-ended as well as five-point Likert scale questions sought out teachers' standpoints towards ICTs in general and MALL in particular (Appendix A). Having accomplished its piloting versions, the overall estimate of the questionnaire's reliability has demonstrated a good coefficient where the Cronbach's  $\alpha$  reached a 0.835. The following are the rectifications that corresponded to piloting process that have been reviewed by five teachers.

- a- Turning closed ended items to open ended ones
- b- Devising a scale for questions of consent and/or regularity
- c- Adopting multiple choices and adding "Other" option to some items
- d- Switching the simple past tense of verbs into present perfect

### **3.9.1.2. Focus Group Interview with Students**

From a different angle, the researcher made an attempt to showcase students' demeanours towards the use ICTs in general and mobile ones in particular. As pinpointed by Dornyei (2007), interviews are meant to triangulate the study through corroborating the same findings using different methods. Given that, a semi-structured, thirteen-item focus group interview (Appendix B) has been discussed with 77 students as the practically convenient sample. Earlier than resulting in thirteen questions among open and closed ended, this research instrument has been initiated with two groups of students, ten (10) participants in each of them, and went out of a four-teacher piloting which raised the points below in overall.

- a- Suggesting details to some open items such as justifying answers by adding scope and duration
- b- Dropping some questions that have not been triggered by students
- c- Writing and reading in full words the acronyms and abbreviations (EFL, MALL, ICT,...)
- d- Switching some closed ended questions into open ended ones
- e- Suggesting simplified versions to certain items

The preliminary set of structured questions that have been investigated together with the study informants appear in the form below.

### **3.9.1.3. Classroom Observation**

As an integrative adjustment of the two acting parties inside the classroom, an observation grid suggested by Glanz (1998) has been adopted as being said to portray the teachers and students behaviours in the vey context. In his *Action Research: An Educational Leader's Guide to School Improvement*, the author stresses on five matters that are to be spotted for the realization of a classroom observation.

- a. The scope and essence of the observation
- b. The activities led in the teaching-learning process
- c. The social interactions
- d. The Teachers' and students' talks to each other
- e. Focused Investigation of individuals, events, setting, and circumstances.

Wysocka (2011) states that there are many purposes for observations; It can be put to use in case of supervision, inspection, a widely-understood teacher training or just an on-going teacher development, school-based support, and the improvement of teaching and learning in the classroom context” (p 54). For the reason of verifying the working hypothesis and securing

any intervening variables (Wysocka, 2011), the research have made use of Chaudron's (1990) 'Descriptive Model for the Corrective Treatment of Learners' Errors' whose original script is exposed below.

Table 11

*Ad Hoc Observation (Chaudron, 1990)*

\* Asterisk indicates acts that occur as approving feedback, although they resemble the analogous correcting feedback acts.

| <b>Feature or type of 'act' (F and/or T)</b> | <b>Description</b>   | <b>Example of exponent of expression</b> |
|--|--|--|
| IGNORE (F)                                   | Teacher (T) ignores Student's (S) ERROR, goes on to other topic, or shows ACCEPTANCE* of content.                          |  |
| INTERRUPT (F)                                | T interrupts S utterance (ut.) following ERROR, or before S has completed.   |  |
| DELAY (F)                                    | T waits for S to complete ut. before correcting. (Usually not coded, for INTERRUPT is 'marked').                           |  |
| ACCEPTANCE (T)                               | Simple approving or accepting word (usually as sign of reception of ut.) but T may immediately correct a linguistic ERROR. | Bon, oui, bien, d'accord.                |
| ATTENTION (T-F)                              | Attention-getter; probably quickly learned by Ss.  | Euhh, regarde, attention, allez, mais.   |

|  |   |  |
|--|---|--|
| NEGATION (T-F)   | T shows rejection of part or all of S ut.   | Non, ne ...<br>pas.  |
| PROVIDE (T)  | T provides the correct answer when S has been unable or when no response is offered.                | S: Cinquante,<br>uh ...<br>T: Pour cent.   |
| REDUCTION (F)<br>(RED.)  | T ut. employs only a segment of S ut.   | S: Vet, eee ...<br>(spelling);<br>T: Ve . ? ..<br>S: Et c'est bien.<br>T: Us ont pensé que c'était bien? |
| EXPANSION (F)<br>(EXP.)  | T adds more linguistic material to S ut., possibly making more complete.                            | S: Mille.<br>T: Mi He?   |
| EMPHASIS (F)<br>(EMPH.)  | T uses stress, iterative repetition, or question intonation, to mark area or fact of incorrectness. | T: (les auto-<br>routes) n'a<br>pas<br>de feux de<br>circulation.  |
| REPETITION with NO<br>CHANGE (T) (optional<br>EXP. & RED.)                 | T repeats S ut. with no change of ERROR, or omission of ERROR.                                      |  |
| REPETITION with NO<br>CHANGE and EMPH.<br>(T) (F)<br>(optional EXP. & RED) | T repeats S ut. with no change of ERROR, but EMPH. locates or indicates fact of ERROR.              | S: Mille.<br>T: Mille?   |
| REPETITION with<br>CHANGE (T) (optional                                    | Usually T simply adds correction and continues to other topics. Normally only when EMPH. is         | S: Le maison est jaune.  |

|  |   |   |
|--|---|---|
| EXP. & RED.)   | added will correcting CHANGE become clear, or will T attempt to make it clear.  | T: La maison est jaune.                                       |
| REPETITION with CHANGE and EMPHASIS (T) (F) (optional EXP. & RED.) | T adds EMPH. to stress location of ERROR and its correct formulation.   | S: Doo tout...<br>T: Du tout, (stress)                        |
| EXPLANATION (T) (optional EXP. & RED.)                             | T provides information us to cause or type of ERROR.  | S: Uh, E. (spelling 'grand')<br>T: D. Non, il n'y a pas de E. |
| COMPLEX EXPLANATION (T)  | Combination of NEGATION, REPETITIONS, and/or EXPLANATION.   |   |
| REPEAT (T)   | T requests S to repeat ut., with intent to have S self-correct.   |   |
| REPEAT (implicit)  | Procedures are understood that by pointing or otherwise signaling, T can have S repeat.   |   |
| LOOP (T)   | T honestly needs a replay of S ut., due to lack of clarity or certainty of its form.  |   |
| PROMPT (T)   | T uses a lead-in cue to get S to repeat ut., possibly at point of ERROR; possible slight rising intonation.                       | S: Petit. Grande.<br>T: Petit...                              |
| CLUE (T)   | T reaction provides S with isolation of type of ERROR or of the nature of its immediate correction, without providing correction. | S: Les stations-services sont rares.<br>T: Sont rares?        |

|  |   | Au present? |
|--|---|-------------|
| ORIGINAL QUESTION (T)                  | T repeats the original question that tend to response.  |             |
| ALTERED QUESTION (T)                   | T alters original question syntactically, but not semantically.   |             |
| QUESTIONS (optional RED., EXP., EMPH.) | Numerous ways of asking for new response, often with CLUES, etc.  |             |
| TRANSFER (T)                           | T asks another S or several, or class to provide correction.  |             |
| REPETITIONS* (T)                       | Where T attempts reinforcement of correct response.   |             |
| EXPLANATION* (T)                       | T explains why response is correct.   |             |
| RETURN (T)                             | T returns to original errormaker for another attempt, after TRANSFER. A type of VERIFICATION.                             |             |
| VERIFICATION (T-F)                     | T attempts to ensure understanding of correction; a new elicitation is implicit or made more explicit.                    |             |
| EXIT (F)                               | At any stage in the exchange, T may drop correction of the ERROR, though usually not after explicit NEGATION, EMPH., etc. |             |

In the process of systematically adapting the model with the single-subject case study, an observation grid has been synopsisized after considering the first preliminary research gaps derived from the outcomes of Teachers' questionnaire and students' FGIs. The first section of the observation grid introduces the main features of classroom management which are, according to Canter and Canter (2001), important when feedback is being observed. Accordingly, teachers would objectively manage students' behaviour in a classroom context. Appendix C is the final version of the checklist which envisioned teachers' treatment of students' errors and any strategy that could have been efficient in that process of feedback.

### **3.9.2- Experimental Stage**

After having the EV explored and both PU and PEOU positively captured (Davis et al., 1989) towards the compatibility of MALL in getting an adequate feedback, students' AtU and BI to use their mobile technologies in self-editing errors is found emergent. With the use of a pre/post-questionnaire covering a series of writing tests, two baselines and two treatment periods unfolded the subjects' ASU of mobile technologies in SE.

#### **3.9.2.1. Pre/Post Questionnaire**

As a transitional step between the items investigated in preliminary stage and the practical assumptions to be revealed subsequently, the structured questionnaire has sought raw data of students' experiences before and after the completion of the current stage. Apart from the three demographic items, the research instrument entailed four sections about the informants' actual writing performance, forms of feedback and editing they get, their readiness to self-edit their errors and their reliance on the mobile-based editing. An electronic Google Forms version of the questionnaires has been shared as a link to make the process easier for students; therefore, their scripts are appended (Appendices D and F).

To systematically sustain the utility and reliability of this questionnaire, a set of four-pilot recommendations have been taken into consideration in addition to the esteem of items internal consistency has derived from the “Good” coefficients of Cronbach’s  $\alpha$ , as they reached  $\alpha = 0.753$  and  $\alpha = 0.845$  respectively (Creswell, 2012).

### **3.9.2.2. Writing Tests**

To evaluate students’ abilities of writing in general and those of editing in particular, the writing tests have been carried out as to concretely sustain any change in the student's performance (with and without the intervention of SE strategies all along the baseline and treatment periods. The tests are scored by means of an adopted guide, Brown’s (2001) Rubric. In addition to the latter, an achievement level scale, from Parrot (1993), was integrated in the rubric to mark their strengths and weaknesses in sentence writing, namely: content, organization, vocabulary, language use (grammar), orthography and mechanics.

Table 12

*Brown's (2001) Writing Test Rubric*

| Categories          | Score | Criteria  |
|---------------------|-------|---|
| <b>Content</b>      | 30-27 | Excellent to very good: knowledgeable; substantive; thorough; development of thesis; relevant to assigned topic.  |
|                     | 26-22 | Good to average: some knowledge of subject; adequate range; limited development of thesis; mostly relevant to topic, but lacks detail.  |
|                     | 21-17 | Fair to poor: limited knowledge of subject; little substance; inadequate development of topic.  |
|                     | 16-13 | Very poor: does not show knowledge of subject; non substantive; not pertinent.  |
| <b>Organization</b> | 20-18 | Excellent to very good: fluent expression; ideas clearly stated/ supported; succinct; well-organized; logical sequencing; cohesive.   |
|                     | 17-14 | Good to average: somewhat choppy; loosely organized but main ideas stand out; limited support; logical but incomplete sequencing.   |
|                     | 13-10 | Fair to poor: non-fluent; ideas confused or disconnected; lacks logical sequencing and development.   |
|                     | 9-7   | Very poor: does not communicate; no organization.   |
| <b>Vocabulary</b>   | 20-18 | Excellent to very good: sophisticated range; effective word/idiom choice and usage; word form mastery; appropriate register.  |
|                     | 17-14 | Good to average: adequate range; occasional errors of word/idiom form; choice; usage but meaning not obscured.  |
|                     | 13-10 | Fair to poor: limited range; frequent errors of word/idiom form, choice, usage; meaning confused or obscured.   |
|                     | 9-7   | Very poor: essentially translation; little knowledge of English vocabulary, idioms, word form.  |
| <b>Language use</b> | 25-22 | Excellent to very good: effective complex construction; few errors of agreement, tense, number, word order/ function, articles, pronouns, prepositions.   |
|                     | 21-18 | Good to average: effective but simple constructions; minor problems in complex constructions; several errors of agreement, tense, number, word order/ function, articles, pronouns, prepositions but meaning seldom obscured.               |
|                     | 17-11 | Fair to poor: major problems in simple/complex constructions; frequent errors of negation, agreement, tense, number, word order/ function, articles, pronouns, preposition and fragments, run-ons, deletions; meaning confused or obscured. |
|                     | 10-5  | Very poor: virtually no mastery of sentence construction rules; dominated by errors; does not communicate.  |
| <b>Mechanics</b>    | 5     | Excellent to very good: demonstrates mastery of conventions; few errors of spelling, punctuation, capitalization, paragraphing.   |
|                     | 4     | Good to average: occasional errors of spelling, punctuation, capitalization, paragraphing, but meaning is not obscured.   |
|                     | 3     | Fair to poor: frequent errors of spelling, punctuation, capitalization, paragraphing; poor handwriting; meaning confused  |
|                     | 2     | Very poor: no mastery of conventions; dominated by errors of spelling, punctuation, capitalization, paragraphing; handwriting illegible.  |

### **3.10. Data Analysis Procedures**

For the accuracy of the multi-faceted data obtained from the named set of research investigations, a deductive approach has been executed to map out the connectivity among the preliminary findings' chronological escort to the process of leading the experiment (William M.K. Trochim, 2006). Such a top-down analysis has run out to support the diverse categories of all that has been gathered as raw attributes from the study subjects. Therefore, the scrutinized categories were methodically assorted via systematic procedures.

#### **3.10.1. Questionnaires Categorical and Scale Analysis**

Earlier in the administration process, questionnaires were electronically shared with the correspondents by providing them an online attachment issued by Google Forms; thus, the responses were automatically processed on a Google Sheet whither both categorical and scale data have been ensued. As far as the numerical data are concerned, the Statistical Package for Social Sciences (SPSS 21.0) and Microsoft Excel 2010 softwares were found to serve the sort of drawn items in terms of the leading coefficients and graphing charts. Ergo, outcomes were codified in figures and tables; therein, a detailed description was provided as to clarify the findings (Oppenheim, 2004).

#### **3.10.2. Interviews Thematic Content Analysis**

As proclaimed by Stewart and Cash (2003) interviews are essential supplementary tools that permit interviewers to extend their knowledge of the areas under enquiry. A thematic content analysis is an explorative method that strives to define patterns of themes that guided the progress of the discussions. In students' preliminary contributions, the focus group discussions was recorded after having granted their consent, yet their answers were transcribed and thematic patterns were allocated. The records have been examined using the VLC media

player for the technical features of manipulating the pace, background noises and audio files conversions. As for the confidentiality of the data provided in the interview, a textual transcription has been accompanied to concretize the analysis of the conceptual patterns.

### **3.10.3. Observation Checklist Analysis**

The observation checklist aids in examining the relationship between the type of interaction pattern and learners' language improvement (Wysocka, 2011). Results obtained from the analysis of observation grids assist in representing the change in behaviours and foster efforts of practitioner observers to continue to improve their professional practices (Sparks and Loucks-Horsley, 1990) inside and outside the classroom. As another sort of content analysis, observations are a perception activity to know how far research reached a determined target (Parrot, 1993). For that to get accomplished, the observed sessions were documented on the basis of an immediate Ad-hoc checklist as a technique that checks off students' behaviours as they occur during a lesson (Glanz, 1998). Meanwhile, recorded versions of the observed classes were kept as a confidential reference for any potential controversy.

### **3.10.4. Writing-Corpus Rubric Analysis**

The series of tests that have been proceeded in the baseline and treatment periods were subject to scrutiny of the Brown's rubric. Endeavouring to evaluate the frequent errors in students writing and to follow their ability to edit them, the writing tests were set on an achievement level scale which has been adopted from Parrot (1993). The scale is found to overlay the content, organization, vocabulary, language use (grammar), orthography and mechanics in sentence writing.

### **3.11. Issues of Trustworthiness and Ethical Considerations**

As proposed by Pilot & Beck, 2014, Trustworthiness in research encompasses the treatment the study's validity, reliability as well as the dependability of the outcomes; thus, it ensures how qualified are the brought about findings. Hence, the interpretation of the latter was exhibited to reflect the validity and reliability procedures. The external validity which names the representativity and generalizability of the findings is exclusive to the enquired population. Yet, Gabryś-Barker (2011) proclaims that:

“The validity of action research is of particular importance to individual teachers. Its results cannot be generalised, but they can be shared and discussed with other teachers and learners to involve them in the teaching/learning processes and thereby make them more autonomous through this shared responsibility for the implementation of change resulting from classroom enquiry”. (p.15)

Put together, the internal validity has brought about the causality in variables those of which have been derived from conducting the three-dimension preliminary investigation. Moreover, the single-subject case study method maximizes validity as the focus was exerted on solely one group. Opting for an experimental design in the present action research is said to be an efficient way to reveal the cause-effect relationships and establish any educational innovations (Dornyei, 2007). With both quantitative and qualitative paradigms, an adequacy of findings in the preliminary phase measurements have proposed a well-supplied piloting to launch the experiment. Accordingly, the research dependability has been sought by mean of the documentation and representation of the instrumentations and their resulted findings. On the other hand, the reliability of a research regards the consistency of results; however, the replication of this research might not be practical, for behavioural case studies are

humanistically known of relativity. Otherwise, a psychometric test of the internal consistency and reliability of measurement scales has proven considerable coefficients of the Cronbach's alpha.

O'Brien (1998) contends that for the reason that action research is carried out in real-world conditions and constitutes communication among the people involved, the researchers have to pay close attention to ethical considerations in the conduct of their work. To maintain the research transparency and confidentiality, the subjects have been informed and broadly made aware of the scope of either of the investigations in which they participated. Thus, they were informed of the confidentiality issues of their contributions which would exclusively be utilized for the research necessities and would by no means be illegally manipulated. Further, the anonymity of the contributors was stated to be attained as a full-privacy. The researcher has provided the participants with a consent form to document their deliberate participation and involvement in the different proceedings of the study; therefore, their contributions have been granted voluntarily.

### **3.11. Conclusion**

As displayed throughout this chapter, the mixed method approach is found to be efficient. For the type of the results, quantitative and qualitative data used in this study are complementary and range equitably. In addition, the choice of the methodology tends to be compatible with the research aims and motives. And the governing issues are thereby discussed and successfully controlled. The population and sampling procedures, the data collection and analysis have been presented as synopsis of the entirely research process. The next chapter introduces a detailed discussion and interpretation processes.

## CHAPTER FOUR: INTERPRETATION AND DISCUSSION OF THE FINDINGS

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## INTERPRETATION AND DISCUSSION OF THE FINDINGS

### 4.1 Introduction

This chapter portrays the process in which data have been analysed and interpreted. A manifestation of the derived findings is to be argued along with the pre and post experimental phases.

### 4.2 Analysis of the Preliminary Phase

Each of the research instruments has undergone an in-depth exposition of the derived findings. The data gathered from the questionnaires have been subject to an SPSS, 22.0 and 25.0 versions, manipulation of measures and associated coefficients. As for the FGI, the recorded audio versions were transcribed verbatim to detect any related issues besides the one under scrutiny. These data flew in three major themes which were allocated to serve the preliminary research interest. The NVivo software was used along the analysis of qualitative measurements and integrated items.

#### 4.2.1 Analysis of Teachers' Questionnaire

The major aim of this questionnaire was to make raw understanding of how MALL is perceived among any other ICT tools across the teaching staff of the English language department. As an introductory part, a spectrum of demographic information has been sought as to document systematically the personal of the study subjects, yielding their age, gender, experience in teaching and the subjects they taught.

Secondly, teachers' knowledge and use of ICTs have been reported to be useful when incorporated in the EFL classroom. On the other hand, there was a remarkable lack of teachers' training on ICTs, as they have reported an 81% rate of not receiving it along their career. Moreover, the sort of the technological tools that mostly utilised by teachers were

found, as reported, PCs and smartphones at approximate ranges of 66.7% and 61.9% respectively. The seemingly springing awareness of those major ICT tools has conversely been confronted with a scarce provision of technological equipment not just in the department where the subjects teach but also in other department across the republic as communicated by 52.4% in addition to a 28.6% of others reporting uncertainty of the presence of such encouragements.

The third section of the questionnaire has had the objective of exploring readiness to indulge in a MALL environment. To this end, all of the informants own smartphones or any other portable devices which were “constantly” connected to the internet by 66.7% and “occasionally” by 28.6%; both of which were found to be frequently used in their language instruction. Although teachers shared an agreement that ICTs in general and mobile ones on in particular are by no means repudiated, hampers impeding the success of MALL in EFL classes are also stubborn. Among the proposed challengers, teachers have mentioned time constraints, traditional furniture of language classrooms, issues of affordance of software and hardware provisions, students’ and teachers’ lack of training and over crowdedness of classes.

To unleash teachers’ attitudes and perceptions of the MALL, the last Likert-scaled section revealed common figures accordingly. Hence, considerable awareness has been reached about the facilities that M-Learning could supply in EFL classes in spite of the fact that certain inconvenience and hindrances may come across its implantation. Subsequently, 69.9% of the teachers have confirmed the easiness of preparing course materials when portable devices are used. While among other rates, the average 47.6% has been the representation of those who believed that students’ interest to learn increases when allowed to

use the mobiles. In overall the prospects that have been initiated from this questionnaire appeared to offer an actual stance of MALL amid the investigated body.

#### **4.2.2 Analysis of Students' FGI Transcriptions**

Before settling on the last script of designed interview, two previous drafts have been undergone with two groups of twelve (12) students. This process aimed at summoning raw data from the spontaneous responses of those preliminary study participants. Further, the progress of the FGI at its both stages has been recorded as to ensure a natural flow of the data as offered by the students. The semi-structured focus group interview in its last morphology redounded with two sections; the first covers the English Language and M-Learning as a comprehensive extension of the theme MALL while the second intensifies the outcomes of first section by attempting motives associated or dissociated with Feedback and Students' Writing in English.

##### **4.2.2.1 Transcription of the Interview**

The findings of the first section revealed a notable homogeneity of responses among the groups which introduces a shared concern of the research's anticipated investigation. According to students, the mostly practised skills in their learning of English were listening and speaking. When requested about the reasons why those ones exactly, responses varied from *...because I do this not just to learn... even in the lecture I record everything to listen...I listen to music and speak with my friends daily... it's not for learning, I enjoy to do this...* etc. However, the most challenging skills have been reported to be writing and speaking; those of which were also expressed otherwise such as *...I have ideas in my head but I cannot write them correctly...It's difficult to know how to write the words...also to pronounce them...I am weak in grammar; I know the tenses but I don't know, to use them...*Etc. Inside or outside the

classroom setting, students answered; *...I use my mobile, ... my cell phone to record, ... my tablets; ...yeah I always use my laptop...etc.* to what sort of technology tools they use when learning. Nonetheless, they have communicated, to an overwhelming extent, their teachers' unacceptance of utilising mobiles during the classes argued to reasons of being distracted from the class objectives. To know more about the aspects that require much effort that of which mobile technology is found to facilitate, three major trends have been transferred such as spelling of words in both their orthography and pronunciation. Others aspects have been posed like all that is related to grammar and vocabulary. Yet, students' adequate use of their mobile devices has come unstuck due to the communicated instability of the internet access in the department where they study. To eventuate the prior items of the current section, informants were asked to share their attitude and perceptions concerning the importance of using mobile devices for their learning of English, be it inside or outside the classroom. As a result, almost all of the groups have agreed on the importance of using mobiles in their learning for their on-the-go facilities that those devices supply. However, fewer trends went for exposing the deficiency or the distraction that those technologies might bring about; on their tongues *...of course it's useful... I use it without the knowledge of teachers though... ...I wish teachers know that we need our smartphones... one time, I was kicked out because I checked time on my iPhone... sometimes, I agree with teachers for not allowing mobiles...I personally feel annoyed of social media tones when are studying...etc.*

The second section, on the other hand, is more focused and comes to develop the patterns that have been ensued by the subjects of this investigation. To reconnoitre the factors that led the major appearance of the writing aspects of language as referred to be rather challenging or even difficult, the informants were requested to talk about their frequency to

write in English when it is not required. Responses varied in major to be negative, like ...*I do not... since it's not marked so why... to ...few times when chatting in social media...or...I rarely do...* etc. Otherwise though few, other minor trends have demonstrated an occasionality of practising writing in English; accordingly,...*I write sometimes...not always, but I write...* etc. Moreover, students have communicated that written tasks, even as homework, are notably scarce in modules other than written expression, which means that the potential of being obliged to practise writing is limited to the infrequent workshops of that module. The reasoning of students about the challenges that they perceive as problematic to writing in English has derived mostly recurrent answers such as...*because I don't feel like motivated to write....maybe because we don't practice English very much... so how can we write it...teachers don't really provide written task ...Like we are not obliged to write...* etc. Given that, the factors that students shared for not writing in English were mainly related to self-motivation and practice in addition to lacking teachers' encouragement and assistance to write worsened by some cases of negative attitudes towards students written compositions, as they have reported in the discussion. As far as teachers' one-to-one revision of students' writing, about 70% of the informants have avowed such sort of feedback from their teachers, while another minority have expressed their uncertainty about the issue. Accordingly, teachers were found not to share their personal or social media contact for students' study related potentials. Conclusively, students have been invited to share their perceptions' of what hinders teachers' feedback on their writings; therefore, they issued time inadequacy, number of students in the classroom and the diverse features of writing that require revision especially for false beginner to low intermediate levels.

#### **4.2.2.2 Allocation of the Thematic Patterns**

The introductory section has sought a broad vision on students mastery of the English language named in the skills of which they perform better. Secondly they have been randomly requested about the mostly used technologies when acting as English language learners. Therefore as exhibited from the given aspects of language shared by the informants, the prominent skill that students find rather challenging has been confirmed to be the writing skill as the first pattern resulting from this section. The second pattern is, as has been introduced, students' choice of mobile technologies as the mainly handful tool that they could all afford and prove efficient.

The second section has resulted in two other thematic patterns which appeared as an associated continuity with the outcomes of the first section. Hence, the lack of practice and lack of motivation to write in English diminish chances of improving its aspects. For this, teachers fall incapable of affording the necessary checking or even adequate instruction of the so labelled as a challenging skill. Both the complexity of the writing skill and the diversity of the aspects that lead it are but instructional issues that become magnified by the conditions of affordance and equipment and worsened with the crowded charge of classes and the constraint of time allocated to writing as an essential module.

#### **4.2.3 Analysis of the Classroom Observation**

In overall, the introductory section of the adopted observation grid has revealed that the seating arrangement is as traditional and identical as in all the four classes. Concerning the technologies utilized by students, no clear use could be determined for educational or class-related purposes despite the fact that there were some, if not few, students having their PCs and/or smartphones, tablets..etc. on the table. Similarly, all four teachers did not make use of

their technologies while two of them have been noticed to have put their Pcs on their work-tables but not even powered on. As far as the classroom interaction is concerned, the teacher-student was noticed as the overwhelming sort of participation. On the other hand, fewer time was likely to be offered to the student-student interaction; this is exclusively when they are asked to accomplish in-class activities which are, at their best, done in around eight to ten minutes maximum. The time was not found adequate in all the sessions for either the observed classes are continuity to a previous one or they started on the observed session but could not be accomplished until the next one or, possibly, further ones.

Based on the types and features of teachers' treatments, the errors committed by students were, in more or less, given certain sorts of feedback. The ratio of teachers' ignorance of students' errors did not happen as they were, in most of the cases, hinted through some interjection expressions or utterances such as *emm! Really!..etc.* or ask for the repetitions of the structure. Students were interrupted immediately when errors happen and much less cases when they wait and delay their interruption until students finish their participation. On the other hand, the correct utterances of students were receiving approval through teachers' expressions like *good, nice, yes, acceptable...etc.*; however, the acceptance happens before the completion of students' trial. That is, teachers seemed to interfere in judging certain errors which are regularly committed by students without expecting other errors that may occur in any position of students' utterances. Regarding teachers' correction of students' errors as the latter fail to identify them, two out four teachers were found to directly provide correction while two other teachers' waited students to rectify or give chance to others. As an attention-getter, teachers emphasised the occurrence of the error by means of stressing words, repetition or intonation to determine the factual areas of incorrectness. In some cases, the teachers

repeated students' utterances without changing their errors or omitting them; otherwise, the teachers indicated the location of the errors, but there were nearly similar average of the cases where teachers provided a repetition with change. This means, teachers provided the answers and stressed them with intonation to locate where the problem in students answers was. In many cases, the teachers kept mentioning how errors were caused and stated for students their types. For the ways of editing students' errors, teachers appeared to trigger students self-editing to reach the correct or proper utterances; however, this was exclusively emergent in their spoken participations and not in their writing. The isolation of the error or its type is the major feedback students receive to identify their errors and potentially suggest other versions. For instance, teachers repeat errors in isolation such as "*...like hiking....the verb like with the third person.... singular...he?*" or "*...the men with e not a.....it's in plural form here...men...should we say have been or has been....*" or "*...in this sentence, you don't have to add a final s....people without s...is enough...okay?*". By doing this, teachers evoke their students to provide correction or at least other possible editions to reflect their understandings. Moreover, it appeared frequently that teachers alter their questions syntactically rather than semantically when they trigger other responses from their students; yet, the average of having more than three students try out their versions was scarce due to the time given to the class sessions. For the same motive, teachers seemed not to re-explain cases of correctness after the "transfer" and all of them did not return to the original error-maker to re-attempt his/her alternative editions for the "verification" of the first one. Therefore, the elicitation of students' understanding could not be well captured. As an exit of students' incorrect compositions, three teachers out of four exited errors with an explicit negation and provided correction.

### 4.3 Analysis of the Experimental Phase

#### 4.3.1 Pre-Questionnaire

##### Section One: Personal Portfolio

Table 13

*Students' Age*

|       |       | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------|-----------|---------|---------------|--------------------|
| Valid | 18    | 2         | 5,7     | 5,7           | 5,7                |
|       | 19    | 9         | 25,7    | 25,7          | 31,4               |
|       | 20    | 10        | 28,6    | 28,6          | 60,0               |
|       | 21    | 6         | 17,1    | 17,1          | 77,1               |
|       | 22    | 2         | 5,7     | 5,7           | 82,9               |
|       | 23    | 1         | 2,9     | 2,9           | 85,7               |
|       | 24    | 2         | 5,7     | 5,7           | 91,4               |
|       | 25    | 1         | 2,9     | 2,9           | 94,3               |
|       | 26    | 2         | 5,7     | 5,7           | 100,0              |
|       | Total | 35        | 100,0   | 100,0         |                    |

The major age group was that of 10 informants, who have been 20 years old, representing 28.6 %. The rate of 25.7% was introduced by those who aged 19 years old; while, 17.1% have conveyed the of 21. Other minorities varied from 18, 22, 24 and 26 years ages sharing the rate of 5.7% in addition to two informants aging 25 and 23 with the rate of 2.9% for each of them.

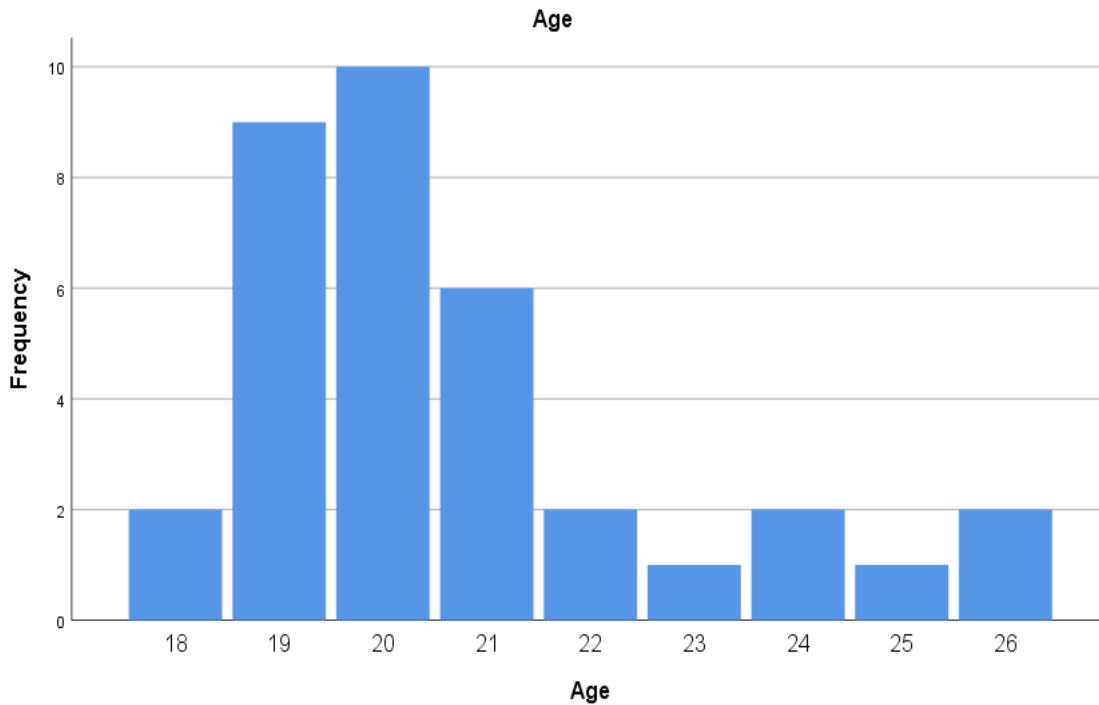


Figure 13. Students' Age

The factor of age is to be considered in this transitional phase as a factor to be secured in the study's framework. Therefore, the different age groups were found to not affect the dependency of the variables under study. A detailed analysis about variable security matters is exhibited in the section of Variable-Security Analysis.

Table 14

*Students' Gender*

|       |        | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|--------|-----------|---------|---------------|--------------------|
| Valid | Male   | 7         | 20,0    | 20,0          | 20,0               |
|       | Female | 28        | 80,0    | 80,0          | 100,0              |
|       | Total  | 35        | 100,0   | 100,0         |                    |

Female participants have reached the average of 80% with 28 students as an overwhelming majority. The modest number of male students in EFL classes has been noticed

since the preliminary investigations. Yet, a 20% rate was that of, 7 students, those who participated in the experimental stage.

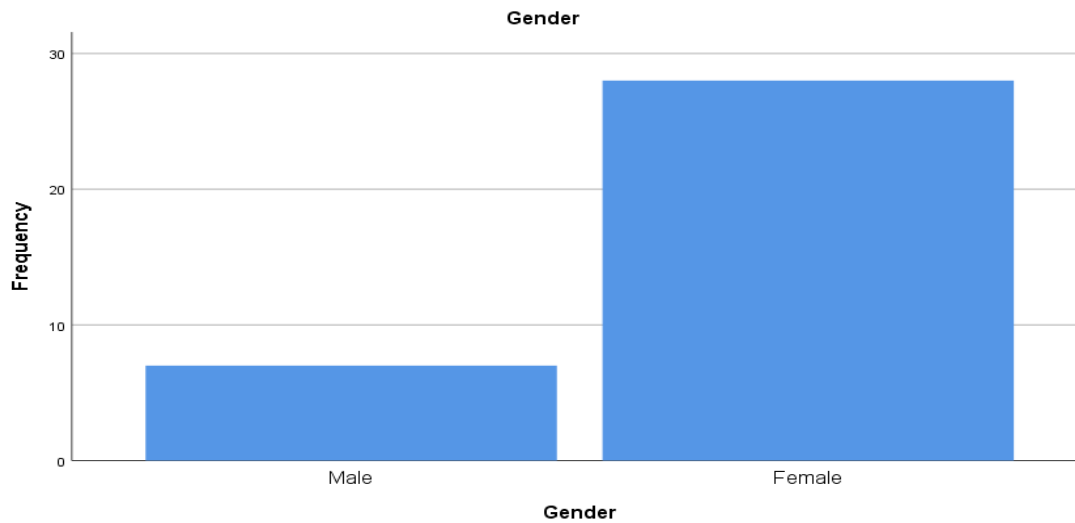


Figure 14. Students' Gender

Similar to the "Age", Gender is seen an important factor whose impact should be examined and secured. Likewise, the section of Variable-Security Analysis would portray this issue as a non-impactful feature.

Table 15

*Students' Averages of English in the Baccalaureate Exam*

|          | Frequency | Percent | Valid Percent | Cumulative Percent |
|----------|-----------|---------|---------------|--------------------|
| Valid 11 | 2         | 5,7     | 5,7           | 5,7                |
| 12.89    | 1         | 2,9     | 2,9           | 8,6                |
| 15.5     | 1         | 2,9     | 2,9           | 11,4               |
| 16.5     | 1         | 2,9     | 2,9           | 14,3               |
| 17.5     | 3         | 8,6     | 8,6           | 22,9               |
| 13       | 1         | 2,9     | 2,9           | 25,7               |
| 14       | 7         | 20,0    | 20,0          | 45,7               |
| 15       | 5         | 14,3    | 14,3          | 60,0               |
| 16       | 3         | 8,6     | 8,6           | 68,6               |

|       |    |       |       |       |
|-------|----|-------|-------|-------|
| 17    | 6  | 17,1  | 17,1  | 85,7  |
| 18    | 3  | 8,6   | 8,6   | 94,3  |
| 19    | 2  | 5,7   | 5,7   | 100,0 |
| Total | 35 | 100,0 | 100,0 |       |

The students who introduced the major rate were those whose average in the baccalaureate was 14 with 20% of the informants. The two subsequent averages were who got 17 and 15, introducing the rates of 17.1% and 14.3% respectively. The percentage of 8.6 was shared by those answering 18 and 16 while the remaining minorities shared the rate of 5.7% with the averages of 19, 11 added to the 2.9% shared by those who got 12.89, 15.5, 16.5 and 13.

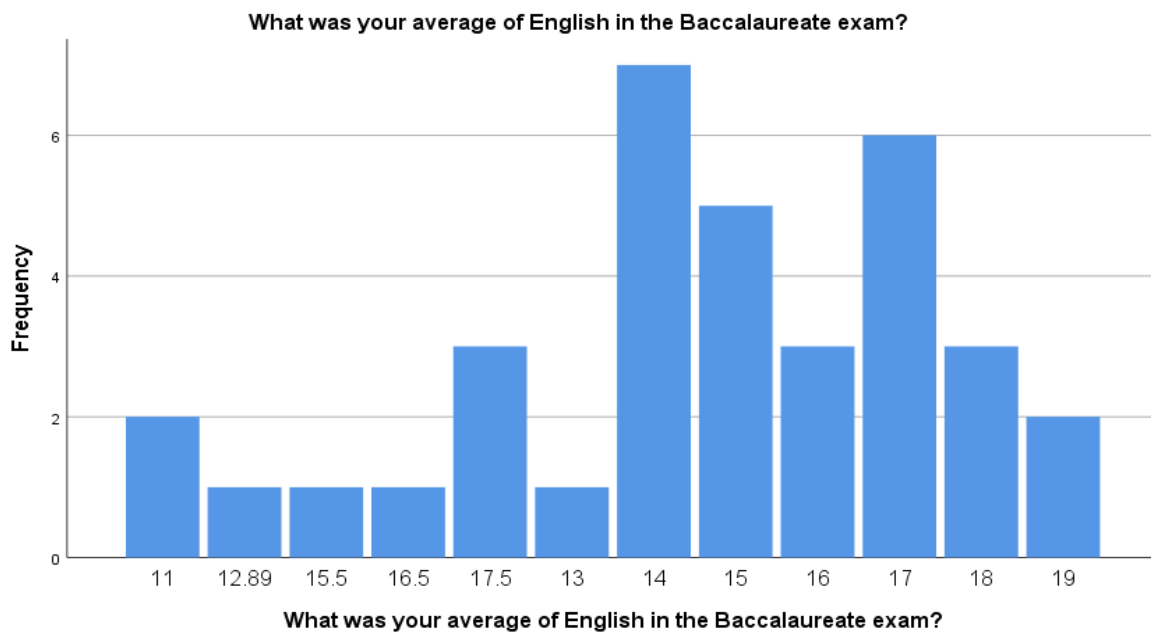


Figure 15. Students' Averages in the baccaulaureate

Despite the fact of having various set of averages, one could anticipate the mean of acceptable to a good level of English among the participants. This might guarantee harmonic data and shared concerns and challenges among the students under investigation.

Table 16

*Students' Level of English*

|       |                    | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|--------------------|-----------|---------|---------------|--------------------|
| Valid | Beginner           | 5         | 14,3    | 14,3          | 14,3               |
|       | Intermediate       | 19        | 54,3    | 54,3          | 68,6               |
|       | Upper-intermediate | 7         | 20,0    | 20,0          | 88,6               |
|       | Advanced           | 4         | 11,4    | 11,4          | 100,0              |
|       | Total              | 35        | 100,0   | 100,0         |                    |

As mentioned in the previous item, the majority of students seem to be intermediate or upper-intermediate. Thus, 54.3% considered themselves as intermediate while 20% went for upper-intermediate. Five informants see themselves as beginners, introducing the percentage of 14.3 whereas 4 among others, represented in 11.4 %, went for “advanced”.

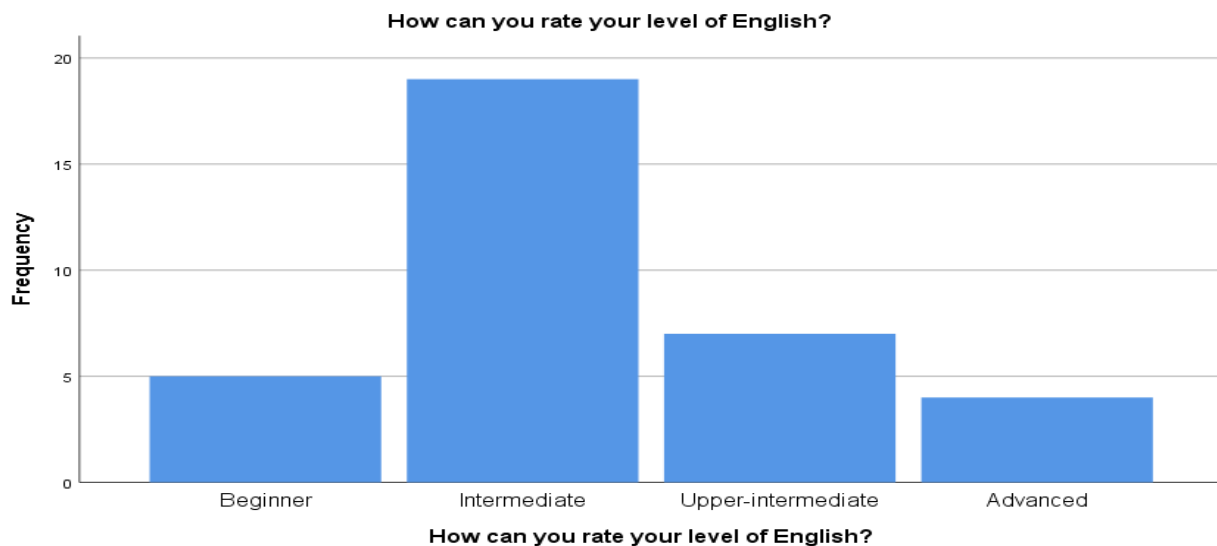


Figure 16. Students' Level of English

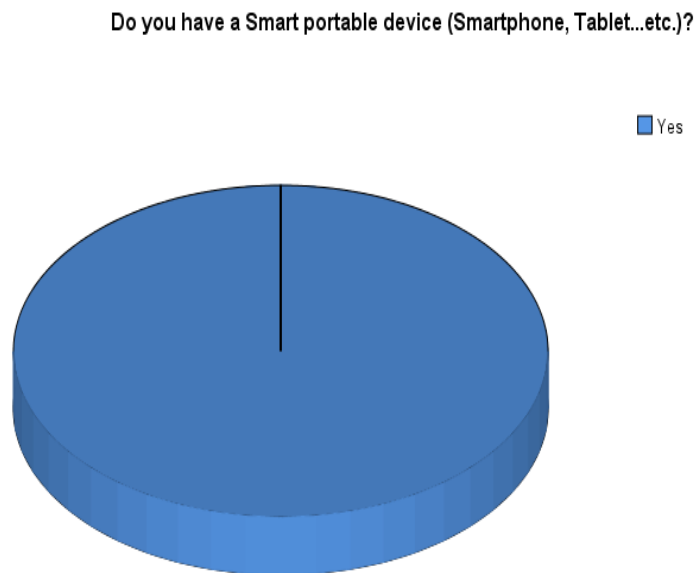
Another issuable factor may be the level of students in general English; this could bring about different visions if were broadly distinct. However, the continuous analysis of the study informants revealed equitable data as the level of students was found competitive.

Table 17

*Students' Ownership of Smart Portable Devices*

|       |     | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-----|-----------|---------|---------------|--------------------|
| Valid | Yes | 35        | 100,0   | 100,0         | 100,0              |
|       | No  | 0         | 0       | 0             | 0                  |

An exclusive option has been derived. Students were found to possess any of the portable smart devices. Therefore, all of the informants' answers went for "yes" to introduce a 100% rate.



*Figure 17.* Students' Ownership of Smart Portable Devices

Given that, students' ability to participate in the "use of mobile" study has been secured; however, there should be a stable access to the internet to be investigated in the next item.

Table 18

*Connectedness to the Internet*

|       |              | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|--------------|-----------|---------|---------------|--------------------|
| Valid | Yes, always  | 28        | 80,0    | 80,0          | 80,0               |
|       | Occasionally | 7         | 20,0    | 20,0          | 100,0              |
|       | Total        | 35        | 100,0   | 100,0         |                    |

Almost all of the informants have an internet access, for they at least get it occasionally. Otherwise, 80% of them have opted for having their mobile devices constantly connected to the internet, which is the response of 28 of the students. The remaining 7 communicated that their devices are connected on an occasional extent.

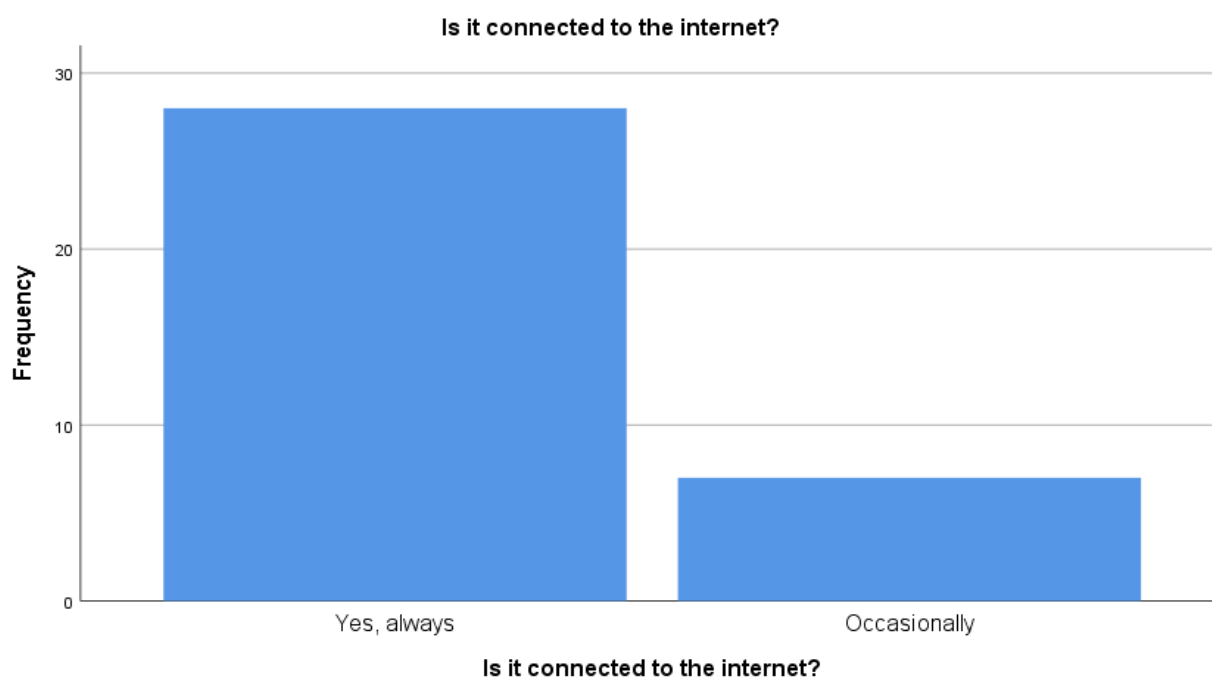


Figure 18. Connectedness to the Internet

Having ensured students use of internet is a good indicator for their awareness of its major facilities in both their personal life and their educational one.

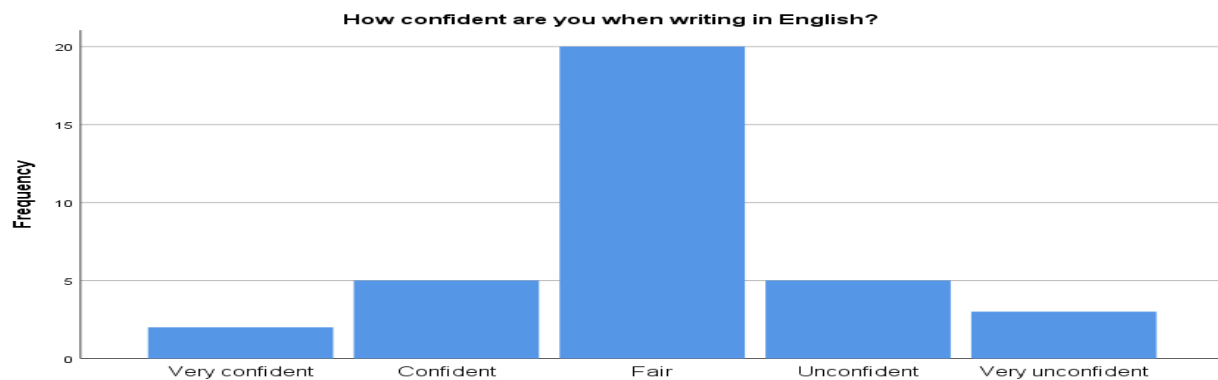
**Section Two: Positioning the Writing Skills**

Table 19

*Students' Confidence when Writing in English*

|       |                  | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|------------------|-----------|---------|---------------|--------------------|
| Valid | Very confident   | 2         | 5,7     | 5,7           | 5,7                |
|       | Confident        | 5         | 14,3    | 14,3          | 20,0               |
|       | Fair             | 20        | 57,1    | 57,1          | 77,1               |
|       | Unconfident      | 5         | 14,3    | 14,3          | 91,4               |
|       | Very unconfident | 3         | 8,6     | 8,6           | 100,0              |
|       | Total            | 35        | 100,0   | 100,0         |                    |

This item juxtaposes students' awareness of their own writing. A rate of 20% have gone modestly being fair about their writing skills, while equivalent averages went on extremes introducing 14% for those who have been confident and those who were not. Timid rates derived from very unconfident reaching 8,6% to very confident for 5,7% of the informants.

*Figure 19.* Students' Confidence when Writing in English

Although confidence in writing was majorly "fair" the distribution of averages in the other options would entail a remarkable instability of students' awareness of their skills. This

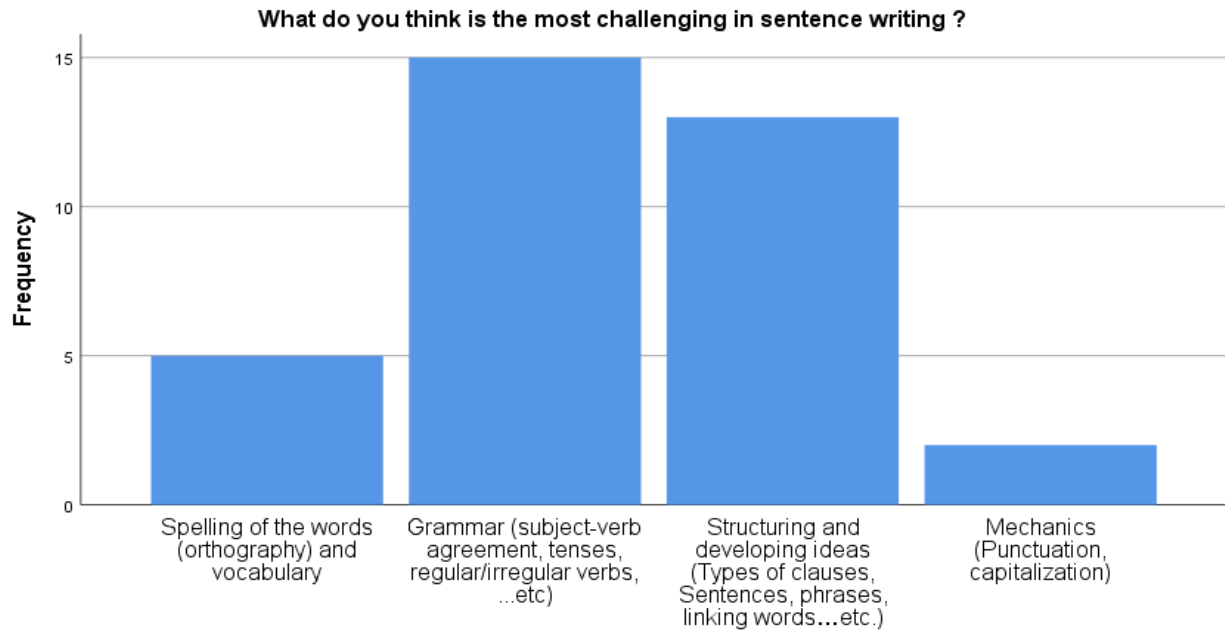
might be related to their tendency or willingness to write in English and the language challenging aspects.

Table 20

*Challenging Aspects in Sentence Writing*

|       |  | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|--|-----------|---------|---------------|--------------------|
| Valid | Spelling of the words (orthography) and vocabulary | 5         | 14,3    | 14,3          | 14,3               |
|       | Grammar  | 15        | 42,9    | 42,9          | 57,1               |
|       | Structuring and developing ideas                   | 13        | 37,1    | 37,1          | 94,3               |
|       | Mechanics (Punctuation, capitalization)            | 2         | 5,7     | 5,7           | 100,0              |
|       | Total  | 35        | 100,0   | 100,0         |                    |

The majority of the correspondents reported the challenging features of grammar with the rate of 42,9%. Structuring and developing ideas followed with 37.1% while the remaining minorities varied among orthography and vocabulary with 14.3% and mechanics with 5,7%. Therefore, those are the essential aspects that the present research aims to trigger.



*Figure 20.*Challenging Aspects in Sentence Writing

Having those statistics in consideration, language use has been shaped as the main challenge in students' writing. Similarly, language content is found a predominant concern among students' worries when writing. With some writing tests, the students' performance, however, would sort the potential aspect that happen to be rather challenging.

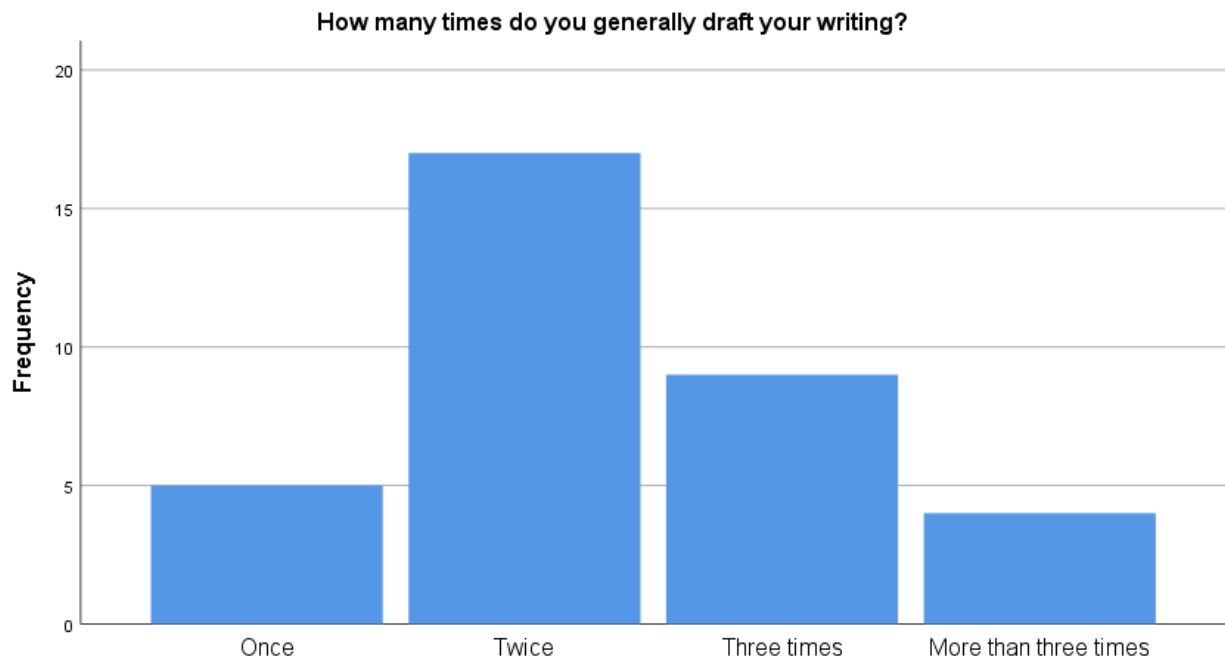
### **Section Three:** Editing and Feedback in Writing

Table 21

*Students' Frequency to Draft Their Writing*

|       |                       | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-----------------------|-----------|---------|---------------|--------------------|
| Valid | Once                  | 5         | 14,3    | 14,3          | 14,3               |
|       | Twice                 | 17        | 48,6    | 48,6          | 62,9               |
|       | Three times           | 9         | 25,7    | 25,7          | 88,6               |
|       | More than three times | 4         | 11,4    | 11,4          | 100,0              |
|       | Total                 | 35        | 100,0   | 100,0         |                    |

It appeared from this item that nearly half number of the whole sample draft their writing twice representing 48,6%. Another considerable rate has resulted from those who edit their writing for three times communicated by 25,7% of the participants. The rest of the sample went for drafting once with 14,3% and others reported editing their writings for more than three times average introducing the rate of 11,4.



*Figure 21.* How Many Times Do You Generally Draft Your Writing?

When counting those representations, the average of about 85,7 edit their writing more than once. Therefore, one could quantify how important is editing the writing for students though they may seem reporting distinct frequencies.

Table 22

*Students' Revision of Writing before Handing the Last Version*

|       |                                 | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|---------------------------------|-----------|---------|---------------|--------------------|
| Valid | I do it myself.                 | 25        | 71,4    | 71,4          | 71,4               |
|       | I ask a classmate to revise it. | 7         | 20,0    | 20,0          | 91,4               |
|       | I ask teacher's assistance.     | 3         | 8,6     | 8,6           | 100,0              |
| Total |                                 | 35        | 100,0   | 100,0         |                    |

With whom students tend to edit their writing is a crucial aspect in the present research. Overwhelmingly, the sample's 71,4% rate appeared to not share editing with anyone; however, they revise their writing by themselves. The following trend stated sharing the revision of their written work with a classmate while only 8,6% ask teachers' assistance during the editing process.

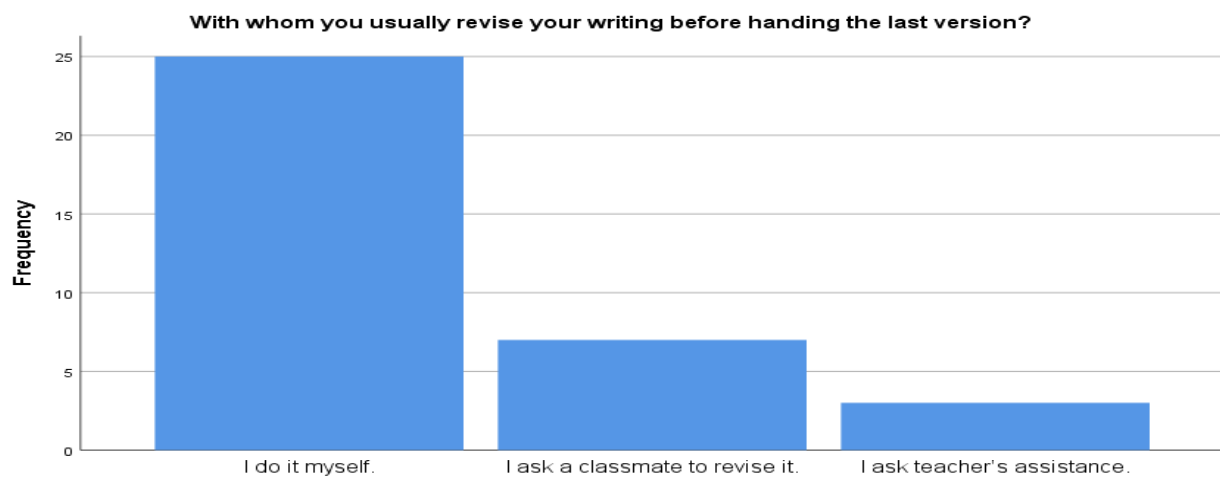


Figure 22. Students' Revision of Writing before Handing the Last Version

As expected from the preliminary phase, students have been found to self-edit their writing compositions. The distribution of the communicated percentages might relate to the

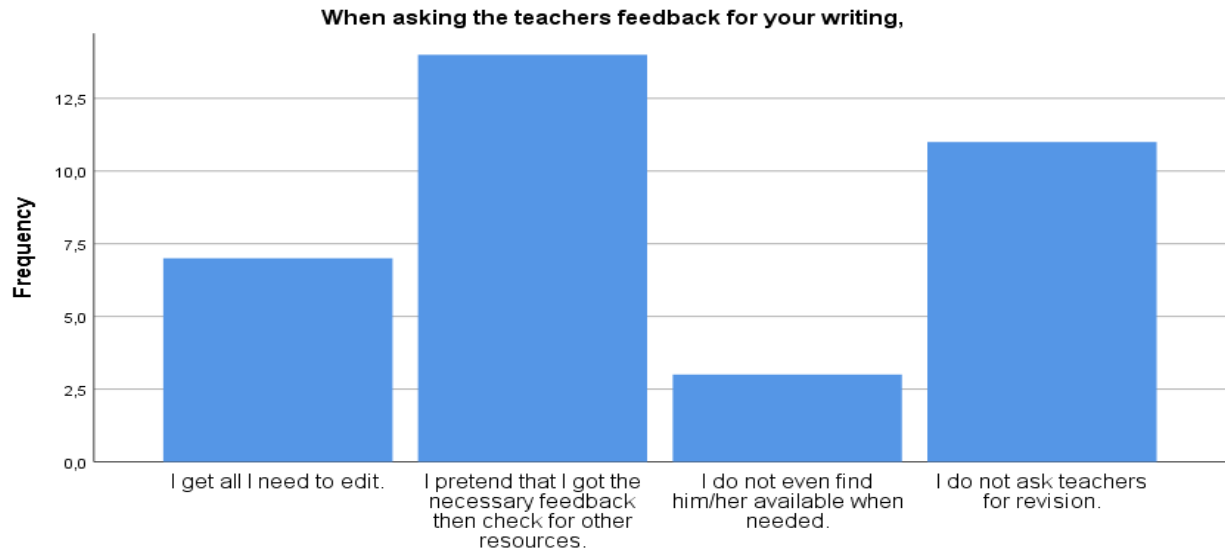
types of students personality traits, their writing performances or teachers' availability for them.

Table 23

*Feedback Received by Students when Requesting Teachers' Assistance*

|       |   | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|---|-----------|---------|---------------|--------------------|
| Valid | I get all I need to edit.   | 7         | 20,0    | 20,0          | 20,0               |
|       | I pretend that I got the necessary feedback then check for other resources. | 14        | 40,0    | 40,0          | 60,0               |
|       | I do not even find him/her available when needed.                           | 3         | 8,6     | 8,6           | 68,6               |
|       | I do not ask teachers for revision.   | 11        | 31,4    | 31,4          | 100,0              |
|       | Total   | 35        | 100,0   | 100,0         |                    |

Students have reported the fact of pretending to get the necessary feedback and then check for other resources. This stand has been represented by 14 of the informants with the rate of 40%. Further, those who do not even request teachers for revision have introduced 31,4% average. Others have declared getting the necessary feedback they need from teachers; thus, they reached 20% of the participants. Minimally, three students have claimed the unavailability of teachers when needed for revision.



*Figure 23.* Feedback Received by Students when Requesting Teachers' Assistance

The act of pretending that students do not get the necessary feedback and checking other resources can broadly be conceived either by their lack of understanding of what have been studying or their lack of identifying their types of errors. Otherwise, students' reluctance to ask teachers for revision could be communicated by the same reasons in addition to their potential introversion.

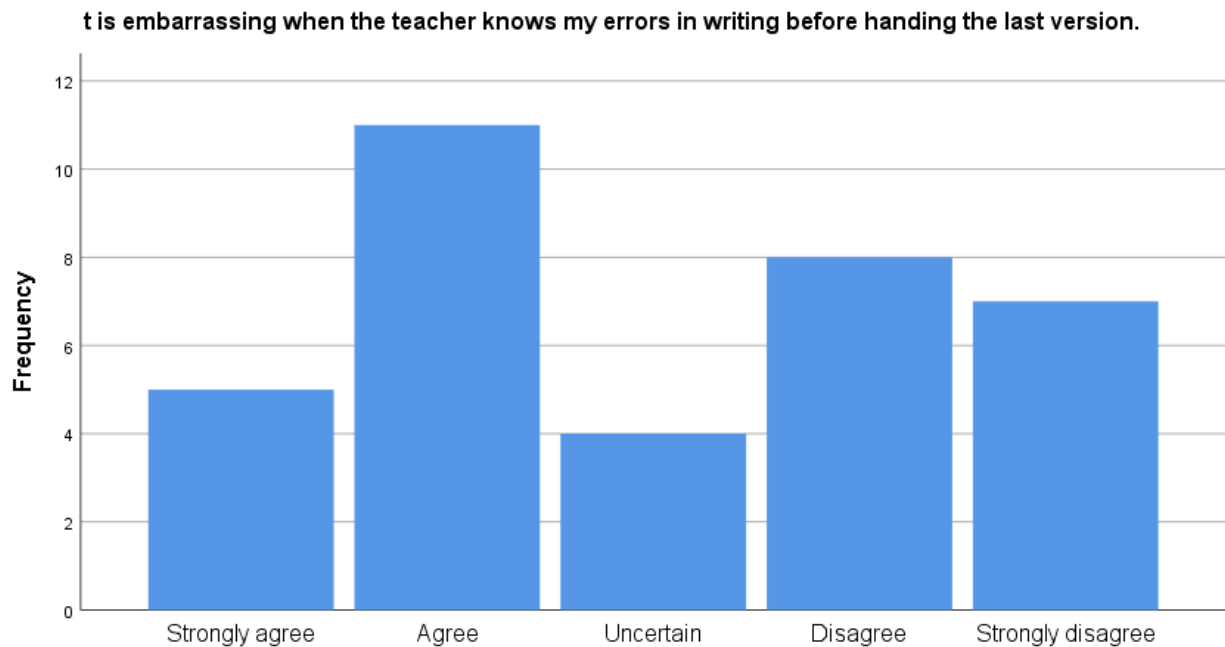
#### **Section Four:** Self-Editing in Writing

Table 24

*Students' Embarrassment of Teachers Knowing Their Errors*

|       |                   | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------------------|-----------|---------|---------------|--------------------|
| Valid | Strongly agree    | 5         | 14,3    | 14,3          | 14,3               |
|       | Agree             | 11        | 31,4    | 31,4          | 45,7               |
|       | Uncertain         | 4         | 11,4    | 11,4          | 57,1               |
|       | Disagree          | 8         | 22,9    | 22,9          | 80,0               |
|       | Strongly disagree | 7         | 20,0    | 20,0          | 100,0              |
|       | Total             | 35        | 100,0   | 100,0         |                    |

According to the findings displayed in the table, a considerable part of students feel embarrassed when teachers know their errors in writing reaching 31,4%. The following rates are found 22% of those who disagree with the given statement and 20% who strongly disagree. Those who strongly agree have represented the rate of 14,3%, whereas those who expressed their uncertainty have approximated 11,4%.



*Figure 24.* Students' Embarrassment of Teachers Knowing Their Errors

The random distribution would attribute students' psychological factor of getting embarrassed of teachers' negative attitudes towards their errors. This might magnify their reluctance to share the revision of their written tasks with their teachers. Considering the sum of those who agree and strongly agree, an aggregation of 45,7 seem superior to the other detached options which thus needs to be taken into scrutiny.

Table 25

*Students' Embarrassment of Teachers Showing Their Errors to Classmates*

|       |                   | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------------------|-----------|---------|---------------|--------------------|
| Valid | Strongly agree    | 12        | 34,3    | 34,3          | 34,3               |
|       | Agree             | 6         | 17,1    | 17,1          | 51,4               |
|       | Uncertain         | 4         | 11,4    | 11,4          | 62,9               |
|       | Disagree          | 9         | 25,7    | 25,7          | 88,6               |
|       | Strongly disagree | 4         | 11,4    | 11,4          | 100,0              |
|       | Total             | 35        | 100,0   | 100,0         |                    |

Furthermore, the act of teachers showing errors is still found a worry for them. They have strongly agreed with having their errors revealed to their classmates to the rate of 34,3%, and those who agree have introduced 17,1%. On the other hand, those who disagree reached 25,7%, while the uncertain and strongly disagree options share equivalent averages of about 11,4%.

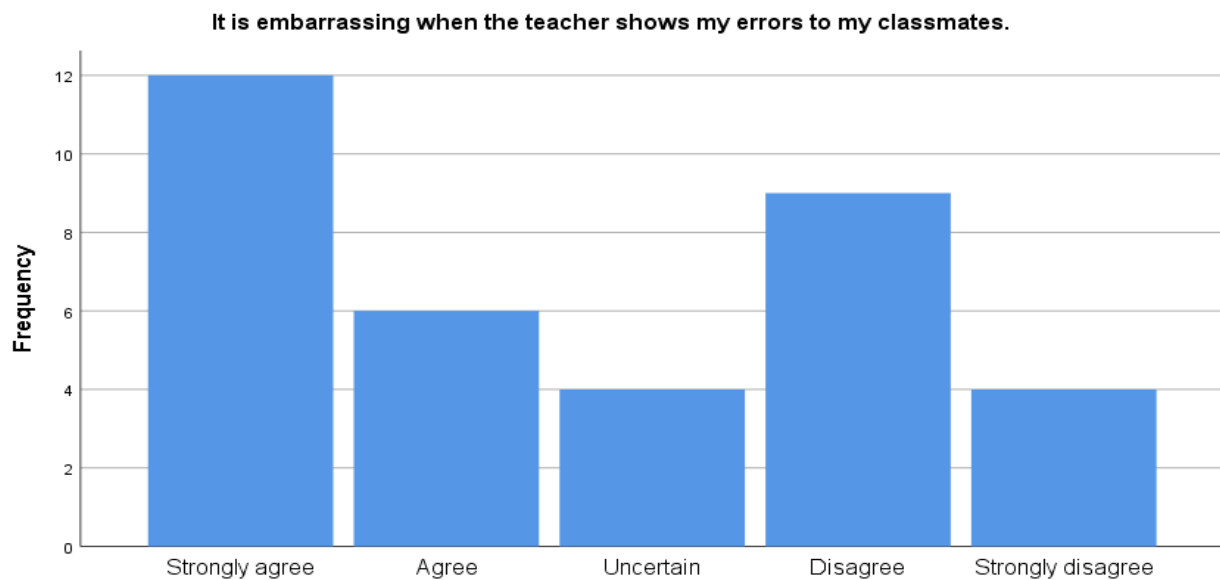


Figure 25. Students' Embarrassment of Teachers Showing Their Errors to Classmates

Though it might appear awkward to have students get ashamed of their errors among their classmates, the fact would necessitate teachers' guidance of their students' educational behaviour. This would lower the possibility of getting students socialise themselves with their classmates and should be aware of their errors as a pedagogical strategy of err to learn.

Table 26

*Students' Editing of Their Writings before Giving them to Teachers*

|       |                | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|----------------|-----------|---------|---------------|--------------------|
| Valid | Strongly agree | 22        | 62,9    | 62,9          | 62,9               |
|       | Agree          | 11        | 31,4    | 31,4          | 94,3               |
|       | Uncertain      | 1         | 2,9     | 2,9           | 97,1               |
|       | Disagree       | 1         | 2,9     | 2,9           | 100,0              |
|       | Total          | 35        | 100,0   | 100,0         |                    |

As shown in the table, the editing process was found common to almost all of the informants. Therefore, 69,9% strongly agreed with being careful about editing their writings before handing them. With a little lesser intense, 31,4% of the student agreed with the given proposition while minor rates which were also found of a similar percentage, 2.9%, for those who were uncertain and those who disagreed totally.

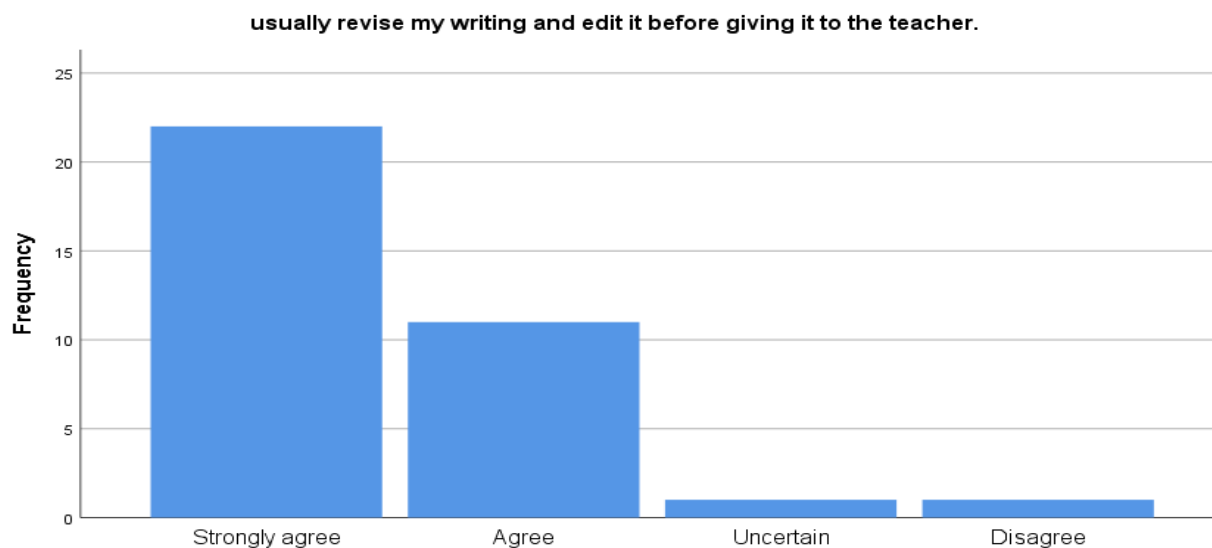


Figure 26. Students' Editing of Their Writings before Giving them to Teachers

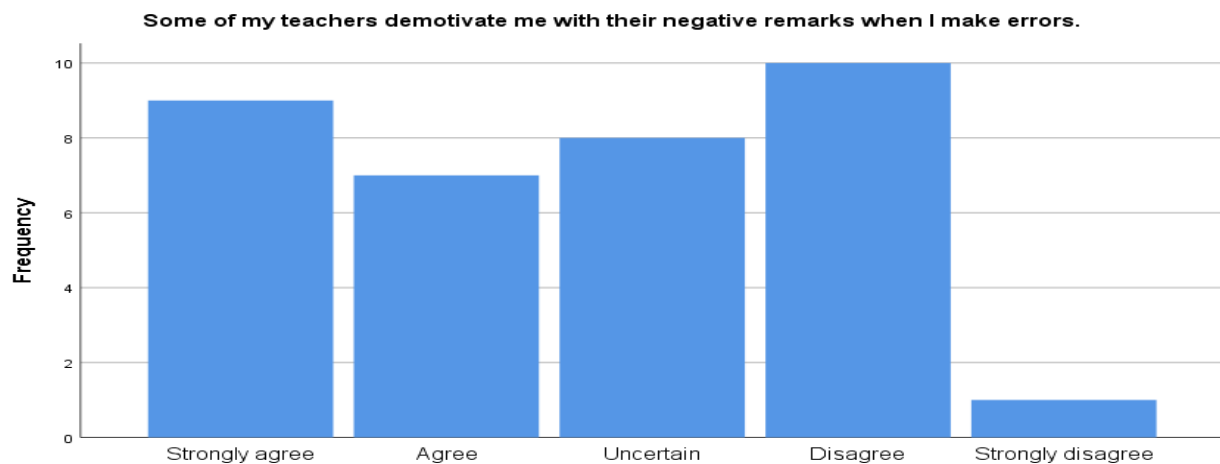
This item has transmitted students' carefulness in all that concerns the process of editing their writings. Having the "strongly agree" and "agree" as the overwhelming options would call a need to dig into some of the leading reasons of why editing could have been of that essence to them.

Table 27

*Students' Demotivation of Teachers' Negative Remarks when Making Errors*

|       |                   | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------------------|-----------|---------|---------------|--------------------|
| Valid | Strongly agree    | 9         | 25,7    | 25,7          | 25,7               |
|       | Agree             | 7         | 20,0    | 20,0          | 45,7               |
|       | Uncertain         | 8         | 22,9    | 22,9          | 68,6               |
|       | Disagree          | 10        | 28,6    | 28,6          | 97,1               |
|       | Strongly disagree | 1         | 2,9     | 2,9           | 100,0              |
| Total |                   | 35        | 100,0   | 100,0         |                    |

As for students' getting affected of their teachers' negative attitudes, 28,6% has been the major rate of those who "disagree"; however, another competitive rate has reached 25,7% representing those who strongly agreed on being demotivated from those sorts of attitudes. Subsequently, those who have been uncertain introduced 22,9% amongst the correspondents, yet a rate of 20% has resulted from those who opted for "agree while only 2,9% represented the frequency of the strongly agree.



*Figure 27.* Students' Demotivation of Teachers' Negative Remarks when Making Errors

Merging the averages of those who strongly agree with those who agree with getting negatively influenced by their teachers unfavourable comments would result in a much wider range than those who disagree or strongly did. Teachers' attitudes then would influence students' instructional performances as be mainly pre-intermediate to intermediate. For that reason, students' concern of the importance of ameliorating their writing could be affected in return.

Table 28

*Importance Writing to Avoid Teachers' Negative Attitudes*

|       |                   | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------------------|-----------|---------|---------------|--------------------|
| Valid | Strongly agree    | 11        | 31,4    | 31,4          | 31,4               |
|       | Agree             | 15        | 42,9    | 42,9          | 74,3               |
|       | Uncertain         | 6         | 17,1    | 17,1          | 91,4               |
|       | Disagree          | 2         | 5,7     | 5,7           | 97,1               |
|       | Strongly disagree | 1         | 2,9     | 2,9           | 100,0              |
|       | Total             | 35        | 100,0   | 100,0         |                    |

In regard to the previous item, the one being has investigated students' performance in writing to avoid any unfavourable attitudes from their teachers. 42,9% have agreed on the given statement and 31,9% strongly agreed as the two major rated interpreting their interest in writing. Those who have been uncertain have introduced a considerable rate of 17,1% of the informants and 5,7% have disagreed to lending importance to their writing to avoid any negative comments, while a minor average was that of 2,9% of those who have communicated strongly disagree.

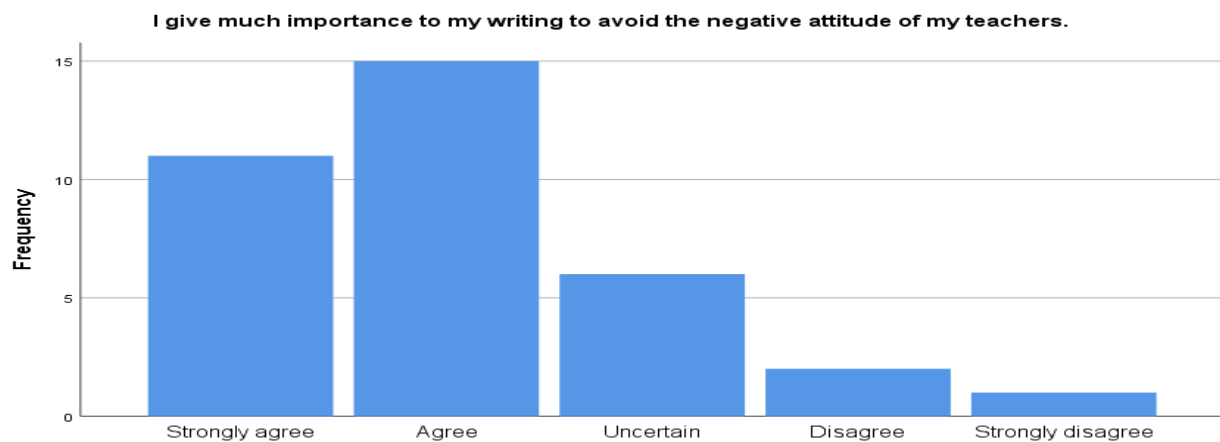


Figure 28. Importance Writing to Avoid Teachers' Negative Attitudes

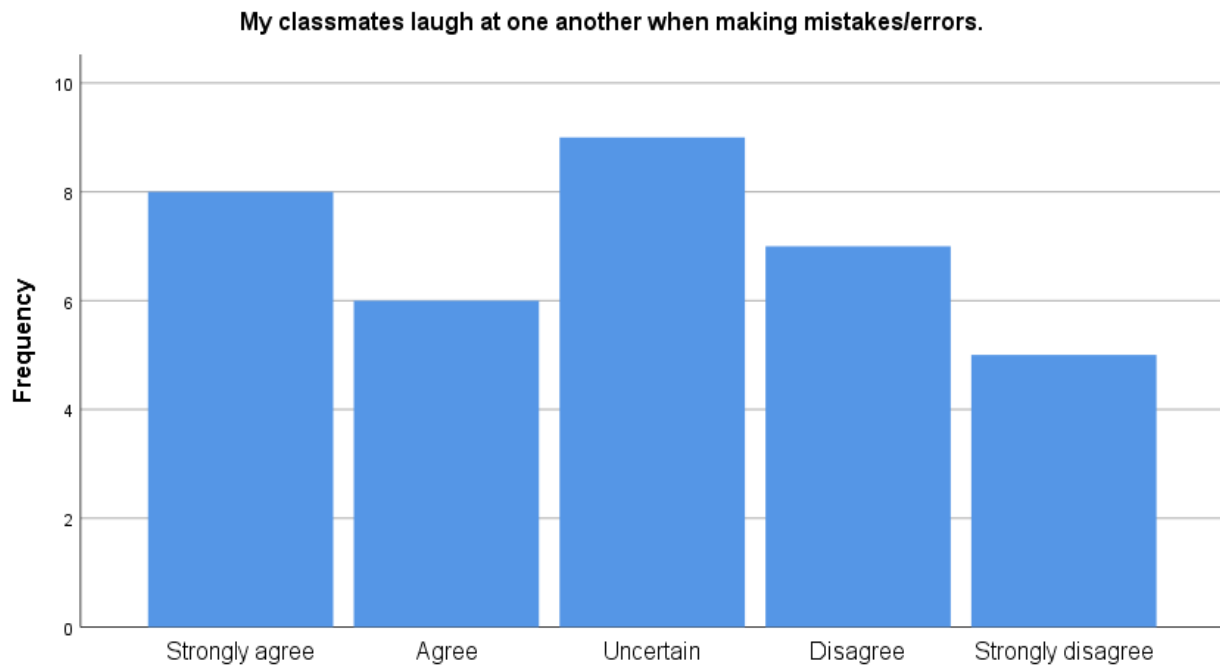
Students have appeared to be more careful about their writing in order to overcome any negative attitudes from the part of their teachers. This went conforming to the findings of previous of the previous item from the point that teachers' feedback, be it positive or negative, has been proven influential upon students' instructional behaviours in general and on their writing performance in particular.

Table 29

*Classmates Laughing at One Another When Making Errors*

|       |                   | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------------------|-----------|---------|---------------|--------------------|
| Valid | Strongly agree    | 8         | 22,9    | 22,9          | 22,9               |
|       | Agree             | 6         | 17,1    | 17,1          | 40,0               |
|       | Uncertain         | 9         | 25,7    | 25,7          | 65,7               |
|       | Disagree          | 7         | 20,0    | 20,0          | 85,7               |
|       | Strongly disagree | 5         | 14,3    | 14,3          | 100,0              |
|       | Total             | 35        | 100,0   | 100,0         |                    |

Students' educational behaviour may turn improper especially that laughing at each other's erroneous participations in the classroom activities. This was found to a 25,7% uncertain for the requested sample; wherein, the rate of 22,9% have strongly agreed on witnessing that wrong behaviour among their fellow classmates. On the other extreme, the average of 20% have expressed their strong disagreement with the presence of such improper behaviours, whereas an addition to those who strongly agreed reached 17,1% of the informants have agreed by approving the statement. Eventually, those who reported their strong disagreement have introduced 14,3% among the others.



*Figure 29.* Classmates Laughing at One Another When Making Errors

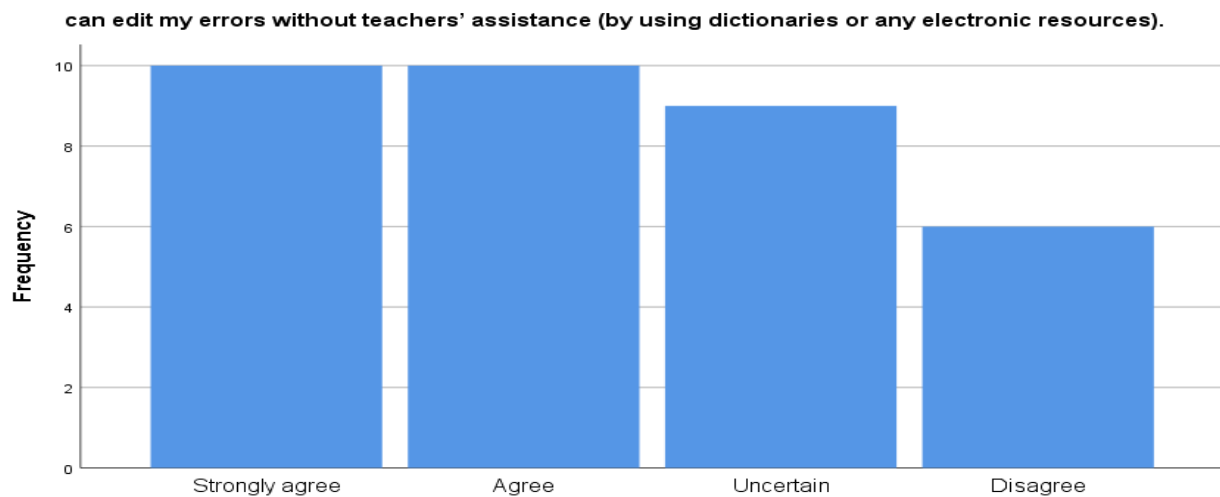
As figured above, the averages of those communicated their witness of these sorts of behaviours has exhibited prominence that would necessitate a serious concern to be maintained by teachers. Further, students' awareness of what appears natural may be of harmful for the sanity of such an educational atmosphere.

Table 30

*Students' Ability to Edit Their Errors without Teachers' Assistance*

|       |                | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|----------------|-----------|---------|---------------|--------------------|
| Valid | Strongly agree | 10        | 28,6    | 28,6          | 28,6               |
|       | Agree          | 10        | 28,6    | 28,6          | 57,1               |
|       | Uncertain      | 9         | 25,7    | 25,7          | 82,9               |
|       | Disagree       | 6         | 17,1    | 17,1          | 100,0              |
|       | Total          | 35        | 100,0   | 100,0         |                    |

Equivalent percentages have resulted from those who agree and those who strongly agree with being able to edit without requesting help from their teachers. Both of the options have reached 28,6% while the following rate has been 25,7% that of those who remained uncertain of their ability to edit without their teachers' assistance. Those who have disagreed with the statement represented the average of 17,1%.



*Figure30.* Students' Ability to Edit Their Errors without Teachers' Assistance

The ability to edit ones writing would require certain skills and other resources than those which formally provided by teachers or by universities. Therefore, students have showed their major tendency to edit their writing without their teachers' assistance. Students' orientation may lead to testify their ability of editing the different aspects of language that appear in their writing.

Table 31

*Students' Satisfaction when Correcting Their Written Works by Themselves*

|       |                | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|----------------|-----------|---------|---------------|--------------------|
| Valid | Strongly agree | 17        | 48,6    | 48,6          | 48,6               |
|       | Agree          | 11        | 31,4    | 31,4          | 80,0               |
|       | Uncertain      | 4         | 11,4    | 11,4          | 91,4               |
|       | Disagree       | 3         | 8,6     | 8,6           | 100,0              |
|       | Total          | 35        | 100,0   | 100,0         |                    |

Another affective factor in self-editing is that of self-satisfaction. Towards half number of the whole sample has strongly agreed that they feel more satisfied when they correct their works by themselves. This trend has reached the rate of 48,6 % of the informants; likewise, those who have communicated the option “agree” represented 31,4% of the rest. The remaining minorities have varied from “uncertain” with 11,4% and “agree” with 8,6% ranges.

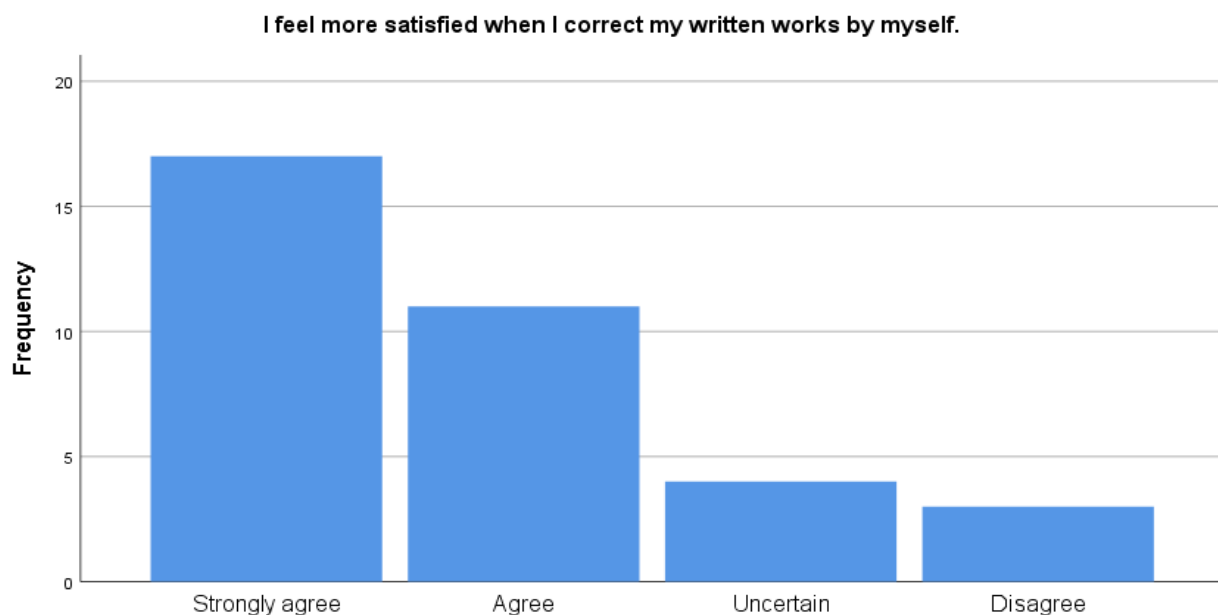


Figure 31. Students' Satisfaction when Correcting Their Written Works by Themselves

The matter of students' certainty of their ability to edit their own writing that was inquired in the previous item has been found compatible with their self-satisfaction when doing so. Therefore, the fact of having a wider range of resources nowadays might have consolidated students' awareness of its utility when editing.

Table 32

*Teachers' Dissatisfaction of Students' Writing*

|       |                   | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------------------|-----------|---------|---------------|--------------------|
| Valid | Agree             | 5         | 14,3    | 14,3          | 14,3               |
|       | Uncertain         | 15        | 42,9    | 42,9          | 57,1               |
|       | Disagree          | 12        | 34,3    | 34,3          | 91,4               |
|       | Strongly disagree | 3         | 8,6     | 8,6           | 100,0              |
| Total |                   | 35        | 100,0   | 100,0         |                    |

A considerable percentage has derived from those who are uncertain of their teachers' dissatisfaction where they introduced 42,9% of participants. The disagree has been the second rate that was communicated with a 34,3% average which came precedent to those who agree with the idea of not getting teachers' approval to their writing with 14,3%. As for those who have strongly disagreed with the determined statement, the rate ranged 8,6%.

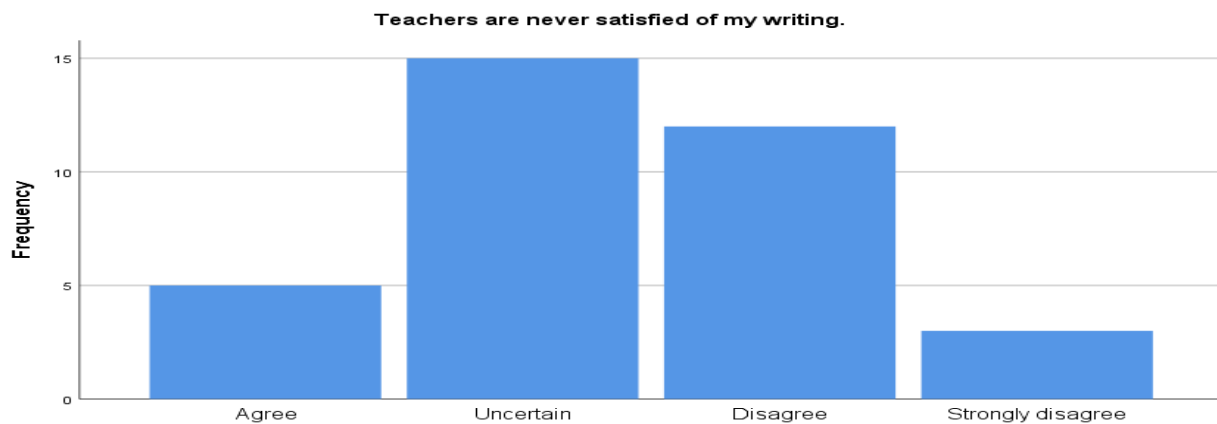


Figure 32. Teachers' Dissatisfaction of Students' Writing

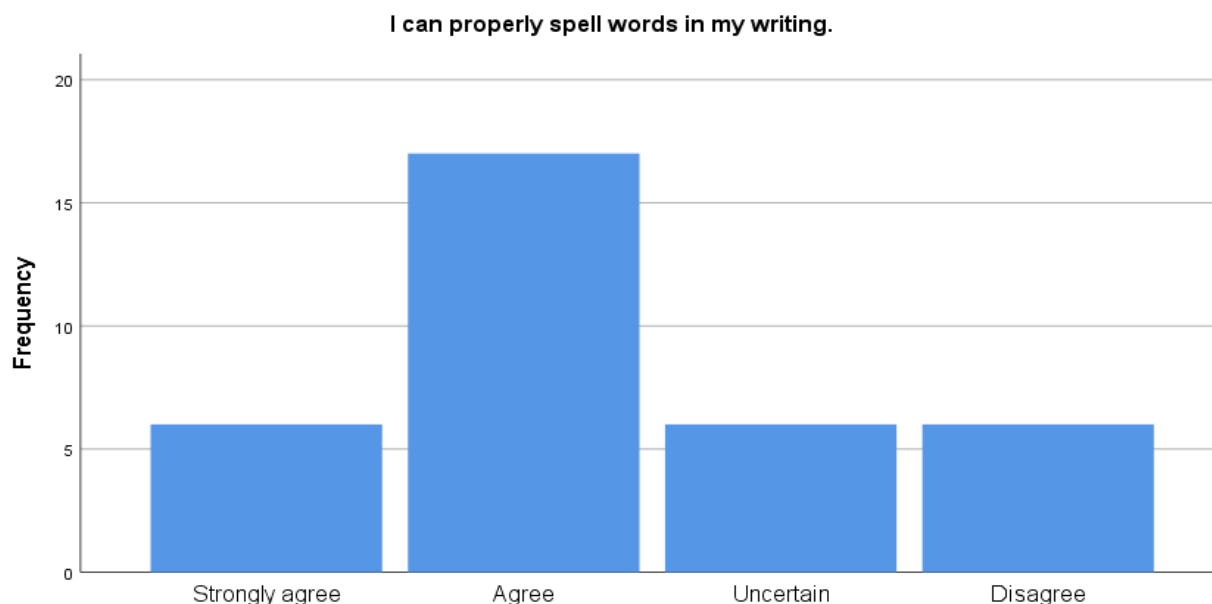
Thinking that their teachers are never satisfied of their writing may, in a way or in another, be factorising their careful attention to their editing. Furthermore, getting the leading option as “uncertain” would communicate a lack of an immediate feedback from teachers where, on one hand, they express for their satisfaction and/or dissatisfaction. Likewise, students could have an idea of the aspects derived from that feedback and work to improve them, on the other hand.

Table 33

*Students' Mastery of Spelling (Orthography) of Words in their Writing*

|       |                | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|----------------|-----------|---------|---------------|--------------------|
| Valid | Strongly agree | 6         | 17,1    | 17,1          | 17,1               |
|       | Agree          | 17        | 48,6    | 48,6          | 65,7               |
|       | Uncertain      | 6         | 17,1    | 17,1          | 82,9               |
|       | Disagree       | 6         | 17,1    | 17,1          | 100,0              |
|       | Total          | 35        | 100,0   | 100,0         |                    |

Towards 48,6% of the subjects have reported their knowledge of orthography when writing; this was the case for those who have declared “agree”. Three equivalent averages have ranged 17,1% for those who have strongly agreed, those who have been uncertain, and those who have disagreed.



*Figure 33.* Students' Mastery of Spelling (Orthography) of Words in their Writing

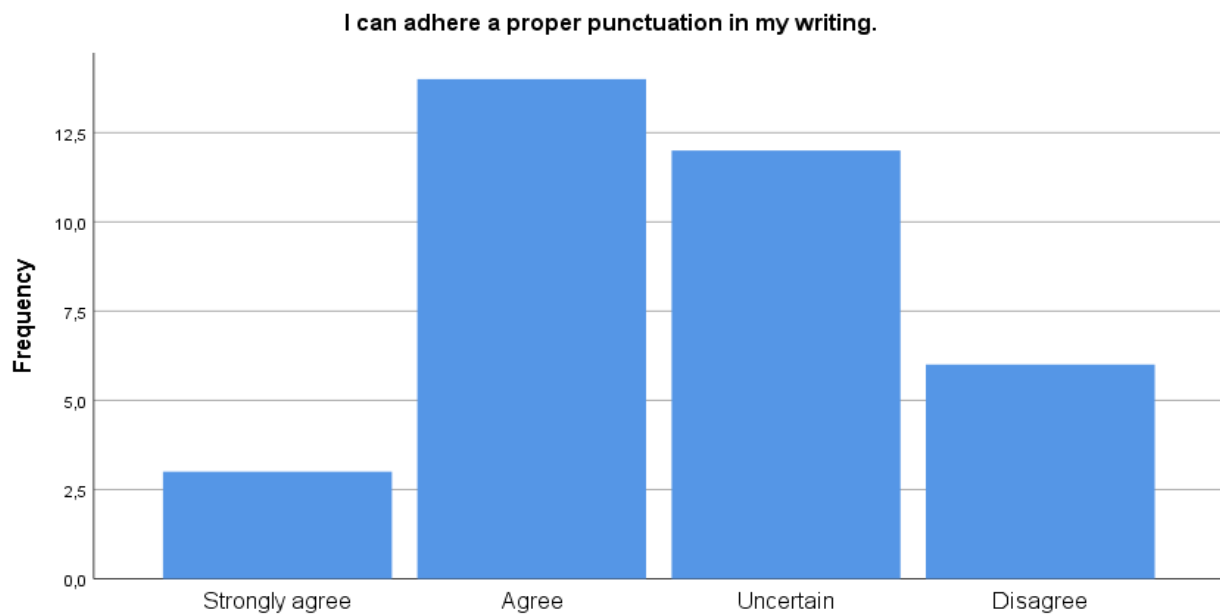
The achieved averages are seemingly incompatible. Although almost half rate of the whole participants have agreed on their competence of orthography, the distribution of the remaining option is roughly conceived as inequitably variable. Therefore, the writing tests would concretize their efficiency in that very aspect.

Table 34

*Students' Efficiency in the Punctuation of Their Writing*

|       |                | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|----------------|-----------|---------|---------------|--------------------|
| Valid | Strongly agree | 3         | 8,6     | 8,6           | 8,6                |
|       | Agree          | 14        | 40,0    | 40,0          | 48,6               |
|       | Uncertain      | 12        | 34,3    | 34,3          | 82,9               |
|       | Disagree       | 6         | 17,1    | 17,1          | 100,0              |
|       | Total          | 35        | 100,0   | 100,0         |                    |

Punctuation is another aspect in writing upon which students are inquired. Those who agreed on being able to supply proper punctuation in their writing have represented 40% of the informants. Successively, a rate of 34,3% has been stated by those who were uncertain of their ability to properly punctuate their compositions. As for those who have disagreed, they reached 17,1% rate, while those who have strongly agreed reported the minor average of 8,6% among the other study subjects.



*Figure 34.* Students' Efficiency in the Punctuation of Their Writing

The efficiency that has been communicated and figured above can be seen ambitious without a careful accompaniment of students' written tasks. Moreover, the considerable rates that have been communicating "uncertain" and "disagree" cannot be denied without initiating some practical proof of their mastery in punctuation.

Table 35

*Students' Awareness of The Capitalization Rules While Writing*

|       |                   | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------------------|-----------|---------|---------------|--------------------|
| Valid | Strongly agree    | 7         | 20,0    | 20,0          | 20,0               |
|       | Agree             | 11        | 31,4    | 31,4          | 51,4               |
|       | Uncertain         | 10        | 28,6    | 28,6          | 80,0               |
|       | Disagree          | 6         | 17,1    | 17,1          | 97,1               |
|       | Strongly disagree | 1         | 2,9     | 2,9           | 100,0              |
|       | Total             | 35        | 100,0   | 100,0         |                    |

The option agree have been dominant with 31,4% of the research correspondents who approved their awareness of the punctuation rules when writing whilst being uncertain was the stand of 28,6% of other informants. A subsequent range of 20% were found to strongly agree with their efficiency in punctuation, whereas 17,1% of the participants have reported their denial of the statement as not being competent in terms of punctuating their writings. The least average that was reflected has been that of the option strongly agree with 2,9%.

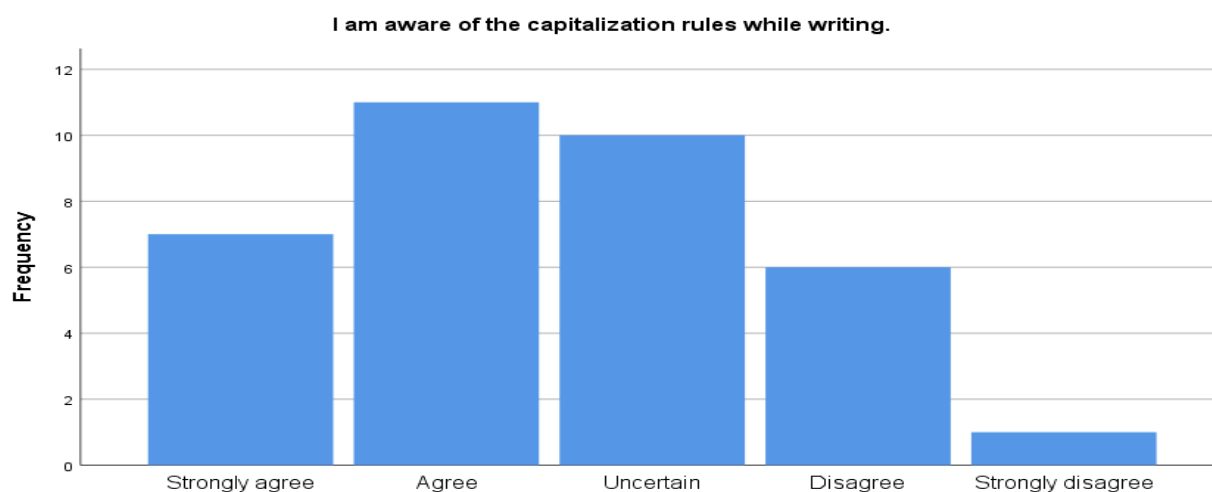


Figure 35. Students' Awareness of the Capitalization Rules While Writing

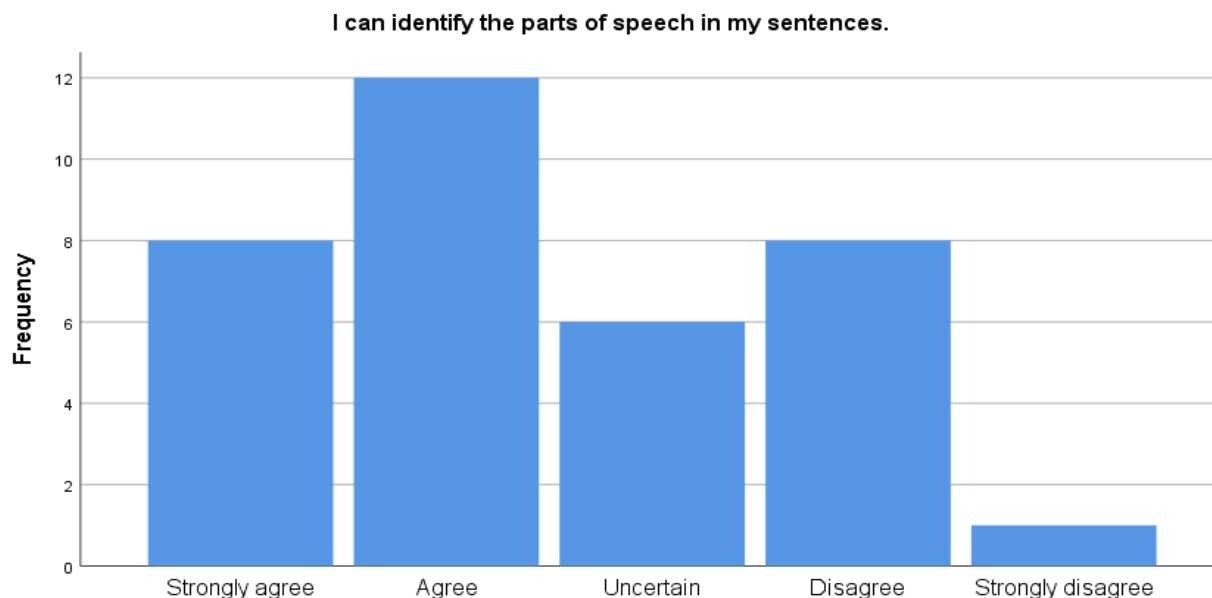
The ranges that derived from this item are to be considered as the levels of disagreement and uncertainty added to the strong disagreement, though little, appear to be inevitable. As a crucial part of the writing mechanics, students' awareness of the possible resources treating errors of punctuation might be scarce due to certain limitations in the knowledge of the rules or any associated techniques for its identification.

Table 36

*Identification of The Parts of Speech in Sentences*

|       |                   | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------------------|-----------|---------|---------------|--------------------|
| Valid | Strongly agree    | 8         | 22,9    | 22,9          | 22,9               |
|       | Agree             | 12        | 34,3    | 34,3          | 57,1               |
|       | Uncertain         | 6         | 17,1    | 17,1          | 74,3               |
|       | Disagree          | 8         | 22,9    | 22,9          | 97,1               |
|       | Strongly disagree | 1         | 2,9     | 2,9           | 100,0              |
|       | Total             | 35        | 100,0   | 100,0         |                    |

On the ability to identify the parts of speech in their sentences, the range of 34,3% has been introduced by those who agreed with the given statement. Two opposing options have derives as overwhelming. Hence, students communication of their strong agreement and disagreement were established to a 22,9% for each trend while another considerable rate of 17,1% was marked by those who were uncertain of their capability of identifying the parts of speech in their writing. The least average has been that of 2,9% representing those who strongly disagree.



*Figure 36.* Identification of the Parts of Speech in Sentences

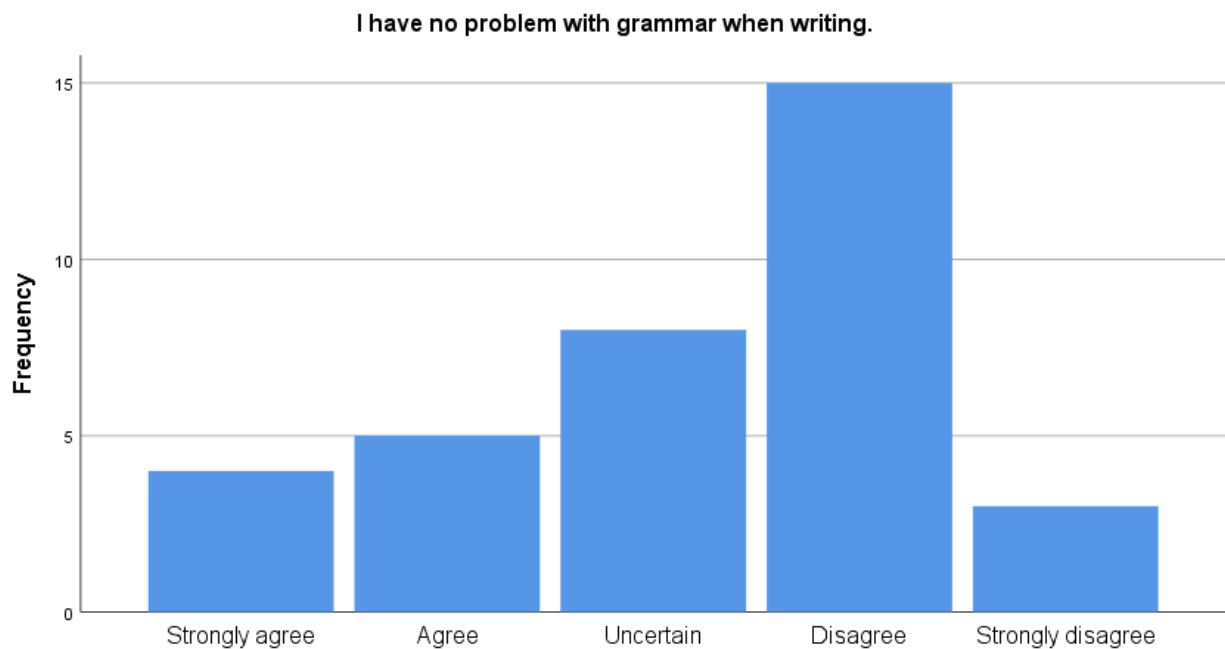
Though there has been an apparent agreement on the ability to identify the parts of speech, the equivalence between two extremes of “strongly agree” and “disagree” would trigger both an exclamation and interrogation marks. Therefore, an accompaniment of students’ written productions may offer better opportunities to discover their proficiency in that matter of concern.

Table 37

*Students’ Deficiency in Grammar when Writing*

|       |                   | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|-------------------|-----------|---------|---------------|--------------------|
| Valid | Strongly agree    | 4         | 11,4    | 11,4          | 11,4               |
|       | Agree             | 5         | 14,3    | 14,3          | 25,7               |
|       | Uncertain         | 8         | 22,9    | 22,9          | 48,6               |
|       | Disagree          | 15        | 42,9    | 42,9          | 91,4               |
|       | Strongly disagree | 3         | 8,6     | 8,6           | 100,0              |
| Total |                   | 35        | 100,0   | 100,0         |                    |

Towards 42,9%, students have disagreed with having problems in grammar when writing; otherwise, those who have been uncertain reached the average of 22,9%. The subsequent trend was that of those who agreed with the rate of 14,3% followed by those who strongly agree with a percentage of 11,4%. At the latest, the option of strongly disagree has received a minor rate of 8,6%, denying their deficiency in grammar when writing.



*Figure 37.* Students' Deficiency in Grammar when Writing

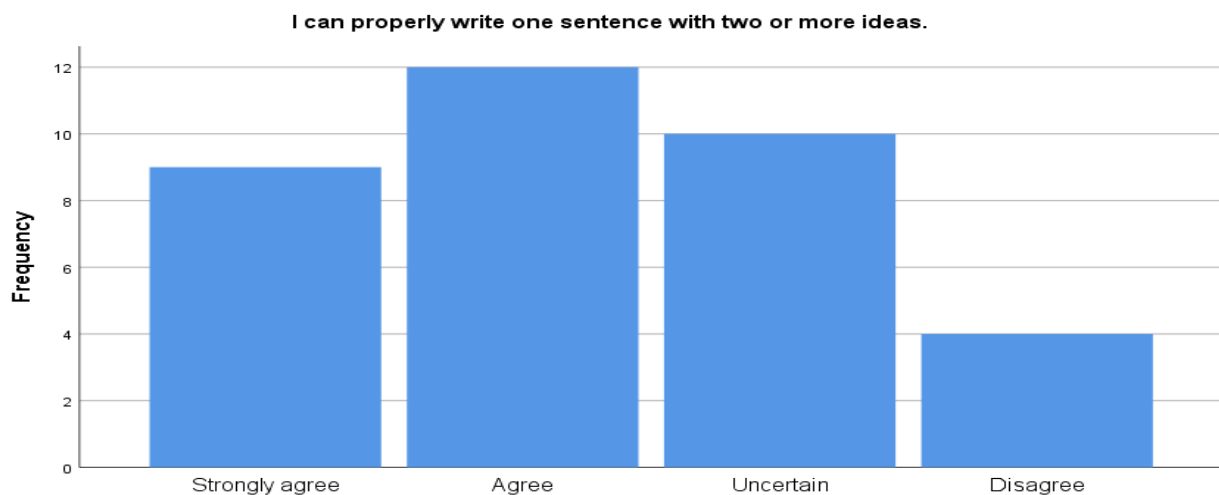
The cumulative sum of those who “strongly agree”, “agree” and who were “uncertain” would be competitive to those who opted for “strongly disagree” and “disagree”. Else, this could convey a random distribution of the rates that motive of which a written test can bring light to.

Table 38

*Ability to Write One Sentence with Two or More Ideas*

|       |                | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|----------------|-----------|---------|---------------|--------------------|
| Valid | Strongly agree | 9         | 25,7    | 25,7          | 25,7               |
|       | Agree          | 12        | 34,3    | 34,3          | 60,0               |
|       | Uncertain      | 10        | 28,6    | 28,6          | 88,6               |
|       | Disagree       | 4         | 11,4    | 11,4          | 100,0              |
|       | Total          | 35        | 100,0   | 100,0         |                    |

As a check out of the students' efficiency of the language content and its structures, 34,3% of them have positively reported their capability of writing a sentence that encompasses of more than one idea. This community have shared their "agree" option and were followed by the subsequent trend of those who have been "uncertain" of their efficiency to manifest more than one idea in just one sentence representing the average of 28,6%. Besides, those who strongly agree have figured the rate of 25,7% where disagreement was established to only 11,4% range.



*Figure 38. Ability to Write One Sentence with Two or More Ideas*

To a certain extent, students' potential in writing seemed to locate between acceptable to advance when considering the rates that have been communicated. To adjust students' students writing, they should act on well-formed ideas which have to be jotted with a proper language use. In turn, this would require following students' written tasks.

Table 39

*Students' Capability of Identifying the Types of Sentences*

|       |                | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|----------------|-----------|---------|---------------|--------------------|
| Valid | Strongly agree | 15        | 42,9    | 42,9          | 42,9               |
|       | Agree          | 9         | 25,7    | 25,7          | 68,6               |
|       | Uncertain      | 4         | 11,4    | 11,4          | 80,0               |
|       | Disagree       | 7         | 20,0    | 20,0          | 100,0              |
|       | Total          | 35        | 100,0   | 100,0         |                    |

This item completes the previous one which was more about students' production of sentences; moreover, the current one is about their ability to simply differentiate between the types of sentences in terms of purpose or structure. Those who strongly agree have been represented as the majority among others with the range of 42,9%. Subsequently, the second group was that of those who have agreed with being able to identify the types of sentences with the average of 25,7%. Disagreement, on the other hand, has reached the rate of 20% of the correspondent whereas those who have opted for "uncertain" reached 11,4% as the least among others.

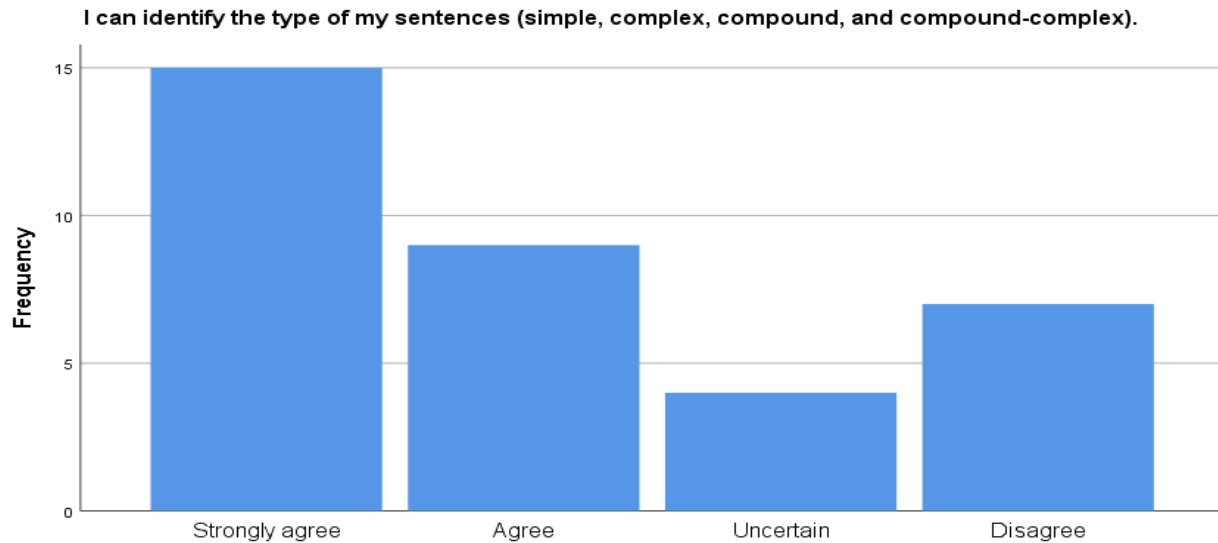


Figure 39. Students' Capability of Identifying the Types of Sentences

In comparison with the rates communicated in the previous item, the level of uncertainty between being able to produce and being able to identify types of sentences was different to a considerable variance. Put together, the level of disagreement in between being able to write has been lower than that of being able to identify the organisation of ideas in a sentence which, hence, appears to occur roughly then a written test might approve some clue in this regard.

### Section Five: Mobile-Based Editing

Table 40

*Affective Importance of Checking Errors before Handing Works to Teachers*

|       |                | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|----------------|-----------|---------|---------------|--------------------|
| Valid | Strongly agree | 14        | 40,0    | 40,0          | 40,0               |
|       | Agree          | 15        | 42,9    | 42,9          | 82,9               |
|       | Uncertain      | 3         | 8,6     | 8,6           | 91,4               |
|       | Disagree       | 3         | 8,6     | 8,6           | 100,0              |
|       | Total          | 35        | 100,0   | 100,0         |                    |

The overwhelming majority have expressed being less stressful and less embarrassing when they check their errors before having their works given to their teachers. This group have agreed to 42,9% average followed by those who those who have strongly agreed with the statement. With equivalent rates, those who have been uncertain and those who have disagreed each introduced the 8,6%.

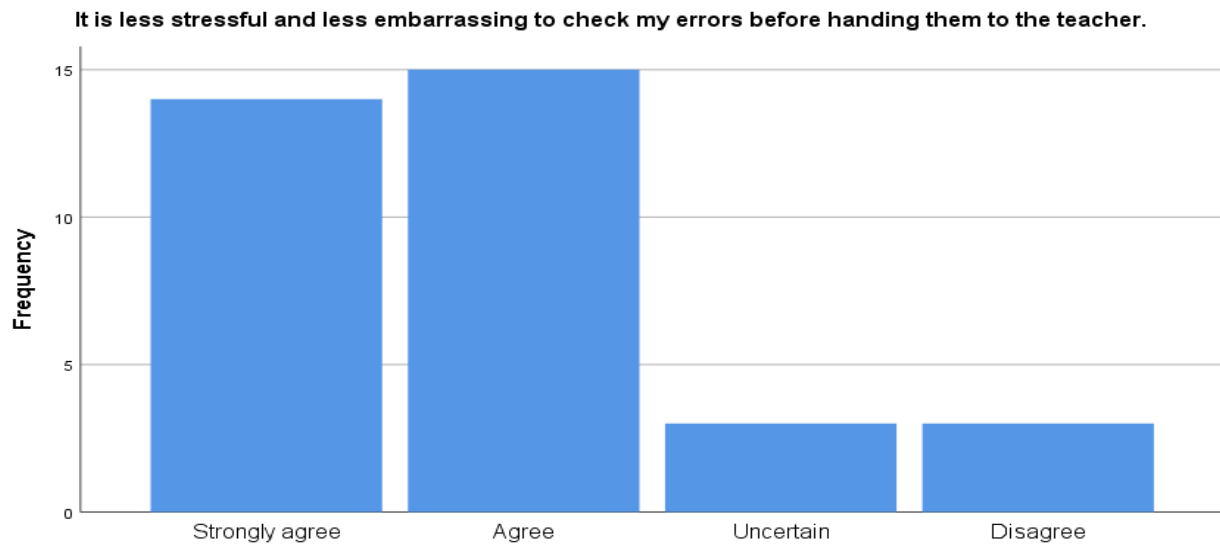


Figure 40. Affective Importance of Checking Errors before Handing Works to Teachers

Despite of the uncertainty and disagreement cases that have been figured out, students' comfort has been dominantly realised with the mostly selected option of "strongly agree" and "agree". As an introduction of not only the most ubiquitous but also functional techniques, mobile devices could be proposed for students as a pedagogical tool in both the formal and informal classroom settings.

Table 41

*Students' Awareness of the Aides that Mobiles Offer for the Revision of Writing*

|       |                | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|----------------|-----------|---------|---------------|--------------------|
| Valid | Strongly agree | 3         | 8,6     | 8,6           | 8,6                |
|       | Agree          | 15        | 42,9    | 42,9          | 51,4               |
|       | Uncertain      | 12        | 34,3    | 34,3          | 85,7               |
|       | Disagree       | 5         | 14,3    | 14,3          | 100,0              |
|       | Total          | 35        | 100,0   | 100,0         |                    |

To realise their awareness of the resources available in the mobile devices, 42,9% of the informants have reported “agree” as the major trend, however, it was followed by those who have transmitted “uncertain” to a 34,3% average. As for those who have been in disagreement, 14,3% has been the rate that ranged as a third subsequence and those who have been in strong agreement shared the least percentage of 8,6%.

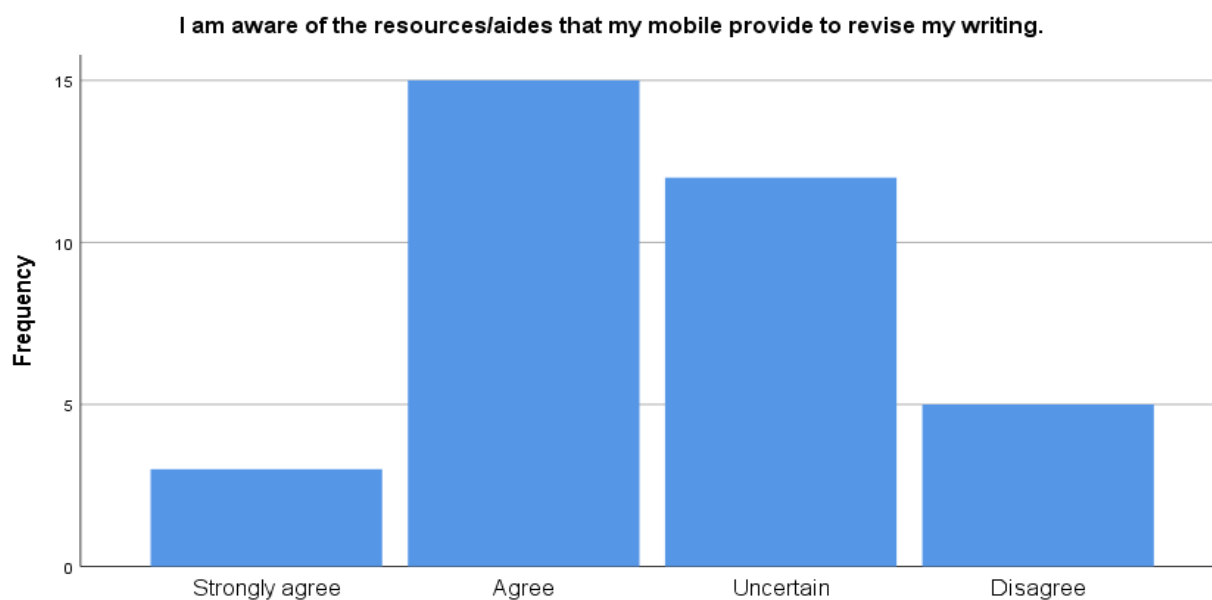


Figure 41. Students' Awareness of the Aides that Mobiles Offer for the Revision of Writing

Again, the random distribution of options rates could be competing, thus contradictory. In addition to the cases of disagreement, the level of uncertainty that has been established above cannot be overpassed. Having the sum of agreement across its both options, the sum of those who disagree and those who have been uncertain could assent a notable lack of awareness in terms of the educational kit that mobile devices can afford in the determined concern.

Table 42

*Students' Use of Mobile Applications to Check the Grammar of their Written Drafts*

|       |                | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|----------------|-----------|---------|---------------|--------------------|
| Valid | Strongly agree | 5         | 14,3    | 14,3          | 14,3               |
|       | Agree          | 11        | 31,4    | 31,4          | 45,7               |
|       | Uncertain      | 10        | 28,6    | 28,6          | 74,3               |
|       | Disagree       | 9         | 25,7    | 25,7          | 100,0              |
|       | Total          | 35        | 100,0   | 100,0         |                    |

To argue about their awareness, 31,4% among the study subject have reported their use of mobile applications in the rectification of their drafts. To considerable amounts, those who have communicated their uncertainty with the statment introduced 28,6%, and those who have reported their disagreement reached 25,7%. For those who strongly agree with using mobile applications for their drafts, 14,3% has been resulted from the opthions of the study subjects.

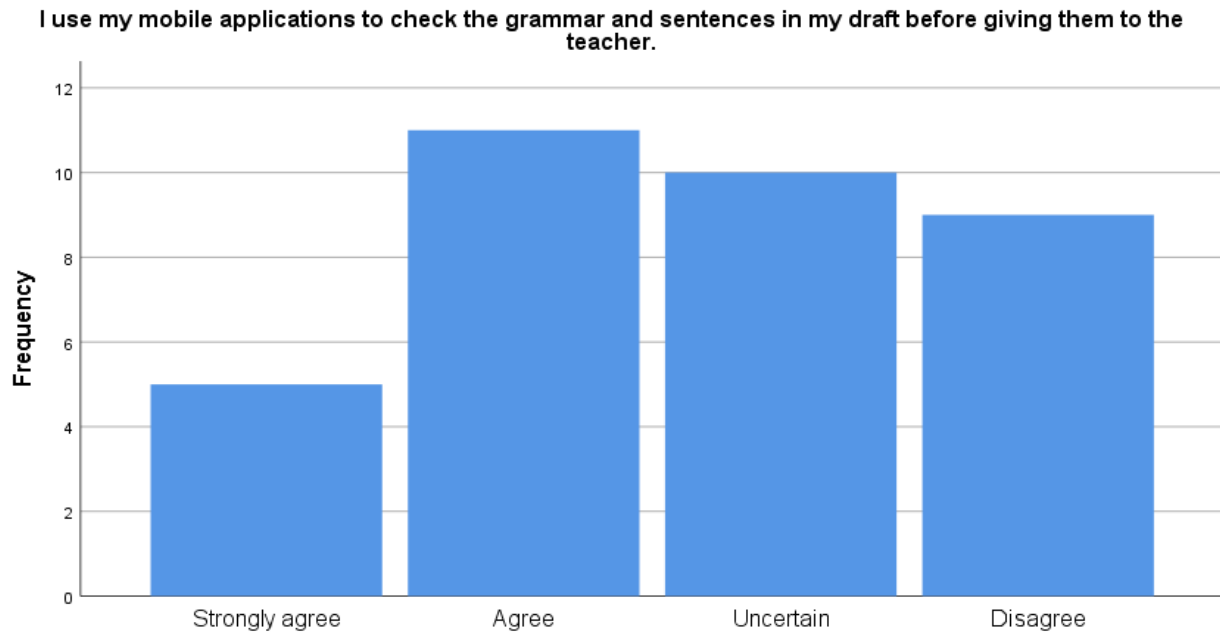


Figure 42. Students' Use of Mobile Applications to Check the Grammar of their Written Drafts

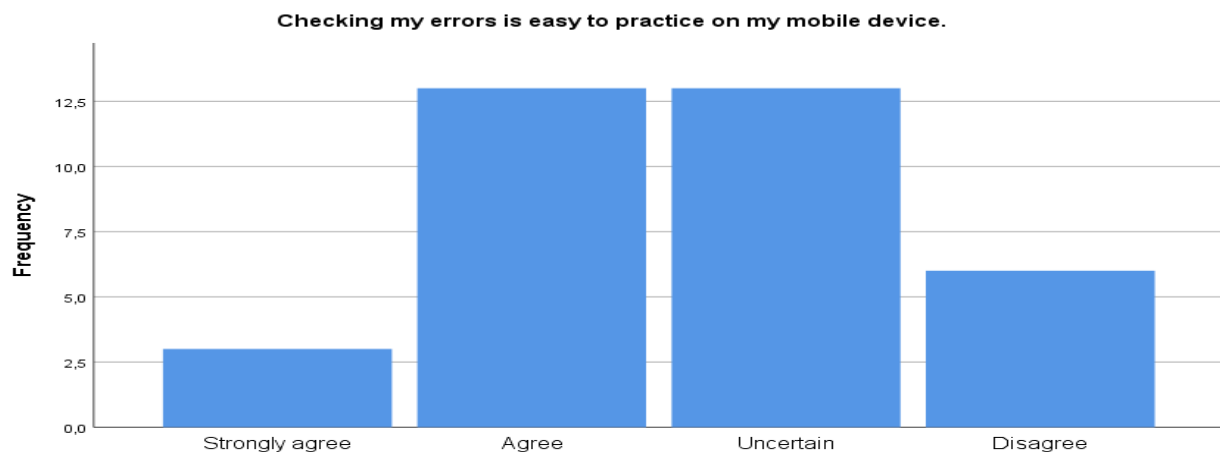
It became apparent that students' awareness and use of mobile devices remains modest. Being uncertain or in disagreement refers to lacking awareness of the instructional opportunities that mobile devices can afford for the enhancement of students' writing. Therefore, there should be a way of serving those opportunities to the students and embody certain measures to instruct them to the students.

Table 43

*Ease of Checking Errors through Mobile Devices*

|       |                | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|----------------|-----------|---------|---------------|--------------------|
| Valid | Strongly agree | 3         | 8,6     | 8,6           | 8,6                |
|       | Agree          | 13        | 37,1    | 37,1          | 45,7               |
|       | Uncertain      | 13        | 37,1    | 37,1          | 82,9               |
|       | Disagree       | 6         | 17,1    | 17,1          | 100,0              |
|       | Total          | 35        | 100,0   | 100,0         |                    |

Two leading options have been dominating with an equal rate for each. Likewise, those who have agreed with the ease of checking errors with their mobiles and those who have been uncertain about the given statement; each shared the range of 37,1%. Disagreement have been reported by 17,1% of the correspondents while the strong agreement has been attained by the least average of 8,6%.



*Figure 43.*Ease of Checking Errors through Mobile Devices

The redundancy of two different options has long been accompanying the rates of the present investigation which, therefore, appeals other strategies to attempt further practical findings. The act of getting similar rates for agreement and uncertainty would forcedly seem awkward and might render the application of other sorts of research regarding the use of the named technologies.

Table 44

*Practicality of Mobile Technologies in Noticing Errors in students' Writing*

|       |                | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|----------------|-----------|---------|---------------|--------------------|
| Valid | Strongly agree | 12        | 34,3    | 34,3          | 34,3               |
|       | Agree          | 9         | 25,7    | 25,7          | 60,0               |
|       | Uncertain      | 13        | 37,1    | 37,1          | 97,1               |
|       | Disagree       | 1         | 2,9     | 2,9           | 100,0              |
|       | Total          | 35        | 100,0   | 100,0         |                    |

For how much are mobile technologies practical in noticing errors according to students, the largest rate has derived from those who were “uncertain” of the mentioned practicality reporting 37,1%. Nearly, 34,3% has been scored from those who have opted “strongly agree” and 25,7% represented those who have declared “agree”. At last, only 2,9% have introduced their disagreement with the practicality of mobiles for noticing their errors when writing.

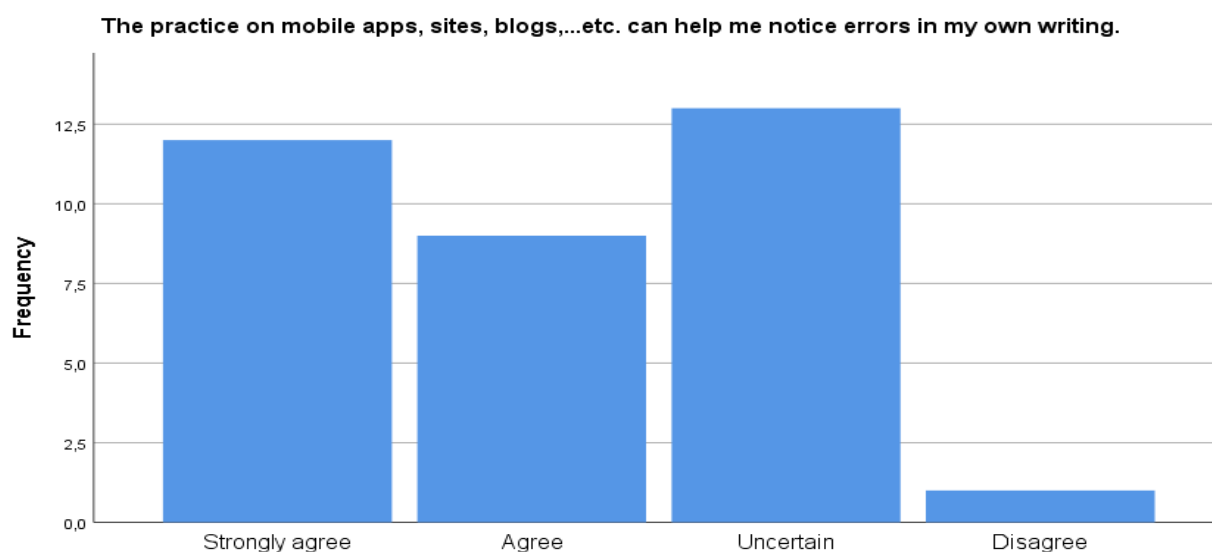


Figure 44. Practicality of Mobile Technologies in Noticing Errors in students' Writing

The sphere of uncertainty that has been arrived to by dint of this item could be conclusive of the previous items' outcomes. Although the level of strong agreement had its symbolic flow, the advancement of those who were uncertain, as a majority, would infer certain lack of tech knowledgeable or awareness of the instructional resources that mobile devices could bring into their learning.

#### **4.3.2 Writing Tests Analysis**

The writing tests have gone through a systematically adopted rubric that is comprised of four subsequent phases; two among which are baseline periods and two others are treatment periods. As demonstrated in Appendix D, students' performances have been recorded under the adopted grid that consisted of the most language aspects wherein editing should apply. The results of thirty five students were established to relatively escalate from the baselines to the treatments. It is worth raising the point of marking a consistent rise in the marks of second baseline period which might appear irregular; nonetheless, this has been conceived as a positive indicator of students raised awareness of the facilities that they have been made acquainted to in the previous baseline and treatment where they kept adopting the prior given set without any recommendation of the teacher as the latter was observing their behaviours in convalescence.

The first baseline period A (Appendix E) exposes the means of the marks that have been collected from the three-test stability term. The tests were done in a naturally spontaneous progress where an interval of 30 to 45 minutes maximum has been allocated without urging students to finish their works any earlier than that expected timing. Thus, almost all the responses could be handed before that given timing sufficed. The illustrated findings were said to be the least achieved averages in comparison to those of the other

periods that could naturally occur due to lacking the necessary linguistic backup which, though timid, was noticed to ameliorate with the advancement of their subject instruction. As having counted the stability as a critical factor, a timeline of six (06) weeks (Table 10) is considered the possible adequate to ascertain students steadiness of their new arrival to university, to module, to the teacher and any potential variable that could be intervening to their instructional behaviours.

After introducing some primary resources to the MALL, since the commencement of the first baseline, such as allowing mobiles in the classroom and encouraging their use for the FL learning, creating a Google Classroom and recommending the download of its mobile application in addition to initiating a Google Meet, a Messenger and a Facebook groups for further subject-matter contact and practice, the informants were made considerably ready to embrace the mobile-based editing strategies. The first treatment period has espoused the learning of the frequent errors in sentence writing with how to identify and distinguish between them by their own potentials. A better way of doing so is by going somehow deeper with what they have already known about MALL. As a consequence, a checklist of sentence writing was suggested by the teacher on the Google Classroom in addition to adopting some mobile apps and sites (mainly dictionaries for vocabulary and orthography with grammar error checkers for language use in general). As for the editing of their works during this period, students were requested to exchange their in-class or out-of-class assignments and then review what their peers have highlighted and rectify their own works by themselves with the possibility of asking help from their teacher. The timeframe for the treatment periods is noticeably prolonged than that of the baseline for the reason of achieving stability in each period which retains of being critical in the current method as invested by authors in literature.

The results of this period kept going on a rise; moreover, students were found to become sufficiently sensitive towards their own errors and were found competing to identify them by themselves. Furthermore, occasions of their consults of the teacher's help in rectifying some errors have decreased and collaboration with peers have increased. The students' performances went satisfactorily adequate and their marks seemed to approximate in comparison to those in the baseline; the Appendix (F) displays in details their results along that treatment interval.

Back to convalescence, the second baseline has proceeded the researcher's collection of all the observations and finding of the prior two first periods for him to devise an advanced treatment resources to be integrated in the subsequent intervention. That is to be noted from Appendix E is the relatively constant amelioration in students' writing skills as well as their reliance on the previously suggested set of resources and mobile-based techniques without any interference of teachers' recommendation of MALL. Therefore, this is a significant indicator that students are making use of the facilities as they are made aware of how to manipulate them. Still as appended, it is remarkably apparent some cases of restraint among the study informants whose marks seemed to hibernate in the current convalescence which might be due to teacher's retraction as compared to the treatment line. Subsequent to this period, there has been an unexpected sanitary spectrum of COVID-19 that came across the advancement of the experiment and that required its prolongation of the last intervention (Table 10). However, the measure to overcome this world wide situation were not of great impact on students' progress of the written expression classes; fortunately, this because they have been using Google Meet and Google Classroom apps since about the start of the academic year.

On that flow and to gear up the participants to the second treatment, remedial classes have been taking place on Google Meet lately towards April 30<sup>th</sup> (Table 10) to review lectures that have been tackled before the spring holidays and the quarantine. In this second treatment period, the researcher required students to adopt the self-editing checklist that has been exposed on the Google Classroom to magnify their reliance on their own knowledge and experience with MALL in the previous periods. Furthermore, the researcher has released the iWRGo application (Appendices K) which consisted of all the facilities that students seemed to mainly utilise in their editing throughout the experiment timeline. Namely, it consists of an iWriting Classroom where students and teachers meet and share any subject-related contents and materials; the functioning of this service is assimilated to that of the Google Classroom so that students would not find it sophisticated. Other provisions in the app consisted of an iSentence Writing where a link to a Walden University writing centre comprises of all that is associated with sentence writing. Another icon leads to the iWrite Page where student can freely jot down their compositions to be hinted of errors without any suggestions to correct in order to keep that learning challenge for students to well dominate their writing and check their own errors. Eventually, an iWordfinder provides a dictionary like definitions of vocabulary; this is said to be assisting students spelling in terms of orthography and or pronunciation. Student in this second treatment have demonstrated a significant satisfaction of the inclusive characteristics that the app could enclose instead of consulting different resources that may require a supplementary use of other equipment than a mobile. Again, the results that have been reached are found to get refreshed and their reliance on MALL became ordinary to the extent that they started making the teachers know about other mobile kits that could aid in their writing in general and self-editing in particular.

### 4.3.3 Post-Questionnaire

Table 51

*Students' Mastery of Spelling (Orthography) of Words in their Writing*

|       |                | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|----------------|-----------|---------|---------------|--------------------|
| Valid | Strongly agree | 14        | 40,0    | 40,0          | 40,0               |
|       | Agree          | 20        | 57,1    | 57,1          | 97,1               |
|       | Uncertain      | 1         | 2,9     | 2,9           | 100,0              |
|       | Total          | 35        | 100,0   | 100,0         |                    |

Students were claimed to have improved their orthography along the experimental stage. About 57,1% of the study subjects have agreed with being capable to spell words when writing. Those who stated “agree” have reached the rate of 40% while a single case of uncertainty has represented a 2, 9% range.

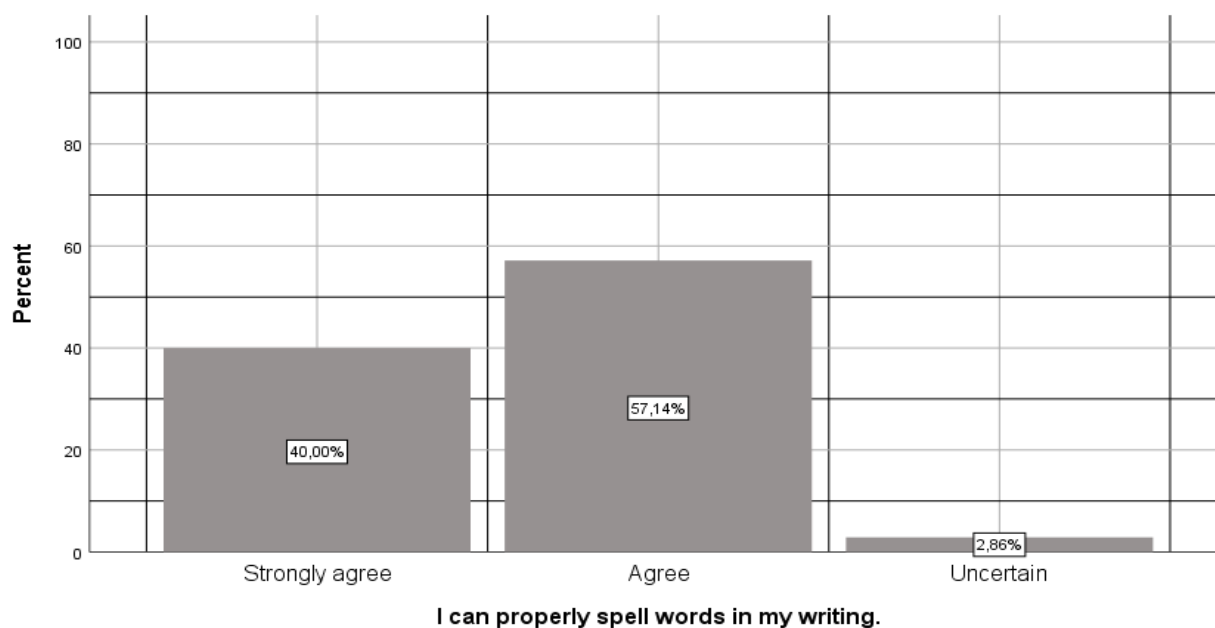


Figure 45. Students' Mastery of Spelling (Orthography) of Words in their Writing

The rates became more homogeneous in terms of distribution and options. In the pre questionnaire, the cumulative percentage of both options of agreement arrived to 65.7% in addition to a 17,1% rates of disagreement and uncertainty. However, the agreement of this item in the post questionnaire has reached 97,1% with a 2,9% of uncertainty and none of disagreement. This leads us to justify the considerable rate of agreement in the pre questionnaire to issue of readiness and honesty which was apparent from the random distribution of options at first.

Table 52

*Students' Efficiency in the Punctuation of Their Writing*

|       |                | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|----------------|-----------|---------|---------------|--------------------|
| Valid | Strongly agree | 8         | 22,9    | 22,9          | 22,9               |
|       | Agree          | 27        | 77,1    | 77,1          | 100,0              |
| Total |                | 35        | 100,0   | 100,0         |                    |

With both its figures, a pure agreement has derived about students' capability of punctuation. The agreement has been transferred with 27 of the informants introducing 77,1% of those who believe in their mastery of punctuation. On the other hand, the strong agreement has rather been communicated by 22% of the sample.

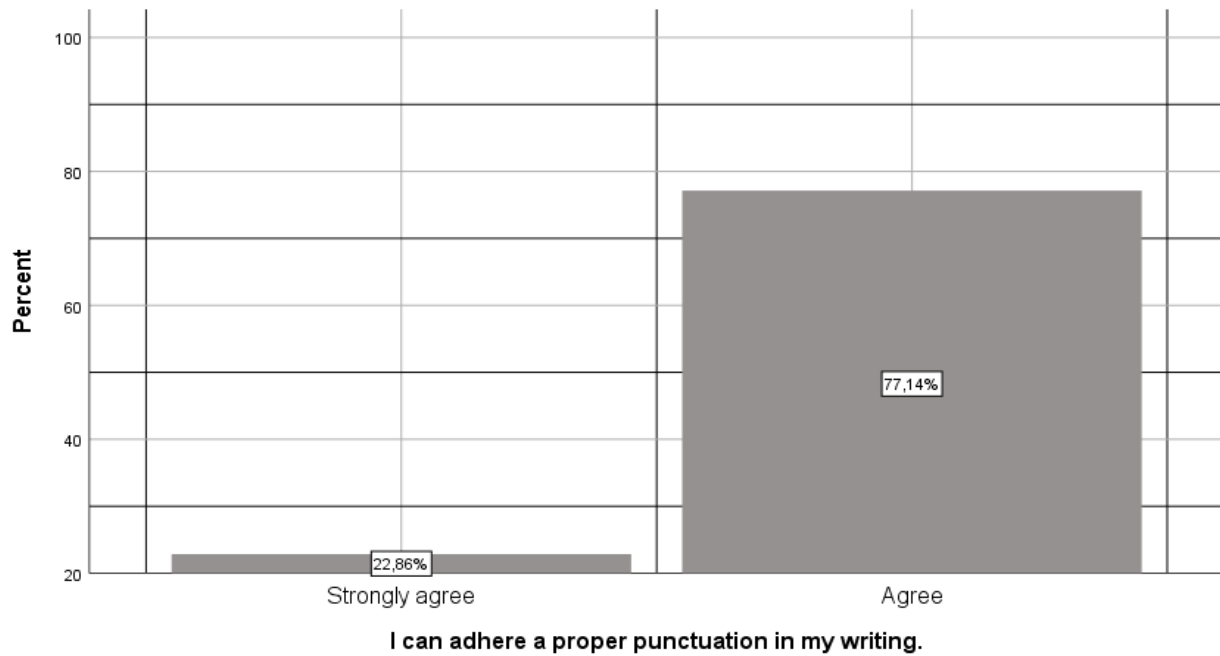


Figure 46. Students' Efficiency in the Punctuation of Their Writing

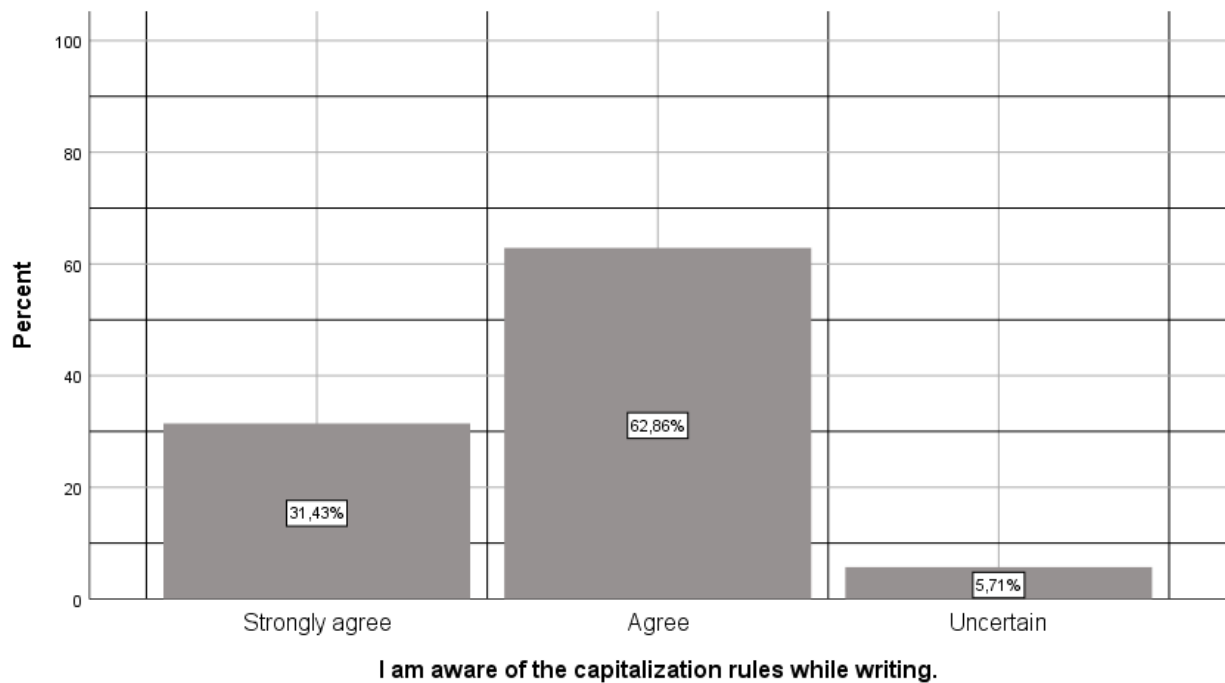
There has been a remarkable improvement in students' skills of punctuation. As showcased in the figure the post questionnaire, this item has reached the agreement of 100% cumulative percentage among those who simply agree or strongly agree. Nonetheless, the figure of this item in the pre questionnaire was overcome with 34,3% of uncertainty and 17,1% of disagreement. Furthermore, their efficiency of punctuation has been demonstrated with progress of the study treatment periods.

Table 53

*Students' Awareness of the Capitalization Rules While Writing*

|       |                | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|----------------|-----------|---------|---------------|--------------------|
| Valid | Strongly agree | 11        | 31,4    | 31,4          | 31,4               |
|       | Agree          | 22        | 62,9    | 62,9          | 94,3               |
|       | Uncertain      | 2         | 5,7     | 5,7           | 100,0              |
|       | Total          | 35        | 100,0   | 100,0         |                    |

As for the students' knowledge of the capitalization rules when writing, the averages seem to converge more than the case in the pre experimental phase. Thus, 62,9% of the informants have declared their agreement with the given statement; intensively, the subsequent rate of 31,4% have strongly agreed with the stated efficiency in capitalization. Ultimately, a level of uncertainty, though with the fewest rate, has still been resistant with 5,7%.



*Figure 47.* Students' Awareness of the Capitalization Rules While Writing

The distribution of options, as apparent in all the items of the post questionnaire, has established a notable convergence when compared with the outcomes of the post experimental phase. Therefore, the cumulative percentage of agreement has escalated to 94,3% instead of the 51,4%. Additionally, the cases of uncertainty and disagreement have turned into a remarkable diminution with a definite disappearance of disagreement.

Table 54

*Identification of the Parts of Speech in Sentences*

|       |                | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|----------------|-----------|---------|---------------|--------------------|
| Valid | Strongly agree | 12        | 34,3    | 34,3          | 34,3               |
|       | Agree          | 19        | 54,3    | 54,3          | 88,6               |
|       | Uncertain      | 4         | 11,4    | 11,4          | 100,0              |
|       | Total          | 35        | 100,0   | 100,0         |                    |

The knowledge about parts of speech has developed through the intensive practice on sentence writing which accompanied the experimental phase. Those who agreed have represented the major trend with the range of 54,3%, while those who strongly did have demonstrated a 34,5% rate. Being uncertain of their capability to fully identify the parts of speech has been communicated by the rest 11,4% correspondents.

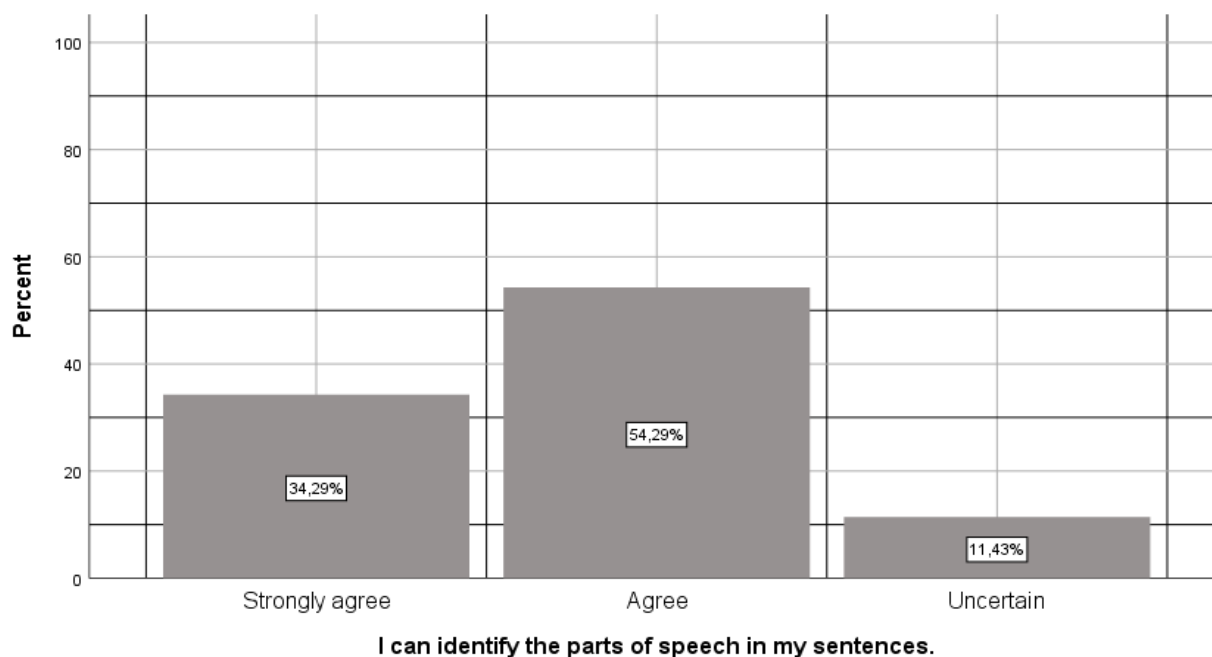


Figure 48. Identification of the Parts of Speech in Sentences

Again, the issue of having scattered rates in the pre questionnaire might be argued with students' feeling of insecurity and thus their declared level of honesty. Worth mentioning is the high level of uncertainty that derived from the pre questionnaire added to considerable cases of disagreement and strong disagreement with the given statement. However, the options in the post questionnaire seemed reasonable with the approximation of levels of agreement, decrease of uncertainty and disappearance of disagreement.

Table 55

*Students' Deficiency in Grammar when Writing*

|       |                | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|----------------|-----------|---------|---------------|--------------------|
| Valid | Strongly agree | 10        | 28,6    | 28,6          | 28,6               |
|       | Agree          | 20        | 57,1    | 57,1          | 85,7               |
|       | Uncertain      | 5         | 14,3    | 14,3          | 100,0              |
|       | Total          | 35        | 100,0   | 100,0         |                    |

Language use has long been a challenge for the students under investigation ; However, the change of rates went up to demonstrate their satisfactory tact during and after the experiment procedures. Consequently, an accumulation of the “agree” and “strongly agree” has escalated to a 85,7%. Yet, the presence of 14,3% uncertainty is still decreasing though, again, still resistant.

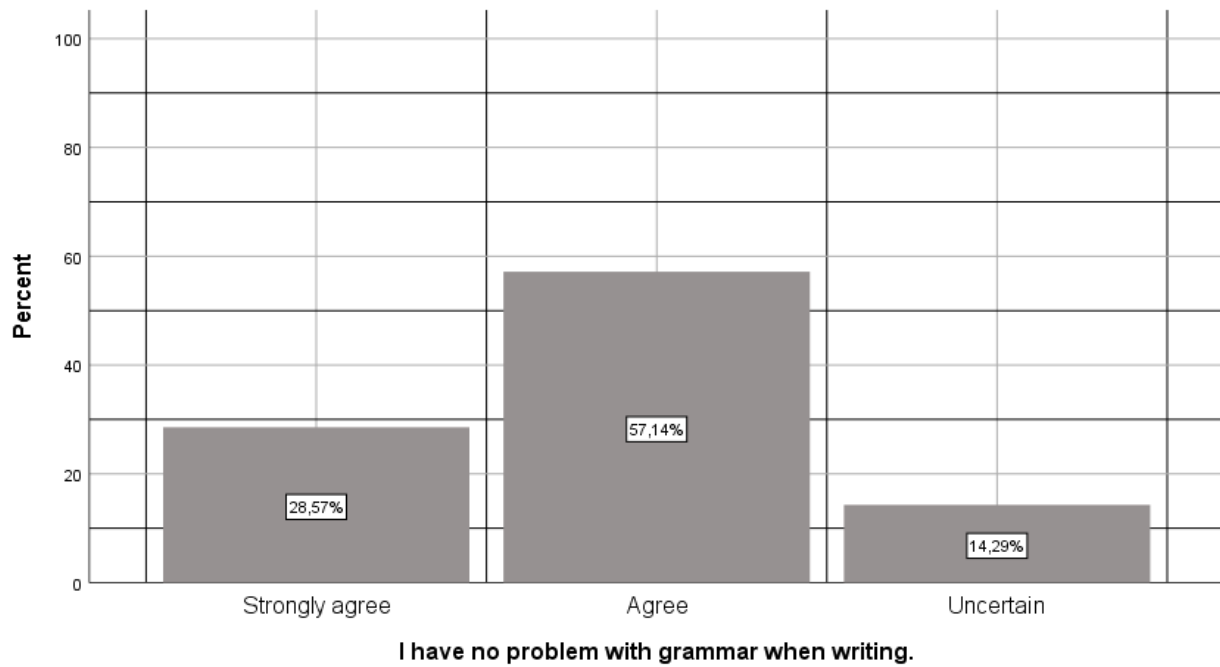


Figure 49. Students’ Deficiency in Grammar when Writing

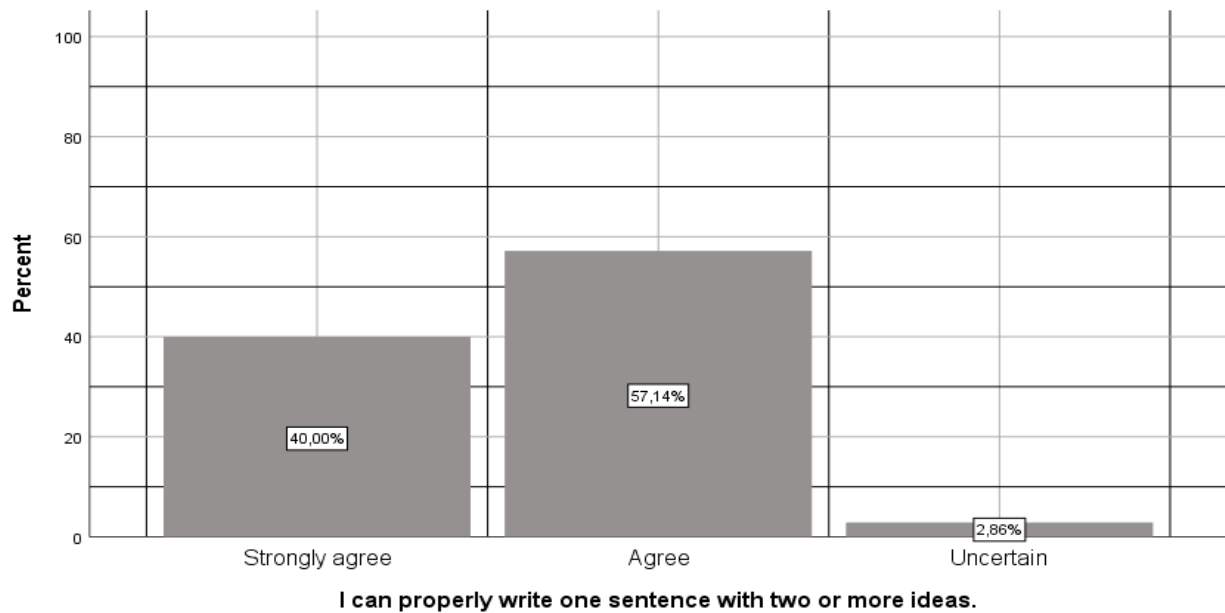
Although the declared resistance of being uncertain of their struggles with grammar, it is of worth to illustrate that about 51,5% of disagreement has been overcome across the practices on grammar along the experimental timeline in addition to the remarkable decrease of uncertainty, which in turn could be conceived as a neutral option.

Table 56

*Ability to Write One Sentence with Two or More Ideas*

|       |                | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|----------------|-----------|---------|---------------|--------------------|
| Valid | Strongly agree | 14        | 40,0    | 40,0          | 40,0               |
|       | Agree          | 20        | 57,1    | 57,1          | 97,1               |
|       | Uncertain      | 1         | 2,9     | 2,9           | 100,0              |
|       | Total          | 35        | 100,0   | 100,0         |                    |

With a single case of uncertainty, students' ability to join ideas and express them in a sentence has developed. Those who agree have introduced the average of 57,1% with a subsequence those who strongly agree with a 40% shaping the leading majority of those who are able to write a sentence with more than one idea. Yet, a minor average of 2,9% has been represented by one correspondent who expressed being unsure of the given statement.



*Figure 50.* Ability to Write One Sentence with Two or More Ideas

It has nearly been of a total efficiency to expressing ideas and jotting them on a cohesive sentence. In spite of the presence of a single case of uncertainty, the showcased cumulative percentage of the transferred capability to write sentences with coordination or subordination of ideas arrived to 97,1% in the post experimental phase. The rates in the pre questionnaire went instable and student seemed unconfident where cases of disagreement and uncertainty contradicted with the unjustified increase of agreement on their efficiency compared to their true performances throughout the experiment.

Table 57

*Students' Capability of Identifying the Types of Sentences*

|       |                | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|----------------|-----------|---------|---------------|--------------------|
| Valid | Strongly agree | 17        | 48,6    | 48,6          | 48,6               |
|       | Agree          | 18        | 51,4    | 51,4          | 100,0              |
|       | Total          | 35        | 100,0   | 100,0         |                    |

Likewise, this item is associated with the previous one in that it explores students' efficiency to identify the type of sentences that result from joining more than one idea in one sentence. As consequence, a pure agreement could be established, with both its extents, on their ability to identify the structural type of sentences. In details, the averages derived from this query have been of competitive rates while agreement ranged 51,4% and strong agreement was 48,6%.

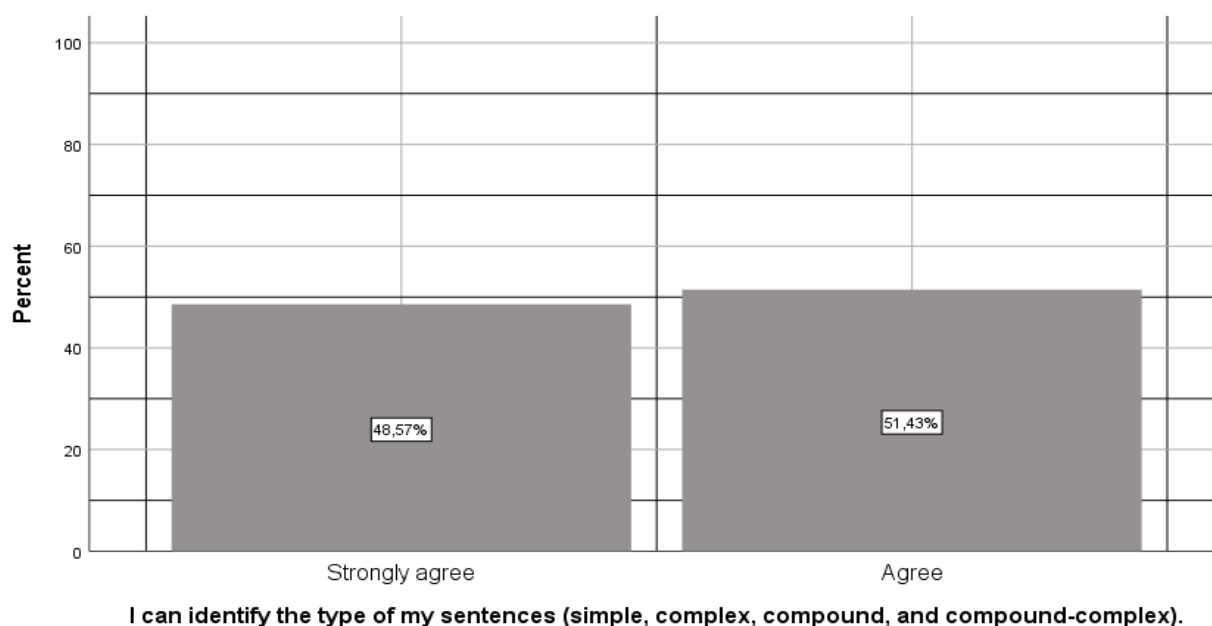


Figure 51 .Students' Capability of Identifying the Types of Sentences

The outcomes were expected through students' performances right from the commencement of the experiment. Students become aware of the linking words and conjunctions that define subordination and coordination in sentences.

Table 58

*Students' Awareness of the Aides that Mobiles Offer for the Revision of Writing*

|       |                | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|----------------|-----------|---------|---------------|--------------------|
| Valid | Strongly agree | 7         | 20,0    | 20,0          | 20,0               |
|       | Agree          | 24        | 68,6    | 68,6          | 88,6               |
|       | Uncertain      | 4         | 11,4    | 11,4          | 100,0              |
|       | Total          | 35        | 100,0   | 100,0         |                    |

As an ample contribution to answering one of the main research questions, the ending questions of this post questionnaire are directed to adjust their awareness and positive perception towards the use of their mobile devices for sentence writing in general and self-editing in particular. Therefore, the absence of any disagreement has marked a notable enhancement of their awareness with a decrease of uncertainty from 34,3% to 11,4%. By dint of a regular reliance on their mobile technologies, students were established to be aware to a 68,6% of agreement and a 20% of strong agreement.

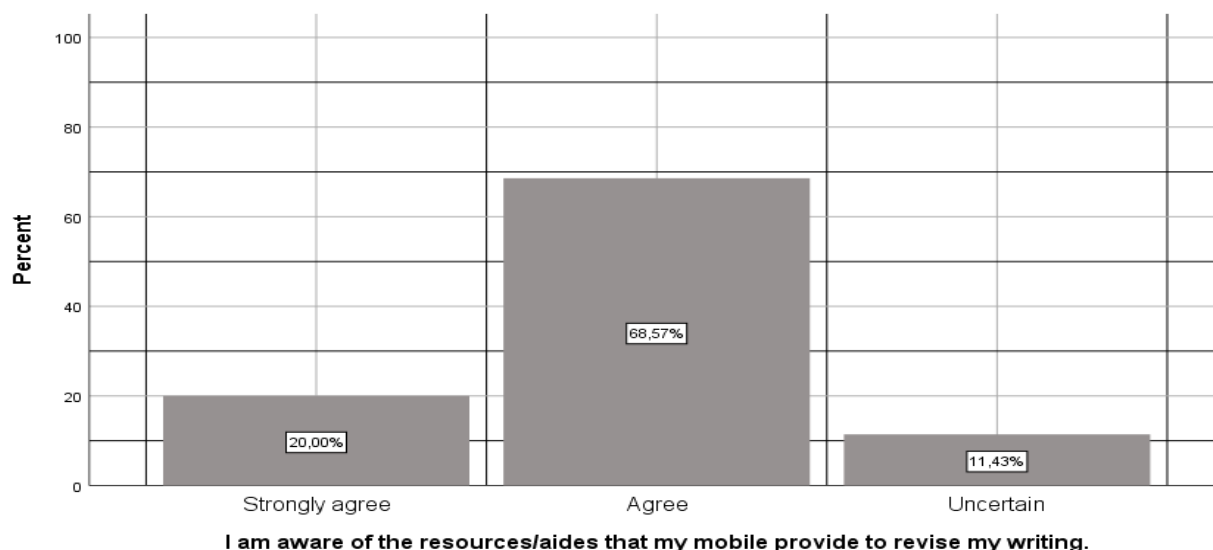


Figure 52. Students' Awareness of the Aides that Mobiles Offer for the Revision of Writing

The cumulative percentage that assures students raised awareness was that one communicated in the levels of agreement. As exposed from the post questionnaire, the latter has escalated to the rate of 88,6% of those who confirmed their awareness of the mobile aids in their devices. Moreover, about 14,3% of disagreement and 34,3% of uncertainty have been secured after the accomplishment of the treatment periods.

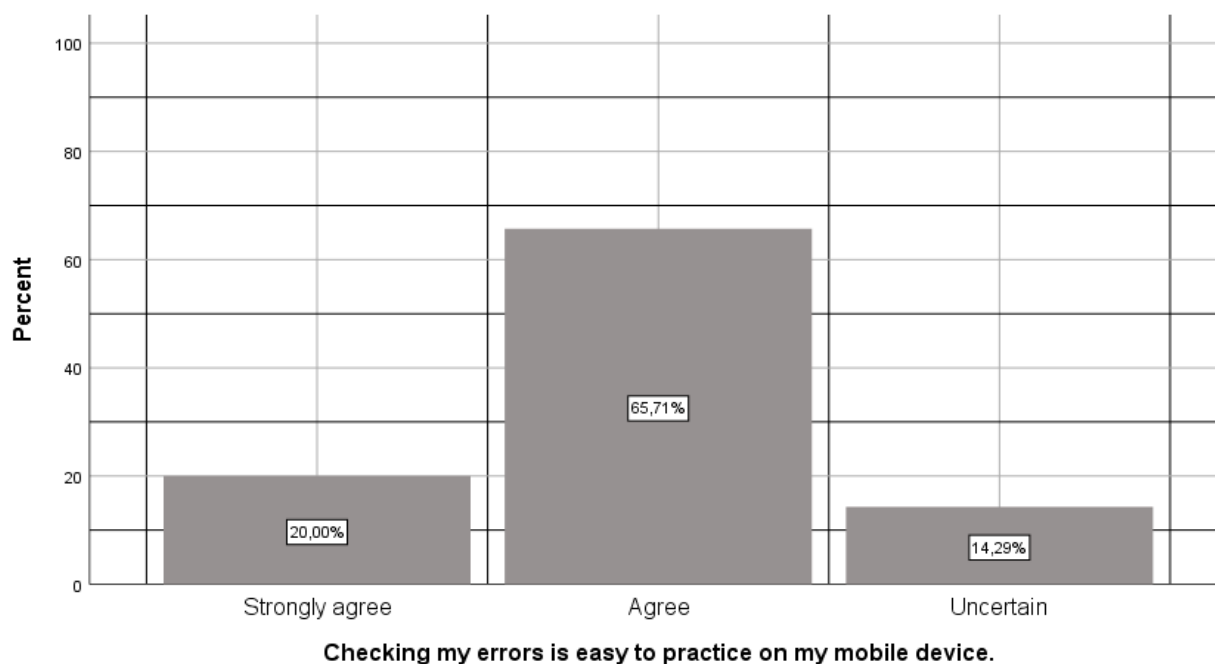
Table 59

*Ease of Checking Errors through Mobile Devices*

|       |                | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|----------------|-----------|---------|---------------|--------------------|
| Valid | Strongly agree | 7         | 20,0    | 20,0          | 20,0               |
|       | Agree          | 23        | 65,7    | 65,7          | 85,7               |
|       | Uncertain      | 5         | 14,3    | 14,3          | 100,0              |
|       | Total          | 35        | 100,0   | 100,0         |                    |

Ease of use has primarily been stressed on since the conduct of the preliminary investigations. Yet, the test of consistency in students' perceptions is thought to be pulsed

throughout the research line. Accordingly, students have attained a considerable ease of use with 65,7% of those who agreed with statement and 20% of those who strongly agreed. Minor cases of uncertainty have reported the range of 14,3%.



*Figure 53.*Ease of Checking Errors through Mobile Devices

The finding of those last items seem to serve the answering one of the research queries related to Awareness. Thus, issues of the perceived usefulness and perceived ease of use have been secured all along the research phases. With 85,7% representing an accumulation of agreement on the ease of practice on mobile technologies, MALL can be said not only convenient to the actual EFL classroom but also the mainly favorable approach among students and teachers.

Table 60

*Students' Reliance on the Resources of Mobile Technologies*

|       |                    | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|--------------------|-----------|---------|---------------|--------------------|
| Valid | Extremely reliable | 17        | 48,6    | 48,6          | 48,6               |
|       | Very reliable      | 16        | 45,7    | 45,7          | 94,3               |
|       | Somewhat reliable  | 2         | 5,7     | 5,7           | 100,0              |
|       | Total              | 35        | 100,0   | 100,0         |                    |

On how much students were relying on their devices for the classes of writing, informant were requested to mark the extent on a six point scale. As a result, 48,6% stated that they extremely rely on their mobiles and 45,7% have reported “very reliable”. Consistently, the third trend was that of those declared their fair reliance with a 5,7% rate.

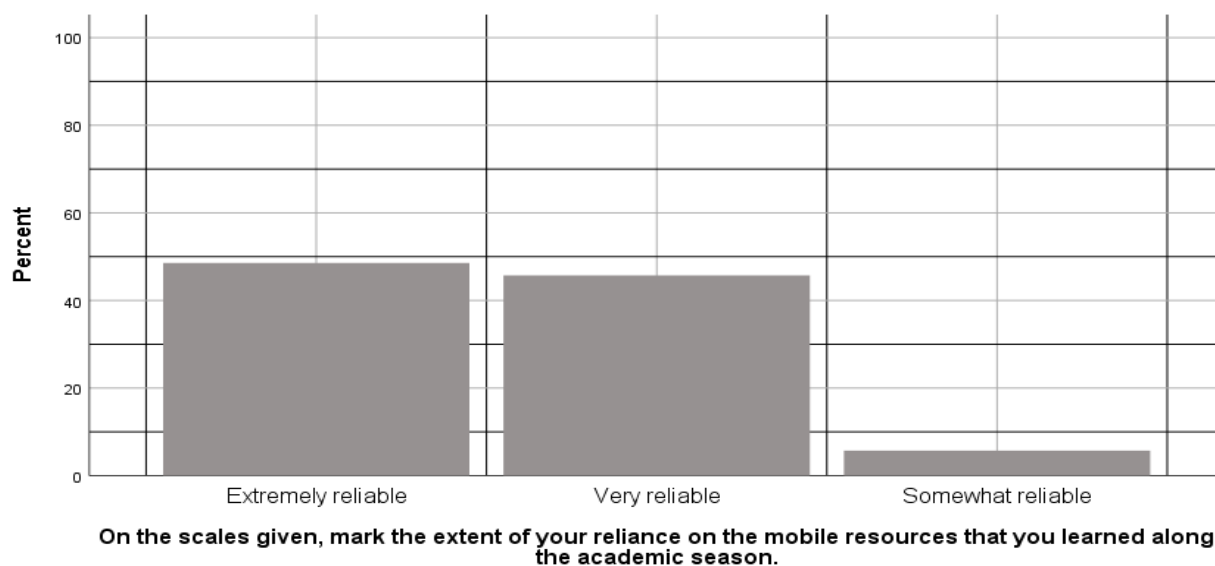


Figure 54. Students' Reliance on the Resources of Mobile Technologies

A clear argument that ascertains utility, ease of use, and awareness about mobile incorporation in the EFL classroom with the presence of certain measure can help switch

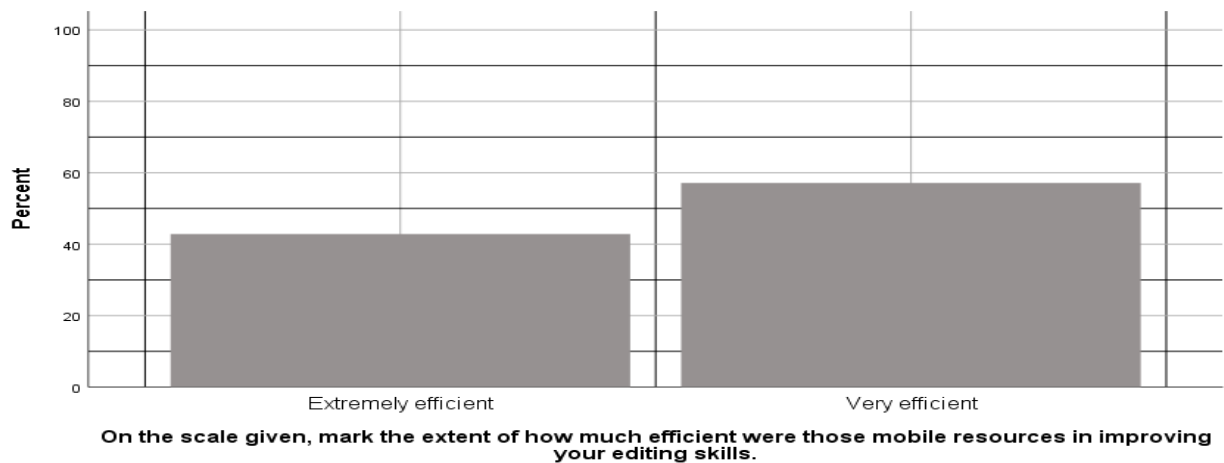
students and teachers attitudes towards MALL. As demonstrated, the total number of informants has reported their reliance on the resources that their hand-palm technologies offer.

Table 61

*Perceived Efficiency of the Mobile Technology Use in Improving Self-Editing*

|       |                     | Frequency | Percent | Valid Percent | Cumulative Percent |
|-------|---------------------|-----------|---------|---------------|--------------------|
| Valid | Extremely efficient | 15        | 42,9    | 42,9          | 42,9               |
|       | Very efficient      | 20        | 57,1    | 57,1          | 100,0              |
|       | Total               | 35        | 100,0   | 100,0         |                    |

An item that concludes the research main concerns displays an extreme efficiency of mobiles in ameliorating the self-editing skills. The leading trend were those who verily perceived that efficiency with 57,1%. The rest 42,9% has expressed the efficiency of those devices by reporting an extreme efficiency.



*Figure 55.* Perceived Efficiency of the Mobile Technology Use in Improving Self-Editing

Consensus about the efficiency of MALL in improving students' self-editing has been transcribed along the earlier stages of the present research. Hence, the last question in this research has envisioned the embodiment of a strong infrastructure for the MALL to settle.

Table 62

*Statistical Comparison of Homogeneity between the Pre and Post Questionnaires*

|  | N     |         | Mean | Std.<br>Deviation |
|--|-------|---------|------|-------------------|
|  | Valid | Missing |      |                   |
| I can properly spell words in my writing.  | 35    | 0       | 1,63 | ,547              |
| I can adhere a proper punctuation in my writing.   | 35    | 0       | 1,77 | ,426              |
| I am aware of the capitalization rules while writing.  | 35    | 0       | 1,74 | ,561              |
| I can identify the parts of speech in my sentences.  | 35    | 0       | 1,77 | ,646              |
| I have no problem with grammar when writing.   | 35    | 0       | 1,86 | ,648              |
| I can properly write one sentence with two or more ideas.  | 35    | 0       | 1,63 | ,547              |
| I can identify the type of my sentences (simple, complex, compound, and compound-complex).           | 35    | 0       | 1,51 | ,507              |
| I am aware of the resources/aides that my mobile provide to revise my writing.                       | 35    | 0       | 1,91 | ,562              |
| Checking my errors is easy to practice on my mobile device.  | 35    | 0       | 1,94 | ,591              |
| Mark the extent of your reliance on the mobile resources that you learned along the academic season. | 35    | 0       | 1,57 | ,608              |
| Mark the extent of how much efficient were those mobile resources in improving your editing skills.  | 35    | 0       | 1,57 | ,502              |

The table above demonstrate the level of homogeneity achieved from the sample questions of the post questionnaire. Therefore, findings of the pre questionnaire did not achieve that homogeneity in means for the reason that their consistency and honesty when responding can be critically affected.

### 4.4 Conclusion

As figured in the table and figure, there has been a solid consistency in terms of the averages, means and standard deviations among the study subjects and the homogeneity that could be approved from the finding of the post questionnaire. Those conclusive questions could ensure certain inconvenience in the findings of the pre-questionnaire; however, this has been a motive to test their confidentiality, insecurity and honesty by leading a practical experiment. The latter is found not only improve their skills in editing but also their perceptions and awareness of the facilities that MALL could supply all along the journey.

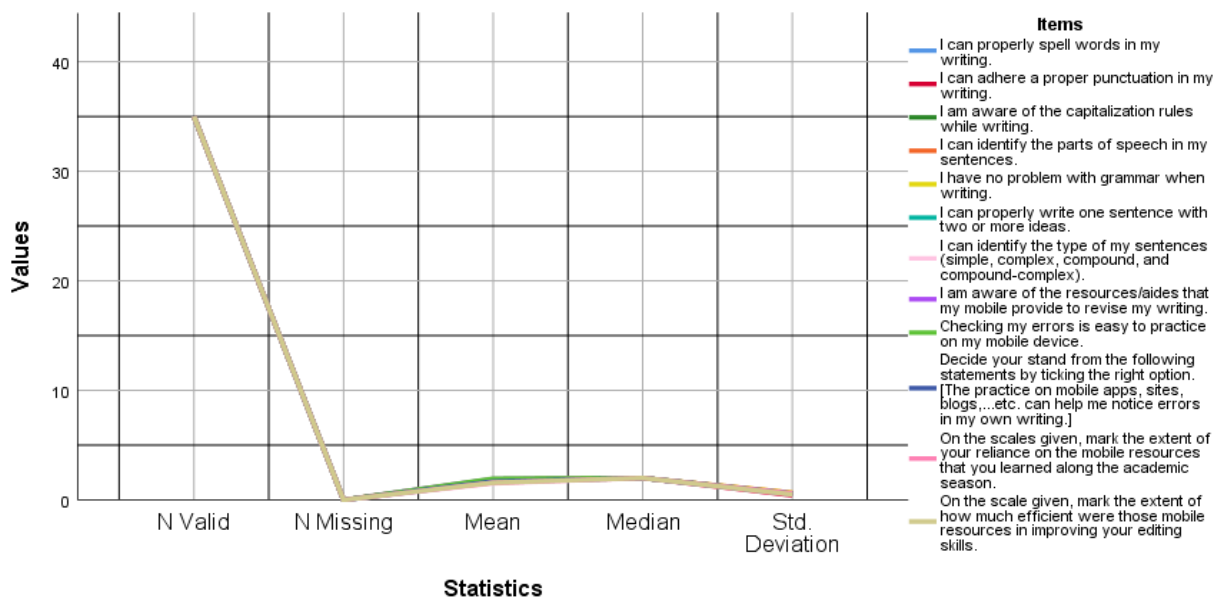


Figure 56. Homogeneity between the Pre and Post Questionnaires

CHAPTER FIVE: GENERAL CONCLUSIONS, RECOMMENDATIONS FOR PRACTICE  
AND IMPLICATIONS FOR FURTHER RESEARCH

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## **GENERAL CONCLUSIONS, RECOMMENDATIONS FOR PRACTICE AND IMPLICATIONS FOR FUTURE RESEARCH**

Based on the strategic framework of TAM and as initiated from its six constructs, the external variables, perceived usefulness together with the perceived ease of usefulness, attitudes, behavioural intentions to the actual system use have led to approving the main extrapolation that was hypothesized in this research.

The security of external variables could endure both the preliminary and pre experimental stages where subjects' behavioural feature needed pursuit to settle on a relatively stable set of demeanours to explore and examine thenceforth. The findings of the prime construct, external variable, have been secured since the preliminary phase of this research. Students' contributions throughout the exploratory investigation tools were found to commonly share certain conditional features. However, the variability of those features has been under systematic scrutiny illustrated in the means of the trends that differed or showed inequitable variables with one another. Those features that seemed variable among the informants have been counted in means according to given responses then compared to showcase whether their difference in variables affect their contribution and perceptions. As previously demonstrated in the section of Variable-Security Analysis, the students were found to slightly diverge in figures of age, gender, average of English in the baccalaureate and their perceptions of their levels in English. Consequently, the means of their answers were approximate or almost similar that meant that those variables could not stimulate any discordance of attitudes, perceptions or motivation among the different trends. It was until the analysis of the preliminary investigations that the researcher could settle on the adaptation of

TAM as being compatible for a single-subject methodology which in overall supplied a systematic answer to the research leading query.

### **5.1 Efficiency of MALL in Self-Editing Students' Sentence Writing**

After the accomplishment of the primary analysis, the usefulness (PU) has been granted from students' declarations of their perceptions of MALL through the FGI and right after that, when students were introduced to an environment where they were exclusively encouraged to use their mobile devices with a given kit of platforms like the Google Classroom, web editing sites like Hemingway Editor, Grammarly and the ProWritingAid in addition to grammar related apps in their classes of writing. In the beginning of the experimental phase, the pre questionnaire has been efficient in demonstrating students' PEOU especially while being under a mobile based approach that raised their awareness of the provisions that those technologies offer for their writing classes in general and for their editing in particular. Posteriorly with the outcomes of the pre questionnaire, the initial baseline period has illustrated and confirmed students' attitudes (A) towards using MALL when editing their own errors or those of their peers. Along the journey, the behavioural intention to use MALL in self-editing came apparent together with the proceedings of the A-BA-B periods. The versions that students produce kept ameliorating their identification of errors, their types, and the potential ways of revising them. When comparing the students' compositions aligned with their reliance on the recommended facilities in their mobile devices, the researcher has revealed a competitive performances when writing wherein the ability of identifying errors and sufficiently editing them were proved approximate among the subjects under study. However, the resulted homogeneity in the writing skills of the students went on a progressive advancement after each period and across the baselines and treatments of the experimental

phase. Likewise, it is by dint of this line of examination that students' behavioural intentions to use MALL in self-editing (BI) have been on a cumulative transcendence. At the end of the experiment, the actual system use could be ascertained when the entire sample of this study has elucidated their reliance on the facilities that are either recommended by the teacher or mainly established by themselves. In addition to the sites, platforms and apps that the teacher supplied earlier to the experimental phase, the creation of the iWRightGo have accompanied the successive investigations to resort all the possible deficiencies and the students' needs to exclusively be editors of their own writing. Thence, the devised application included the requirements of a writing class in general and the editing strategies that students seemed to need for this stage in sentence writing. Throughout the advancement of the treatment periods, students were found to develop a common awareness of the types of errors and their identification amidst a pure mobile instructional environment.

### **5.1.1 Teachers' and Learners' Perceptions and Awareness of MALL**

There has been a considerable raise of interest when teachers and students were being investigated about MALL. Throughout this journey, teachers have stimulated the issuable factors that still stand as hindrances for the deployment of such an infrastructure in their classes. However, the majority seemed self-encouraged to share their positive perceptions of the facilities that their limited use of mobile devices proves efficient. Though limited, the appropriate utilisation of those devices, as declared earlier by Hwang (2014), is a vital aid for students' motivation to participated in the FL practices. As for students, the perceptions towards efficiency at the beginning of this research was not that clear especially as they communicated unstable stances towards the ease of using such, according to them, informal means of learning. Nonetheless, this view commenced to change after they were introduced to

the first steps of the experiment; here where they were provided with limited but useful mobile resources and were oriented on how they could serve. This outcome goes assertive to the finding of Chinnery (2005) who concluded that students can better feel the interactivity of information between them and their educators. Consequently, the student have built an awareness of what resources are useful and how to use them as interactive ways to share a certain knowledge out of the traditional setting of a classroom; as a result, these instructional tools contribute in strengthening the sociocultural awareness when learning (Pachler, Bachmair and Cook 2010).

### **5.1.2 Roles of Teachers and Learners When MALL Is Adopted**

In the so called “semi-formal” classrooms (Gorham et al., 2009), the role of teachers can be said to confine in the assignment of the instruction and cater for the socialisation of learners with their peers. Similar to what has been reviewed in literature, among the functions that teachers should deploy are among others; being an educational technologists, and experts of their subject matters and interaction facilitator (Goodyear et al., 2001; Anderson & Garrison, 2003; Hampel & Lamy, 2007). Moreover, the application of MALL has realized an effective flipped version of blended instruction; that is, it could move out certain practices or activities and retains the formal setting for a mere fostering of students’ lacks in knowledge amidst collaborative environment. The role of a teacherpreneur, suggested by Berry et all. (2013), is applicable for MALL users as they manipulate and make use of its supplied provisions and then devise, like entrepreneurs do, the mostly compatible in that particular terrain of instruction. As far as the roles of students are concerned, the MALL environment has confirmed the students as being citizens of an age of information; this went alike to Neuman’s (2011) claims that students are becoming skilled managers of the information. Other roles are

those declared by Ó Murchú (2005) among which is the self-learners. From the outcomes of this research, students were found to be self-responsible to opt for the suitable technologies whose resources serve their preferences of learning in collaboration with their peers and teachers. Besides, MALL could ensure a team member role for students by being socially interactive through the multimedia aids available in their mobile devices.

In overall, MALL is said to embody the student-centred learning environment with guidance of their teachers to maintain the insertion of collaboration and socialisation in learning (Arends and Kilcher, 2010; Comas-Quinn, Mardomingo and Valentine, 2009).

### **5.1.3 Confronting Challenges in the Implementation of MALL in EFL Classes**

According to the research samples that participated in this research, the controversy of affordance has been represented as the major hindrance for the implementation of MALL in the EFL Classes. The set challenges that were reported by Alhajiri (2016) were truly proven resistant; likewise, there was remarkable lack pedagogical policies that make the fluidity of MALL adaptations. In other words, teachers, students and the researchers himself have been under certain defies in terms of management and institutional regards to including an awareness trigger about what this approach is about and how could it be included in the context of academia (McGreal, 2012) added to the communicated misrecognition of any facility or equipment provided by the institution where this study informants teach or study. At the beginning of the research, there has been a sort of downplaying of the MALL utility in the concept of traditionally formal classrooms; this matter of reluctance toward the appliance of mobile technologies was proclaimed by Alhajiri (ibid) under the label of social norm challenges. Depending on that view and on what has been established, some informants were reproaching each other's stands from using or not using their mobiles during the class time;

therefore, a shared despondency has been marked though being relative in some subjects over others.

## **5.2 Recommendations for Practice**

Anchored in the findings and conclusions drawn from the completion of this research, the following humble suggestions are believed to avail as maximum the provisions that MALL counts to maintain. Therefore, the main purpose of this section is to raise the awareness of all the university actors named in managers and policymakers, course designers, teachers and students (Pachler, Bachmair and Cook 2010).

For pedagogical managers and policymakers,

- Providing necessary infrastructure kit for faculty members and students to benefit from the potential facilities of their mobile devices e.g. stable access to internet, working Labs, ... etc.
- Reconsideration of the traditional furniture and management of the FL classrooms
- Reducing the redundant number of students in the language classes
- Exhibiting QR codes of the university or faculty sites, courses and lectures to be easily accessed by students and teachers by their mobile scanners
- As there is a site for the university, devising apps to comply with the fit characteristics of mobile technologies would assure an operative access, knowing that the display of websites is meant for a larger size of screen as that of computers.
- Encouraging the use of mobile devices the across different spheres of the faculties as in the classes and under the supervision of their teacher which goes in accordance with BYOD strategy.

- Developing a module associated with TELL for the students to be made acquainted with what and how educational technologies can serve their learning
- Organise regular trainings for novice students to university with their teachers on the appropriate uses of the obtainable technologies in the faculty institutions
- Devising a writing centre for the different level of learners where they can interact to strengthen students' autonomy and self-learning
- Inspecting a serious compliance of those measures that are to be executed along the entire higher education institutions

For course designers and teachers,

- Granting permission to students use of their mobile devices during the class time and demonstrating them the most useful resources they can access
- Taking into account the amount of knowledge to be conveyed in an adequate interval of time
- Written expression is an essential subject that needs a continuous review of students' performances
- Assigning the possibility of contact through email, phone or any social media and allocating a regular accepted timing for out-of-class subject-related urges
- Providing immediate feedback the mostly possible and help learners identify the types of errors by themselves to avoid their reliance on spoon-feeding.
- Allowing students to switch their works and insist on editing each other's errors

### **5.3 Implications for Further Research**

This research can be raw resource for longitudinal and ethnographic research for its practical outcomes that open new challenges to deepen the understanding of related factors. It

is found through this study that exploring students' behaviours inside and outside the classroom could encourage their interest and raise awareness of their study concepts.

However, any research could be manipulated according to particular set of an on-going subject and methodology; thus, the present research might be open to other sort of methodologies.

From quasi to true experimental design can partake if some conditions are well dominated, especially when dealing with humanities. Moreover, working theories and frameworks are found considerably efficient in approaching sophisticated behaviours that occur at the level of the language instruction. The framework of the present work could demonstrate a significant practical theory basis for policymakers and teachers in the first place which then affirms a positive influence on students' educational demeanours.

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Appendix A

Preliminary Questionnaire with Teachers

Dear teachers and colleagues,

This questionnaire partakes in investigating prospects of portable ICTs in your teaching of EFL. Particular focus, hereby, spotlights stance and challenges of integrating smart-mobile technologies in your classes.

**Personal Portfolio** \_\_\_\_\_

1- **Age interval:** 23-29                      30-39                      40-49                      50-60                      other.....

2- **Gender:**                      Male    Female

3- **Experience in teaching (in years)**  
[0-3]                      [4-7]    [8-10]                      [11-15]                      more.....

4- **Last study level accomplished as of today (circle!)**  
Master's                      Magister/Ph.D. Candidate                      Doctorate                      other.....

5- **What module (s) you teach or ever taught? Tick all that applies? (Circle!)**  
Civilization                      literature    phonetics                      TTU                      Grammar  
Oral expression                      written expression                      Linguistics                      Social & human sciences

**Overview on ICT Integration** \_\_\_\_\_

6- **How important is integrating ICT in EFL classes?**  
.....  
.....

7- **Have you ever had any training on incorporating ICTs in teaching?**  
Yes    No  
If yes, what type of training?  
.....  
.....





**MALL: Perceptions and Attitudes** \_\_\_\_\_

**Tick as applies with each item! 1, Strongly. Agree. 2, Agree. 3, Neutral. 4, Disagree 5,**

**Strongly disagree**

| <b>Items</b>  | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b> | <b>5</b> |
|---|----------|----------|----------|----------|----------|
| I use my portable device as much as other resources (books, PC, etc) for instructional purposes                       |          |          |          |          |          |
| I am aware of the opportunities that mobiles offer.   |          |          |          |          |          |
| I can provide help for my students to use their mobile devices.   |          |          |          |          |          |
| I am able to use portable devices and related technologies efficiently in my classes.                                 |          |          |          |          |          |
| It is easier to handle the different learning preferences of my students using M-technologies.                        |          |          |          |          |          |
| Mobile-supported teaching makes learning more effective.  |          |          |          |          |          |
| The use of mobile technologies increases students' interest to learn.   |          |          |          |          |          |
| The use of mobile technologies increases the quality of courses.  |          |          |          |          |          |
| The use of mobile technologies makes it easier to prepare course materials (assignments, handouts, assessments etc.). |          |          |          |          |          |
| Using mobiles makes it easier for me to reach instructional resources.  |          |          |          |          |          |

**Any further remarks are welcome!**

.....

.....

.....

**Thank you ☺ ☺**

## Appendix B

### Preliminary Focus Group Interview with Students

#### **Focus Group Interview with Students**

Reporter:

Number of Interviewees:

Date:

#### **English Language and Mobile Learning**

- 1- Among the four language skills which one(s) you practice more in English? Listening, Speaking, Reading and Writing
- 2- Among those skills, what do you think are the two most challenging or difficult in English?
- 3- Inside or out of the class settings, do you use any technology tool when learning? What are they?
- 4- Do your teachers allow you to use your mobile devices inside the classroom?
- 5- Which aspect(s) of language you mainly use your mobile for? Grammar, Spelling of words (Orthography or Pronunciation), Vocabulary, Punctuation, Capitalization
- 6- Do you think there is a stable internet access in the department where you study?
- 7- According to you, how important is using mobiles inside or outside the classroom?

#### **Feedback and Students' Writing in English**

- 8- How often do you write in English when you are not required to?
- 9- Regardless of the module, how often do teachers give you written assignments?
- 10- In your opinion, why is it difficult for students to write in English?
- 11- During the classes, do all your teachers provide a one-to-one revision of your written tasks?
- 12- Do your teachers provide you with their contacts for any study related needs (Email, phone number, Facebook/Messenger...)?
- 13- What, do you think, are the reasons behind lacking teachers' feedback in your writing classes?

## Appendix C

### Preliminary Classroom Observation

|  |         |                     |               |
|--|---------|---------------------|---------------|
| Observer:  | Lesson: | Number of Students: | Class Timing: |
| <b>General Features Related to Classroom Management</b>  |         | <b>Comments</b>     |               |
| Seating arrangement  |         |                     |               |
| Technology used by students  |         |                     |               |
| Technology used by the Teacher   |         |                     |               |
| Teacher-Student Interaction  |         |                     |               |
| Student-Student Interaction  |         |                     |               |
| Time Adequacy  |         |                     |               |
| <b>Features of teacher's Corrective Treatment of Students' Errors</b>  |         |                     | <b>Ratio</b>  |
| Teacher (T) ignores Student's (S) ERROR, goes on to other topic, or shows ACCEPTANCE* of content.  |         |                     |               |
| T interrupts S utterance (ut.) following ERROR, or before S has completed. OR T waits for S to complete ut. before correcting. (Usually not coded, for INTERRUPT is 'marked'). |         |                     |               |
| Simple approving or accepting word (usually as sign of reception of ut.) but T may immediately correct a linguistic ERROR, OR T shows rejection of part or all of S ut.        |         |                     |               |
| T provides the correct answer when S has been unable or when no response is offered.   |         |                     |               |
| T uses stress, iterative repetition, or question intonation, to mark area or fact of incorrectness.  |         |                     |               |
| T repeats S ut. with no change of ERROR, or omission of ERROR.   |         |                     |               |
| T repeats S ut. with no change of ERROR, but EMPH. locates or indicates fact of ERROR.   |         |                     |               |
| T adds EMPH. to stress location of ERROR and its correct formulation.  |         |                     |               |
| T provides information on the cause or type of ERROR.  |         |                     |               |
| T requests S to repeat ut., with intent to have S self-correct.  |         |                     |               |
| T reaction provides S with isolation of type of ERROR or of the nature of its immediate correction, without providing correction.  |         |                     |               |
| Asking for new response with CLUES where T alters original question syntactically, but not semantically.   |         |                     |               |
| T asks another S or several, or class to provide correction.   |         |                     |               |
| T explains why response is correct.  |         |                     |               |
| T returns to original error-maker for another attempt, after TRANSFER. A type of VERIFICATION.   |         |                     |               |
| T attempts to ensure understanding of correction; a new elicitation is implicit or made more explicit.   |         |                     |               |
| At any stage in the exchange, T may drop correction of the ERROR, though usually not after explicit NEGATION, EMPH., etc.  |         |                     |               |

## Appendix D

### Pre-Subject-Questionnaire with Students

Dear students,

The research inquiry at hand is continuity to a prior study on Students and teachers perceptions and attitudes towards using smart mobile devices inside and outside the EFL classroom. The scope of this research is about the usefulness of Mobile-Assisted Language Learning (MALL) in revising your writing. MALL is the use of mobile devices (Smartphones, Tablets, and any smart portable devices) in the language classroom. Accordingly, your answers are to respect the instructions that precede each question or set of statements.

Dear participants, you are kindly asked to HONESTLY and FRANKLY respond to this Form. Hence, the researcher ensures your full anonymity and confirms that confidentiality of your contributions is kept, and derived findings are exclusively used by the researcher himself and are by no means shared or made public.

#### **Personal Portfolio** \_\_\_\_\_

1. Age: .....

2. Gender:                      **Male**                      **Female**

3. What was your average in the baccalaureate exam? .....

4. How can you rate your level of English?

**Beginner**                      **Intermediate**                      **Upper intermediate**                      **Advanced**

5. Do you have a smart portable device?

6. Is it connected to the internet?

#### **Positioning the Writing Skills** \_\_\_\_\_

7. On a five-scale (from Very confident to very unconfident), how confident are you when writing in English?                      **1**                      **2**                      **3**                      **4**                      **5**

8. What do you think is the most challenging in sentence writing

- Spelling of the words (orthography) and vocabulary
- Grammar (subject-verb agreement, tenses, regular/irregular verbs ...etc.)
- Structuring and developing ideas (Types of clauses, Sentences, phrases, linking words...etc.)
- Mechanics (Punctuation, capitalization)

### **Editing and Feedback in Writing**

---

9. How many times do you generally draft your writing?

**Once**

**Twice**

**Three times**

**More**

10. With whom you usually revise your writing before handing the last version?

**I do it myself.**

**I ask a classmate to revise it.**

**I ask teacher's assistance.**

**Others....**

11. When asking the teachers' feedback for your writing,

- I get all I need to edit.
- I pretend that I got the necessary feedback then check for other resources.
- I do not even find him/her available when needed.
- I do not ask teachers for revision.

### **Self-Editing in Writing**

---

Decide your stand from the following statements by ticking the right option.

**(Strongly agree/ Agree/ Uncertain/ Disagree/ strongly disagree)**

12. It is embarrassing when the teacher knows my errors in writing before handing the last version.

13. It is embarrassing when the teacher shows my errors to my classmates.

14. I usually revise my writing and edit it before giving it to the teacher.

15. Some of my teachers demotivate me with their negative remarks when I make errors.

16. I give much importance to my writing to avoid the negative attitude of my teachers.

17. My classmates laugh at one another when making mistakes/errors.

18. I can edit my errors without teachers' assistance.
19. I feel more satisfied when I correct my written works by myself.
20. Teachers are never satisfied of my writing.
21. I can properly spell words in my writing.
22. I can adhere a proper punctuation in my writing.
23. I am aware of the capitalization rules while writing.
24. I can identify the parts of speech in my sentences.
25. I have no problem with grammar when writing.
26. I can properly write one sentence with two or more ideas.
27. I can identify the type of my sentences (simple, complex, compound, and compound-complex).

### **Mobile-Based Editing**

---

Decide your stand from the following statements by ticking the right option.

**(Strongly agree/ Agree/ Uncertain/ Disagree/ Strongly disagree)**

28. It is less stressful and less embarrassing to check my errors before handing them to the teacher.
29. I am aware of the resources/aides that my mobile provide to revise my writing.
30. I use my mobile applications to check the grammar and sentences in my draft before giving them to the teacher.
31. Checking my errors is easy to practice on my mobile device.
32. The practice on mobile apps, sites, blogs...etc. can help me notice errors in my own writing and those of my peers.

**Thank you so much for your assistance :)**

## Appendices D

### Analysis of Students' Writing test

#### Sample Analysis of Students' Writing Test

##### Student X

|  | Baseline Period 01<br>(A) |           |           |                                       | Treatment Period 01<br>(B) |           |           |           | Baseline Period 02<br>(A)             |           |           |           | Treatment Period 02<br>(B)            |           |           |           | Performance<br>Appraisal<br>(+/-) |           |                                       |
|--|---------------------------|-----------|-----------|---------------------------------------|----------------------------|-----------|-----------|-----------|---------------------------------------|-----------|-----------|-----------|---------------------------------------|-----------|-----------|-----------|-----------------------------------|-----------|---------------------------------------|
|  | Test<br>1                 | Test<br>2 | Test<br>3 | Mean<br>$\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | Mean<br>$\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1 | Test<br>2 | Test<br>3 | Mean<br>$\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1 | Test<br>2 | Test<br>3 |                                   | Test<br>4 | Mean<br>$\bar{x} = \frac{\sum 3T}{3}$ |
| Criteria                                 |                           |           |           |                                       |                            |           |           |           |                                       |           |           |           |                                       |           |           |           |                                   |           |                                       |
| Content<br>(Cont.) /20                   |                           |           |           |                                       |                            |           |           |           |                                       |           |           |           |                                       |           |           |           |                                   |           |                                       |
| Organisation<br>(Org.) /15               |                           |           |           |                                       |                            |           |           |           |                                       |           |           |           |                                       |           |           |           |                                   |           |                                       |
| Vocabulary<br>(Voc.) /15                 |                           |           |           |                                       |                            |           |           |           |                                       |           |           |           |                                       |           |           |           |                                   |           |                                       |
| Language Use<br>(LU) /20                 |                           |           |           |                                       |                            |           |           |           |                                       |           |           |           |                                       |           |           |           |                                   |           |                                       |
| Spelling<br>(Orthography)<br>(Orth.) /15 |                           |           |           |                                       |                            |           |           |           |                                       |           |           |           |                                       |           |           |           |                                   |           |                                       |
| Mechanics<br>(Mech.) /15                 |                           |           |           |                                       |                            |           |           |           |                                       |           |           |           |                                       |           |           |           |                                   |           |                                       |
| Total Mark<br>/100                       |                           |           |           |                                       |                            |           |           |           |                                       |           |           |           |                                       |           |           |           |                                   |           |                                       |

## Analysis of Students' Writing Test

### Student 1

| Tests<br>Criteria                        | Baseline Period 01<br>(A) |           |           | Mean                          | Treatment Period 01<br>(B) |           |           |           | Mean                          | Baseline Period 02<br>(A) |           |           | Mean                          | Treatment Period 02<br>(B) |           |           |           | Mean                          | Performance<br>Appraisal<br>(+/-) |
|--|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|-----------------------------------|
|  | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ |                                   |
| Content<br>(Cont.) /20                   | 9                         | 11        | 10        | 10                            | 11                         | 12        | 12        | 13        | 12                            | 12                        | 11        | 10        | 11                            | 11                         | 12        | 12        | 13        | 12                            | +                                 |
| Organisation<br>(Org.) /15               | 8                         | 9         | 10        | 9                             | 10                         | 11        | 11        | 12        | 11                            | 12                        | 10        | 11        | 11                            | 11                         | 12        | 13        | 12        | 12                            | +                                 |
| Vocabulary<br>(Voc.) /15                 | 10                        | 9         | 11        | 10                            | 9                          | 10        | 10        | 11        | 10                            | 9                         | 10        | 11        | 10                            | 10                         | 12        | 13        | 13        | 12                            | +                                 |
| Language Use<br>(LU) /20                 | 8                         | 7         | 9         | 8                             | 9                          | 10        | 11        | 10        | 10                            | 9                         | 11        | 10        | 10                            | 10                         | 11        | 11        | 12        | 11                            | +                                 |
| Spelling<br>(Orthography)<br>(Orth.) /15 | 8                         | 10        | 9         | 9                             | 10                         | 10        | 12        | 12        | 11                            | 11                        | 11        | 11        | 11                            | 11                         | 12        | 12        | 13        | 12                            | +                                 |
| Mechanics<br>(Mech.) /15                 | 7                         | 8         | 9         | 8                             | 10                         | 11        | 12        | 11        | 11                            | 12                        | 10        | 11        | 11                            | 10                         | 12        | 13        | 13        | 12                            | +                                 |
| Total Mark<br>/100                       | 50                        | 54        | 58        | 54                            | 59                         | 64        | 68        | 69        | 65                            | 65                        | 63        | 64        | 64                            | 64                         | 71        | 74        | 76        | 71                            | +                                 |

## Sample Analysis of Students' Writing Test

### Student 2

| Criteria \ Tests                         | Baseline Period 01<br>(A) |           |           | Mean                          | Treatment Period 01<br>(B) |           |           |           | Mean                          | Baseline Period 02<br>(A) |           |           | Mean                          | Treatment Period 02<br>(B) |           |           |           | Mean                          | Performance<br>Appraisal<br>(+/-) |
|--|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|-----------------------------------|
|  | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ |                                   |
| Content<br>(Cont.) /20                   | 9                         | 9         | 12        | 10                            | 11                         | 10        | 12        | 11        | 11                            | 10                        | 12        | 14        | 12                            | 12                         | 11        | 13        | 12        | 12                            | +                                 |
| Organisation<br>(Org.) /15               | 8                         | 10        | 12        | 10                            | 9                          | 12        | 11        | 12        | 11                            | 8                         | 10        | 15        | 11                            | 10                         | 12        | 12        | 14        | 12                            | +                                 |
| Vocabulary<br>(Voc.) /15                 | 9                         | 10        | 11        | 10                            | 10                         | 11        | 12        | 11        | 11                            | 10                        | 11        | 12        | 11                            | 11                         | 12        | 13        | 12        | 12                            | +                                 |
| Language Use<br>(LU) /20                 | 7                         | 8         | 9         | 8                             | 8                          | 9         | 11        | 12        | 10                            | 9                         | 11        | 13        | 11                            | 9                          | 14        | 14        | 15        | 13                            | +                                 |
| Spelling<br>(Orthography)<br>(Orth.) /15 | 5                         | 9         | 10        | 8                             | 9                          | 9         | 10        | 12        | 10                            | 11                        | 13        | 12        | 12                            | 11                         | 13        | 12        | 12        | 12                            | +                                 |
| Mechanics<br>(Mech.) /15                 | 5                         | 6         | 7         | 6                             | 7                          | 10        | 10        | 13        | 10                            | 8                         | 10        | 12        | 10                            | 8                          | 14        | 12        | 14        | 12                            | +                                 |
| Total Mark<br>/100                       | 43                        | 52        | 61        | 52                            | 54                         | 61        | 66        | 71        | 63                            | 56                        | 67        | 78        | 67                            | 61                         | 76        | 76        | 79        | 73                            | +                                 |

## Sample Analysis of Students' Writing Test

### Student 3

| Criteria \ Tests                         | Baseline Period 01<br>(A) |           |           | Mean                          | Treatment Period 01<br>(B) |           |           |           | Mean                          | Baseline Period 02<br>(A) |           |           | Mean                          | Treatment Period 02<br>(B) |           |           |           | Mean                          | Performance<br>Appraisal<br>(+/-) |
|--|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|-----------------------------------|
|  | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ |                                   |
| Content<br>(Cont.) /20                   | 7                         | 11        | 9         | 9                             | 10                         | 11        | 12        | 15        | 12                            | 10                        | 11        | 12        | 11                            | 9                          | 11        | 12        | 12        | 11                            | +                                 |
| Organisation<br>(Org.) /15               | 8                         | 7         | 9         | 8                             | 9                          | 10        | 10        | 11        | 10                            | 8                         | 11        | 14        | 11                            | 8                          | 10        | 11        | 15        | 11                            | +                                 |
| Vocabulary<br>(Voc.) /15                 | 8                         | 9         | 13        | 10                            | 8                          | 9         | 11        | 12        | 10                            | 9                         | 12        | 12        | 11                            | 10                         | 12        | 13        | 13        | 12                            | +                                 |
| Language Use<br>(LU) /20                 | 6                         | 9         | 12        | 9                             | 10                         | 11        | 12        | 11        | 11                            | 7                         | 11        | 15        | 11                            | 10                         | 11        | 12        | 15        | 12                            | +                                 |
| Spelling<br>(Orthography)<br>(Orth.) /15 | 5                         | 7         | 9         | 7                             | 7                          | 9         | 10        | 14        | 10                            | 11                        | 10        | 12        | 11                            | 11                         | 12        | 12        | 13        | 12                            | +                                 |
| Mechanics<br>(Mech.) /15                 | 6                         | 7         | 8         | 7                             | 9                          | 10        | 11        | 10        | 10                            | 9                         | 11        | 13        | 11                            | 6                          | 11        | 12        | 15        | 11                            | +                                 |
| Total Mark<br>/100                       | 40                        | 50        | 60        | 50                            | 53                         | 60        | 66        | 73        | 63                            | 54                        | 66        | 78        | 66                            | 54                         | 67        | 72        | 83        | 69                            | +                                 |

## Sample Analysis of Students' Writing Test

### Student 4

|  | Baseline Period 01<br>(A) |           |           | Mean                          | Treatment Period 01<br>(B) |           |           |           | Mean                          | Baseline Period 02<br>(A) |           |           | Mean                          | Treatment Period 02<br>(B) |           |           |           | Mean                          |                                   |
|--|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|-----------------------------------|
| Tests<br>Criteria                        | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ | Performance<br>Appraisal<br>(+/-) |
| Content<br>(Cont.) /20                   | 5                         | 10        | 15        | 10                            | 10                         | 11        | 13        | 14        | 12                            | 11                        | 12        | 13        | 12                            | 11                         | 12        | 14        | 15        | 13                            | +                                 |
| Organisation<br>(Org.) /15               | 7                         | 10        | 13        | 10                            | 9                          | 10        | 11        | 14        | 11                            | 8                         | 12        | 10        | 10                            | 11                         | 12        | 13        | 12        | 12                            | +                                 |
| Vocabulary<br>(Voc.) /15                 | 8                         | 12        | 10        | 10                            | 10                         | 11        | 11        | 12        | 11                            | 10                        | 13        | 13        | 12                            | 10                         | 11        | 12        | 11        | 11                            | +                                 |
| Language Use<br>(LU) /20                 | 4                         | 8         | 12        | 8                             | 8                          | 9         | 11        | 12        | 10                            | 9                         | 10        | 11        | 10                            | 11                         | 12        | 14        | 15        | 13                            | +                                 |
| Spelling<br>(Orthography)<br>(Orth.) /15 | 7                         | 9         | 11        | 9                             | 10                         | 10        | 11        | 13        | 11                            | 10                        | 11        | 12        | 11                            | 10                         | 13        | 14        | 15        | 13                            | +                                 |
| Mechanics<br>(Mech.) /15                 | 8                         | 9         | 10        | 9                             | 7                          | 12        | 12        | 13        | 11                            | 9                         | 12        | 13        | 11                            | 9                          | 13        | 14        | 16        | 13                            | +                                 |
| Total Mark<br>/100                       | 39                        | 58        | 71        | 56                            | 54                         | 63        | 69        | 78        | 66                            | 57                        | 70        | 60        | 56                            | 62                         | 73        | 81        | 84        | 75                            | +                                 |

## Sample Analysis of Students' Writing Test

### Student 5

| Criteria \ Tests                         | Baseline Period 01<br>(A) |           |           | Mean                          | Treatment Period 01<br>(B) |           |           |           | Mean                          | Baseline Period 02<br>(A) |           |           | Mean                          | Treatment Period 02<br>(B) |           |           |           | Mean                          | Performance<br>Appraisal<br>(+/-) |
|--|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|-----------------------------------|
|  | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ |                                   |
| Content<br>(Cont.) /20                   | 7                         | 8         | 9         | 8                             | 9                          | 10        | 11        | 14        | 11                            | 10                        | 11        | 12        | 11                            | 11                         | 12        | 12        | 13        | 12                            | +                                 |
| Organisation<br>(Org.) /15               | 8                         | 9         | 10        | 9                             | 10                         | 11        | 11        | 12        | 11                            | 8                         | 12        | 13        | 11                            | 9                          | 10        | 11        | 14        | 11                            | +                                 |
| Vocabulary<br>(Voc.) /15                 | 9                         | 10        | 11        | 10                            | 7                          | 11        | 12        | 14        | 11                            | 9                         | 10        | 14        | 11                            | 8                          | 12        | 13        | 15        | 12                            | +                                 |
| Language Use<br>(LU) /20                 | 6                         | 9         | 9         | 8                             | 8                          | 10        | 10        | 12        | 10                            | 5                         | 11        | 14        | 10                            | 7                          | 11        | 12        | 14        | 11                            | +                                 |
| Spelling<br>(Orthography)<br>(Orth.) /15 | 7                         | 6         | 11        | 8                             | 10                         | 9         | 11        | 14        | 11                            | 11                        | 12        | 13        | 12                            | 10                         | 11        | 13        | 14        | 12                            | +                                 |
| Mechanics<br>(Mech.) /15                 | 5                         | 11        | 10        | 9                             | 6                          | 9         | 11        | 14        | 10                            | 7                         | 11        | 15        | 11                            | 6                          | 12        | 14        | 16        | 12                            | +                                 |
| Total Mark<br>/100                       | 42                        | 53        | 60        | 52                            | 50                         | 60        | 66        | 80        | 64                            | 50                        | 67        | 81        | 66                            | 51                         | 68        | 75        | 86        | 70                            | +                                 |

## Sample Analysis of Students' Writing Test

### Student 6

| Criteria \ Tests                         | Baseline Period 01<br>(A) |           |           | Mean                          | Treatment Period 01<br>(B) |           |           |           | Mean                          | Baseline Period 02<br>(A) |           |           | Mean                          | Treatment Period 02<br>(B) |           |           |           | Mean                          | Performance<br>Appraisal<br>(+/-) |
|--|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|-----------------------------------|
|  | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ |                                   |
| Content<br>(Cont.) /20                   | 8                         | 9         | 10        | 9                             | 9                          | 10        | 10        | 11        | 10                            | 11                        | 12        | 13        | 12                            | 10                         | 11        | 13        | 13        | 12                            | +                                 |
| Organisation<br>(Org.) /15               | 7                         | 8         | 9         | 8                             | 7                          | 9         | 11        | 13        | 10                            | 8                         | 11        | 14        | 11                            | 9                          | 10        | 12        | 13        | 11                            | +                                 |
| Vocabulary<br>(Voc.) /15                 | 9                         | 10        | 11        | 10                            | 8                          | 10        | 10        | 12        | 10                            | 7                         | 9         | 17        | 11                            | 7                          | 9         | 13        | 14        | 11                            | +                                 |
| Language Use<br>(LU) /20                 | 6                         | 8         | 10        | 8                             | 10                         | 9         | 10        | 11        | 10                            | 9                         | 10        | 11        | 10                            | 8                          | 11        | 11        | 13        | 11                            | +                                 |
| Spelling<br>(Orthography)<br>(Orth.) /15 | 7                         | 9         | 11        | 9                             | 6                          | 9         | 11        | 14        | 10                            | 8                         | 9         | 13        | 10                            | 6                          | 12        | 12        | 12        | 12                            | +                                 |
| Mechanics<br>(Mech.) /15                 | 5                         | 6         | 7         | 6                             | 7                          | 9         | 11        | 13        | 10                            | 9                         | 11        | 13        | 11                            | 9                          | 11        | 13        | 15        | 12                            | +                                 |
| Total Mark<br>/100                       | 42                        | 50        | 58        | 50                            | 47                         | 56        | 63        | 74        | 60                            | 52                        | 62        | 81        | 65                            | 49                         | 64        | 74        | 80        | 69                            | +                                 |

## Sample Analysis of Students' Writing Test

### Student 7

| Tests<br>Criteria                        | Baseline Period 01<br>(A) |           |           | Mean                          | Treatment Period 01<br>(B) |           |           |           | Mean                          | Baseline Period 02<br>(A) |           |           | Mean                          | Treatment Period 02<br>(B) |           |           |           | Mean                          | Performance<br>Appraisal<br>(+/-) |
|--|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|-----------------------------------|
|  | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ |                                   |
| Content<br>(Cont.) /20                   | 8                         | 9         | 10        | 9                             | 10                         | 11        | 11        | 12        | 11                            | 9                         | 10        | 15        | 11                            | 9                          | 10        | 12        | 13        | 11                            | +                                 |
| Organisation<br>(Org.) /15               | 6                         | 8         | 16        | 10                            | 5                          | 9         | 11        | 15        | 10                            | 8                         | 9         | 13        | 10                            | 8                          | 7         | 14        | 15        | 11                            | +                                 |
| Vocabulary<br>(Voc.) /15                 | 7                         | 9         | 11        | 9                             | 6                          | 7         | 13        | 14        | 10                            | 6                         | 12        | 18        | 12                            | 7                          | 10        | 14        | 17        | 12                            | +                                 |
| Language Use<br>(LU) /20                 | 8                         | 6         | 12        | 9                             | 8                          | 7         | 14        | 15        | 11                            | 7                         | 9         | 17        | 11                            | 9                          | 11        | 13        | 15        | 12                            | +                                 |
| Spelling<br>(Orthography)<br>(Orth.) /15 | 7                         | 8         | 12        | 9                             | 9                          | 9         | 11        | 14        | 10                            | 5                         | 10        | 15        | 10                            | 8                          | 10        | 14        | 16        | 12                            | +                                 |
| Mechanics<br>(Mech.) /15                 | 3                         | 5         | 7         | 5                             | 6                          | 8         | 12        | 14        | 10                            | 10                        | 11        | 12        | 11                            | 10                         | 11        | 13        | 14        | 12                            | +                                 |
| Total Mark<br>/100                       | 39                        | 45        | 68        | 51                            | 44                         | 51        | 72        | 84        | 62                            | 45                        | 61        | 90        | 65                            | 51                         | 59        | 80        | 90        | 70                            | +                                 |

## Sample Analysis of Students' Writing Test

### Student 8

| Criteria \ Tests                         | Baseline Period 01<br>(A) |           |           | Mean                          | Treatment Period 01<br>(B) |           |           |           | Mean                          | Baseline Period 02<br>(A) |           |           | Mean                          | Treatment Period 02<br>(B) |           |           |           | Mean                          | Performance<br>Appraisal<br>(+/-) |
|--|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|-----------------------------------|
|  | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ |                                   |
| Content<br>(Cont.) /20                   | 6                         | 9         | 12        | 9                             | 9                          | 10        | 11        | 10        | 10                            | 6                         | 8         | 16        | 10                            | 9                          | 10        | 12        | 13        | 11                            | +                                 |
| Organisation<br>(Org.) /15               | 5                         | 7         | 12        | 8                             | 8                          | 9         | 10        | 12        | 10                            | 8                         | 11        | 13        | 11                            | 8                          | 7         | 14        | 15        | 11                            | +                                 |
| Vocabulary<br>(Voc.) /15                 | 8                         | 9         | 13        | 10                            | 7                          | 9         | 11        | 13        | 10                            | 9                         | 10        | 14        | 11                            | 9                          | 11        | 13        | 15        | 12                            | +                                 |
| Language Use<br>(LU) /20                 | 3                         | 8         | 13        | 8                             | 6                          | 7         | 13        | 14        | 10                            | 5                         | 10        | 15        | 10                            | 9                          | 10        | 12        | 13        | 11                            | +                                 |
| Spelling<br>(Orthography)<br>(Orth.) /15 | 4                         | 7         | 10        | 7                             | 8                          | 9         | 6         | 13        | 9                             | 7                         | 9         | 14        | 10                            | 6                          | 12        | 12        | 18        | 12                            | +                                 |
| Mechanics<br>(Mech.) /15                 | 5                         | 6         | 7         | 6                             | 6                          | 8         | 12        | 14        | 10                            | 10                        | 11        | 12        | 11                            | 7                          | 10        | 14        | 17        | 12                            | +                                 |
| Total Mark<br>/100                       | 31                        | 46        | 67        | 48                            | 44                         | 52        | 63        | 76        | 59                            | 45                        | 59        | 84        | 63                            | 48                         | 60        | 77        | 91        | 69                            | +                                 |

## Sample Analysis of Students' Writing Test

### Student 9

|  | Baseline Period 01<br>(A) |           |           | Mean                          | Treatment Period 01<br>(B) |           |           |           | Mean                          | Baseline Period 02<br>(A) |           |           | Mean                          | Treatment Period 02<br>(B) |           |           |           | Mean                          |                                   |
|--|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|-----------------------------------|
|  | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ |                                   |
| Criteria \ Tests                         |                           |           |           |                               |                            |           |           |           |                               |                           |           |           |                               |                            |           |           |           |                               | Performance<br>Appraisal<br>(+/-) |
| Content<br>(Cont.) /20                   | 5                         | 9         | 13        | 9                             | 6                          | 9         | 11        | 14        | 10                            | 8                         | 11        | 13        | 11                            | 10                         | 11        | 13        | 14        | 12                            | +                                 |
| Organisation<br>(Org.) /15               | 7                         | 8         | 12        | 9                             | 8                          | 9         | 11        | 12        | 10                            | 9                         | 10        | 11        | 10                            | 6                          | 12        | 12        | 18        | 12                            | +                                 |
| Vocabulary<br>(Voc.) /15                 | 8                         | 9         | 10        | 9                             | 6                          | 7         | 13        | 14        | 10.                           | 7                         | 9         | 14        | 10                            | 7                          | 10        | 14        | 17        | 12                            | +                                 |
| Language Use<br>(LU) /20                 | 7                         | 8         | 9         | 8                             | 6                          | 8         | 9         | 13        | 9                             | 10                        | 11        | 12        | 11                            | 10                         | 11        | 12        | 11        | 11                            | +                                 |
| Spelling<br>(Orthography)<br>(Orth.) /15 | 6                         | 8         | 10        | 8                             | 9                          | 10        | 11        | 10        | 10                            | 7                         | 10        | 16        | 11                            | 10                         | 12        | 14        | 16        | 13                            | +                                 |
| Mechanics<br>(Mech.) /15                 | 3                         | 5         | 7         | 5                             | 7                          | 8         | 9         | 12        | 9                             | 7                         | 9         | 14        | 10                            | 8                          | 7         | 14        | 15        | 11                            | +                                 |
| Total Mark<br>/100                       | 36                        | 47        | 61        | 48                            | 42                         | 51        | 64        | 75        | 28                            | 48                        | 60        | 80        | 63                            | 51                         | 63        | 79        | 91        | 71                            | +                                 |

## Sample Analysis of Students' Writing Test

### Student 10

| Tests<br>Criteria                        | Baseline Period 01<br>(A) |           |           | Mean                          | Treatment Period 01<br>(B) |           |           |           | Mean                          | Baseline Period 02<br>(A) |           |           | Mean                          | Treatment Period 02<br>(B) |           |           |           | Mean                          | Performance<br>Appraisal<br>(+/-) |
|--|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|-----------------------------------|
|  | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ |                                   |
| Content<br>(Cont.) /20                   | 8                         | 9         | 10        | 9                             | 7                          | 8         | 16        | 17        | 12                            | 8                         | 10        | 18        | 12                            | 8                          | 9         | 15        | 16        | 12                            | +                                 |
| Organisation<br>(Org.) /15               | 7                         | 9         | 11        | 9                             | 9                          | 10        | 12        | 13        | 11                            | 7                         | 9         | 17        | 11                            | 7                          | 10        | 14        | 17        | 12                            | +                                 |
| Vocabulary<br>(Voc.) /15                 | 5                         | 9         | 13        | 9                             | 6                          | 8         | 12        | 14        | 10                            | 8                         | 10        | 15        | 11                            | 10                         | 11        | 12        | 11        | 11                            | +                                 |
| Language Use<br>(LU) /20                 | 7                         | 8         | 12        | 9                             | 9                          | 10        | 11        | 10        | 10                            | 9                         | 11        | 13        | 11                            | 10                         | 11        | 13        | 14        | 12                            | +                                 |
| Spelling<br>(Orthography)<br>(Orth.) /15 | 6                         | 9         | 9         | 8                             | 6                          | 7         | 13        | 14        | 10                            | 8                         | 11        | 14        | 11                            | 7                          | 8         | 16        | 17        | 12                            | +                                 |
| Mechanics<br>(Mech.) /15                 | 6                         | 7         | 8         | 7                             | 9                          | 11        | 13        | 15        | 12                            | 6                         | 12        | 18        | 12                            | 6                          | 12        | 12        | 18        | 12                            | +                                 |
| Total Mark<br>/100                       | 39                        | 51        | 63        | 51                            | 46                         | 54        | 77        | 83        | 65                            | 46                        | 63        | 95        | 68                            | 48                         | 61        | 82        | 93        | 71                            | +                                 |

## Sample Analysis of Students' Writing Test

### Student 11

| Criteria \ Tests                         | Baseline Period 01<br>(A) |           |           | Mean                          | Treatment Period 01<br>(B) |           |           |           | Mean                          | Baseline Period 02<br>(A) |           |           | Mean                          | Treatment Period 02<br>(B) |           |           |           | Mean                          | Performance<br>Appraisal<br>(+/-) |
|--|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|-----------------------------------|
|  | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ |                                   |
| Content<br>(Cont.) /20                   | 8                         | 11        | 13        | 11                            | 9                          | 11        | 13        | 15        | 12                            | 10                        | 12        | 14        | 12                            | 9                          | 10        | 12        | 13        | 11                            | +                                 |
| Organisation<br>(Org.) /15               | 7                         | 10        | 13        | 10                            | 6                          | 7         | 13        | 14        | 10                            | 9                         | 10        | 11        | 10                            | 6                          | 10        | 12        | 16        | 11                            | +                                 |
| Vocabulary<br>(Voc.) /15                 | 6                         | 8         | 16        | 10                            | 8                          | 11        | 13        | 11        | 11                            | 6                         | 12        | 18        | 12                            | 10                         | 11        | 14        | 15        | 12                            | +                                 |
| Language Use<br>(LU) /20                 | 7                         | 10        | 13        | 10                            | 7                          | 9         | 11        | 13        | 10                            | 7                         | 9         | 14        | 10                            | 8                          | 10        | 14        | 16        | 12                            | +                                 |
| Spelling<br>(Orthography)<br>(Orth.) /15 | 6                         | 8         | 13        | 9                             | 5                          | 6         | 14        | 15        | 10                            | 8                         | 9         | 13        | 10                            | 9                          | 10        | 12        | 13        | 11                            | +                                 |
| Mechanics<br>(Mech.) /15                 | 5                         | 9         | 13        | 9                             | 8                          | 7         | 14        | 15        | 11                            | 7                         | 10        | 13        | 10                            | 6                          | 12        | 12        | 18        | 12                            | +                                 |
| Total Mark<br>/100                       | 39                        | 56        | 81        | 59                            | 43                         | 51        | 78        | 83        | 64                            | 47                        | 62        | 83        | 64                            | 48                         | 63        | 76        | 91        | 69                            | +                                 |

### Sample Analysis of Students' Writing Test

#### Student 12

| Criteria \ Tests                         | Baseline Period 01<br>(A) |           |           | Mean                          | Treatment Period 01<br>(B) |           |           |           | Mean                          | Baseline Period 02<br>(A) |           |           | Mean                          | Treatment Period 02<br>(B) |           |           |           | Mean                          | Performance<br>Appraisal<br>(+/-) |
|--|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|-----------------------------------|
|  | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ |                                   |
| Content<br>(Cont.) /20                   | 8                         | 11        | 14        | 11                            | 10                         | 11        | 13        | 14        | 12                            | 9                         | 11        | 13        | 11                            | 6                          | 10        | 12        | 13        | 11                            | +                                 |
| Organisation<br>(Org.) /15               | 6                         | 8         | 16        | 10                            | 8                          | 7         | 14        | 15        | 11                            | 10                        | 11        | 12        | 11                            | 9                          | 11        | 13        | 15        | 12                            | +                                 |
| Vocabulary<br>(Voc.) /15                 | 7                         | 10        | 13        | 10                            | 9                          | 10        | 12        | 13        | 11                            | 6                         | 12        | 18        | 12                            | 8                          | 9         | 15        | 16        | 12                            | +                                 |
| Language Use<br>(LU) /20                 | 5                         | 10        | 15        | 10                            | 6                          | 9         | 11        | 14        | 10                            | 9                         | 10        | 15        | 11                            | 10                         | 11        | 13        | 14        | 12                            | +                                 |
| Spelling<br>(Orthography)<br>(Orth.) /15 | 6                         | 8         | 13        | 9                             | 7                          | 9         | 11        | 13        | 10                            | 8                         | 9         | 13        | 10                            | 7                          | 8         | 15        | 16        | 12                            | +                                 |
| Mechanics<br>(Mech.) /15                 | 6                         | 9         | 12        | 9                             | 5                          | 9         | 11        | 15        | 10                            | 9                         | 10        | 11        | 10                            | 7                          | 9         | 13        | 14        | 11                            | +                                 |
| Total Mark<br>/100                       | 38                        | 56        | 83        | 59                            | 45                         | 55        | 72        | 84        | 64                            | 51                        | 63        | 82        | 65                            | 47                         | 58        | 81        | 88        | 70                            | +                                 |

### Sample Analysis of Students' Writing Test

#### Student 13

| Criteria \ Tests                         | Baseline Period 01<br>(A) |           |           | Mean                          | Treatment Period 01<br>(B) |           |           |           | Mean                          | Baseline Period 02<br>(A) |           |           | Mean                          | Treatment Period 02<br>(B) |           |           |           | Mean                          | Performance<br>Appraisal<br>(+/-) |
|--|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|-----------------------------------|
|  | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ |                                   |
| Content<br>(Cont.) /20                   | 7                         | 8         | 12        | 9                             | 7                          | 9         | 13        | 14        | 11                            | 8                         | 11        | 13        | 11                            | 9                          | 11        | 13        | 15        | 12                            | +                                 |
| Organisation<br>(Org.) /15               | 8                         | 9         | 13        | 10                            | 9                          | 10        | 12        | 13        | 11                            | 9                         | 10        | 11        | 10                            | 8                          | 9         | 15        | 16        | 12                            | +                                 |
| Vocabulary<br>(Voc.) /15                 | 6                         | 8         | 16        | 10                            | 5                          | 9         | 11        | 15        | 10                            | 10                        | 11        | 12        | 11                            | 7                          | 10        | 14        | 17        | 12                            | +                                 |
| Language Use<br>(LU) /20                 | 8                         | 9         | 10        | 9                             | 6                          | 10        | 12        | 16        | 11                            | 8                         | 8         | 13        | 10                            | 9                          | 12        | 13        | 18        | 13                            | +                                 |
| Spelling<br>(Orthography)<br>(Orth.) /15 | 6                         | 7         | 8         | 7                             | 6                          | 9         | 11        | 14        | 10                            | 7                         | 10        | 13        | 10                            | 9                          | 11        | 13        | 15        | 12                            | +                                 |
| Mechanics<br>(Mech.) /15                 | 3                         | 5         | 13        | 7                             | 5                          | 6         | 14        | 15        | 10                            | 8                         | 9         | 13        | 10                            | 8                          | 10        | 14        | 16        | 12                            | +                                 |
| Total Mark<br>/100                       | 38                        | 46        | 72        | 52                            | 38                         | 53        | 73        | 87        | 63                            | 50                        | 59        | 75        | 62                            | 50                         | 63        | 82        | 97        | 73                            | +                                 |

### Sample Analysis of Students' Writing Test

#### Student 14

|  | Baseline Period 01<br>(A) |           |           | Mean                          | Treatment Period 01<br>(B) |           |           |           | Mean                          | Baseline Period 02<br>(A) |           |           | Mean                          | Treatment Period 02<br>(B) |           |           |           | Mean                          |                                   |
|--|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|-----------------------------------|
|  | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ |                                   |
| Criteria \ Tests                         |                           |           |           |                               |                            |           |           |           |                               |                           |           |           |                               |                            |           |           |           |                               | Performance<br>Appraisal<br>(+/-) |
| Content<br>(Cont.) /20                   | 7                         | 8         | 12        | 9                             | 9                          | 10        | 12        | 13        | 11                            | 10                        | 11        | 12        | 11                            | 10                         | 11        | 13        | 14        | 12                            | +                                 |
| Organisation<br>(Org.) /15               | 5                         | 9         | 13        | 9                             | 8                          | 6         | 12        | 14        | 10                            | 8                         | 10        | 15        | 11                            | 8                          | 10        | 14        | 16        | 12                            | +                                 |
| Vocabulary<br>(Voc.) /15                 | 8                         | 6         | 13        | 9                             | 9                          | 10        | 11        | 10        | 10                            | 7                         | 9         | 14        | 10                            | 6                          | 10        | 12        | 16        | 11                            | +                                 |
| Language Use<br>(LU) /20                 | 7                         | 9         | 11        | 9                             | 6                          | 7         | 13        | 14        | 10                            | 9                         | 11        | 13        | 11                            | 9                          | 11        | 13        | 15        | 12                            | +                                 |
| Spelling<br>(Orthography)<br>(Orth.) /15 | 3                         | 8         | 13        | 8                             | 5                          | 6         | 14        | 15        | 10                            | 8                         | 11        | 13        | 11                            | 8                          | 9         | 15        | 16        | 12                            | +                                 |
| Mechanics<br>(Mech.) /15                 | 5                         | 7         | 9         | 7                             | 7                          | 9         | 11        | 13        | 10                            | 6                         | 8         | 16        | 10                            | 7                          | 8         | 16        | 17        | 12                            | +                                 |
| Total Mark<br>/100                       | 35                        | 47        | 71        | 51                            | 44                         | 48        | 73        | 79        | 61                            | 48                        | 60        | 83        | 64                            | 48                         | 59        | 83        | 94        | 71                            | +                                 |

## Sample Analysis of Students' Writing Test

### Student 15

| Criteria \ Tests                         | Baseline Period 01<br>(A) |           |           | Mean                          | Treatment Period 01<br>(B) |           |           |           | Mean                          | Baseline Period 02<br>(A) |           |           | Mean                          | Treatment Period 02<br>(B) |           |           |           | Mean                          | Performance<br>Appraisal<br>(+/-) |
|--|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|-----------------------------------|
|  | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ |                                   |
| Content<br>(Cont.) /20                   | 7                         | 9         | 11        | 9                             | 5                          | 6         | 14        | 15        | 10                            | 6                         | 8         | 16        | 10                            | 6                          | 12        | 12        | 18        | 12                            | +                                 |
| Organisation<br>(Org.) /15               | 8                         | 6         | 13        | 9                             | 7                          | 9         | 11        | 13        | 10                            | 5                         | 10        | 15        | 10                            | 9                          | 10        | 12        | 13        | 11                            | +                                 |
| Vocabulary<br>(Voc.) /15                 | 9                         | 10        | 11        | 10                            | 8                          | 9         | 11        | 12        | 10                            | 9                         | 10        | 15        | 11                            | 10                         | 11        | 12        | 11        | 11                            | +                                 |
| Language Use<br>(LU) /20                 | 3                         | 8         | 13        | 8                             | 6                          | 7         | 13        | 14        | 10                            | 8                         | 9         | 13        | 10                            | 8                          | 6         | 12        | 14        | 10                            | +                                 |
| Spelling<br>(Orthography)<br>(Orth.) /15 | 6                         | 7         | 8         | 7                             | 7                          | 8         | 9         | 12        | 9                             | 10                        | 11        | 12        | 11                            | 9                          | 11        | 13        | 15        | 12                            | +                                 |
| Mechanics<br>(Mech.) /15                 | 4                         | 5         | 6         | 5                             | 9                          | 10        | 11        | 10        | 10                            | 8                         | 11        | 13        | 11                            | 7                          | 10        | 14        | 17        | 12                            | +                                 |
| Total Mark<br>/100                       | 37                        | 45        | 62        | 48                            | 42                         | 49        | 69        | 76        | 59                            | 46                        | 59        | 84        | 63                            | 49                         | 60        | 75        | 88        | 68                            | +                                 |

## Sample Analysis of Students' Writing Test

### Student 16

| Criteria \ Tests                         | Baseline Period 01<br>(A) |           |           | Mean                          | Treatment Period 01<br>(B) |           |           |           | Mean                          | Baseline Period 02<br>(A) |           |           | Mean                          | Treatment Period 02<br>(B) |           |           |           | Mean                          | Performance<br>Appraisal<br>(+/-) |
|--|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|-----------------------------------|
|  | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ |                                   |
| Content<br>(Cont.) /20                   | 8                         | 8         | 11        | 9                             | 10                         | 11        | 11        | 12        | 11                            | 10                        | 11        | 12        | 11                            | 10                         | 11        | 11        | 12        | 11                            | +                                 |
| Organisation<br>(Org.) /15               | 8                         | 9         | 10        | 9                             | 11                         | 10        | 12        | 11        | 11                            | 9                         | 11        | 10        | 10                            | 11                         | 13        | 10        | 10        | 11                            | +                                 |
| Vocabulary<br>(Voc.) /15                 | 9                         | 8         | 10        | 9                             | 9                          | 10        | 11        | 10        | 10                            | 8                         | 10        | 12        | 10                            | 10                         | 9         | 12        | 13        | 11                            | +                                 |
| Language Use<br>(LU) /20                 | 8                         | 7         | 11        | 9                             | 6                          | 8         | 11        | 12        | 9                             | 9                         | 10        | 11        | 10                            | 5                          | 10        | 12        | 13        | 10                            | +                                 |
| Spelling<br>(Orthography)<br>(Orth.) /15 | 7                         | 11        | 8         | 9                             | 10                         | 9         | 13        | 12        | 11                            | 10                        | 8         | 12        | 10                            | 11                         | 10        | 11        | 12        | 11                            | +                                 |
| Mechanics<br>(Mech.) /15                 | 8                         | 7         | 9         | 8                             | 9                          | 10        | 11        | 10        | 10                            | 9                         | 10        | 11        | 10                            | 10                         | 10        | 12        | 11        | 11                            | +                                 |
| Total Mark<br>/100                       | 48                        | 50        | 59        | 53                            | 55                         | 58        | 69        | 67        | 62                            | 55                        | 60        | 68        | 61                            | 57                         | 63        | 68        | 71        | 65                            | +                                 |

## Sample Analysis of Students' Writing Test

### Student 17

| Criteria \ Tests                         | Baseline Period 01<br>(A) |           |           | Mean                          | Treatment Period 01<br>(B) |           |           |           | Mean                          | Baseline Period 02<br>(A) |           |           | Mean                          | Treatment Period 02<br>(B) |           |           |           | Mean                          | Performance<br>Appraisal<br>(+/-) |
|--|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|-----------------------------------|
|  | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ |                                   |
| Content<br>(Cont.) /20                   | 8                         | 9         | 10        | 9                             | 10                         | 11        | 13        | 14        | 12                            | 10                        | 11        | 12        | 11                            | 7                          | 9         | 13        | 14        | 11                            | +                                 |
| Organisation<br>(Org.) /15               | 8                         | 6         | 13        | 9                             | 6                          | 9         | 11        | 14        | 10                            | 7                         | 9         | 14        | 10                            | 8                          | 9         | 15        | 16        | 12                            | +                                 |
| Vocabulary<br>(Voc.) /15                 | 9                         | 10        | 11        | 10                            | 5                          | 6         | 14        | 15        | 10                            | 8                         | 10        | 15        | 11                            | 6                          | 12        | 12        | 18        | 12                            | +                                 |
| Language Use<br>(LU) /20                 | 6                         | 9         | 12        | 9                             | 9                          | 10        | 11        | 10        | 10                            | 9                         | 11        | 13        | 11                            | 8                          | 7         | 14        | 15        | 11                            | +                                 |
| Spelling<br>(Orthography)<br>(Orth.) /15 | 7                         | 9         | 11        | 9                             | 8                          | 6         | 12        | 14        | 10                            | 7                         | 14        | 15        | 12                            | 10                         | 12        | 14        | 16        | 13                            | +                                 |
| Mechanics<br>(Mech.) /15                 | 5                         | 6         | 7         | 6                             | 7                          | 9         | 13        | 14        | 11                            | 5                         | 10        | 15        | 10                            | 9                          | 12        | 13        | 18        | 12                            | +                                 |
| Total Mark<br>/100                       | 43                        | 49        | 64        | 52                            | 45                         | 51        | 74        | 81        | 63                            | 46                        | 65        | 84        | 65                            | 48                         | 61        | 81        | 97        | 71                            | +                                 |

## Sample Analysis of Students' Writing Test

### Student 18

| Criteria \ Tests                         | Baseline Period 01<br>(A) |           |           | Mean                          | Treatment Period 01<br>(B) |           |           |           | Mean                          | Baseline Period 02<br>(A) |           |           | Mean                          | Treatment Period 02<br>(B) |           |           |           | Mean                          | Performance<br>Appraisal<br>(+/-) |
|--|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|-----------------------------------|
|  | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ |                                   |
| Content<br>(Cont.) /20                   | 8                         | 8         | 11        | 9                             | 9                          | 10        | 11        | 10        | 10                            | 10                        | 9         | 11        | 10                            | 10                         | 13        | 14        | 15        | 13                            | +                                 |
| Organisation<br>(Org.) /15               | 7                         | 8         | 11        | 9                             | 11                         | 10        | 12        | 11        | 11                            | 10                        | 8         | 12        | 10                            | 9                          | 10        | 13        | 12        | 11                            | +                                 |
| Vocabulary<br>(Voc.) /15                 | 9                         | 11        | 10        | 10                            | 10                         | 9         | 13        | 12        | 11                            | 11                        | 9         | 13        | 11                            | 11                         | 12        | 12        | 13        | 12                            | +                                 |
| Language Use<br>(LU) /20                 | 6                         | 6         | 12        | 8                             | 6                          | 8         | 11        | 12        | 9                             | 9                         | 11        | 13        | 11                            | 13                         | 12        | 14        | 13        | 13                            | +                                 |
| Spelling<br>(Orthography)<br>(Orth.) /15 | 5                         | 6         | 13        | 8                             | 8                          | 10        | 10        | 12        | 10                            | 10                        | 9         | 11        | 10                            | 12                         | 11        | 12        | 13        | 12                            | +                                 |
| Mechanics<br>(Mech.) /15                 | 5                         | 4         | 6         | 5                             | 10                         | 9         | 11        | 12        | 11                            | 8                         | 10        | 12        | 10                            | 13                         | 12        | 13        | 14        | 13                            | +                                 |
| Total Mark<br>/100                       | 40                        | 43        | 63        | 49                            | 54                         | 56        | 68        | 69        | 62                            | 58                        | 56        | 72        | 62                            | 68                         | 70        | 78        | 80        | 74                            | +                                 |

## Sample Analysis of Students' Writing Test

### Student 19

| Criteria \ Tests                         | Baseline Period 01<br>(A) |           |           | Mean                          | Treatment Period 01<br>(B) |           |           |           | Mean                          | Baseline Period 02<br>(A) |           |           | Mean                          | Treatment Period 02<br>(B) |           |           |           | Mean                          | Performance<br>Appraisal<br>(+/-) |
|--|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|-----------------------------------|
|  | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ |                                   |
| Content<br>(Cont.) /20                   | 7                         | 9         | 11        | 9                             | 8                          | 9         | 11        | 12        | 10                            | 8                         | 11        | 14        | 11                            | 10                         | 12        | 14        | 16        | 13                            | +                                 |
| Organisation<br>(Org.) /15               | 8                         | 9         | 10        | 9                             | 5                          | 6         | 14        | 15        | 10                            | 5                         | 10        | 15        | 10                            | 8                          | 11        | 13        | 11        | 11                            | +                                 |
| Vocabulary<br>(Voc.) /15                 | 9                         | 10        | 11        | 10                            | 9                          | 10        | 11        | 10        | 10                            | 7                         | 10        | 13        | 10                            | 7                          | 8         | 16        | 17        | 12                            | +                                 |
| Language Use<br>(LU) /20                 | 3                         | 8         | 12        | 8                             | 8                          | 6         | 12        | 14        | 10                            | 7                         | 9         | 17        | 11                            | 10                         | 11        | 13        | 14        | 12                            | +                                 |
| Spelling<br>(Orthography)<br>(Orth.) /15 | 4                         | 6         | 11        | 7                             | 5                          | 9         | 11        | 12        | 10                            | 9                         | 11        | 13        | 11                            | 8                          | 13        | 13        | 18        | 13                            | +                                 |
| Mechanics<br>(Mech.) /15                 | 3                         | 5         | 13        | 7                             | 6                          | 9         | 11        | 14        | 10                            | 7                         | 9         | 14        | 10                            | 6                          | 10        | 12        | 16        | 11                            | +                                 |
| Total Mark<br>/100                       | 34                        | 47        | 68        | 50                            | 41                         | 49        | 70        | 77        | 60                            | 43                        | 60        | 86        | 63                            | 49                         | 65        | 81        | 92        | 72                            | +                                 |

## Sample Analysis of Students' Writing Test

### Student 20

| Criteria \ Tests                         | Baseline Period 01<br>(A) |           |           | Mean                          | Treatment Period 01<br>(B) |           |           |           | Mean                          | Baseline Period 02<br>(A) |           |           | Mean                          | Treatment Period 02<br>(B) |           |           |           | Mean                          | Performance<br>Appraisal<br>(+/-) |
|--|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|-----------------------------------|
|  | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ |                                   |
| Content<br>(Cont.) /20                   | 8                         | 9         | 10        | 9                             | 9                          | 10        | 12        | 13        | 11                            | 10                        | 11        | 12        | 11                            | 9                          | 10        | 12        | 13        | 11                            | +                                 |
| Organisation<br>(Org.) /15               | 6                         | 9         | 12        | 9                             | 7                          | 9         | 11        | 13        | 10                            | 7                         | 10        | 13        | 10                            | 10                         | 11        | 13        | 14        | 12                            | +                                 |
| Vocabulary<br>(Voc.) /15                 | 5                         | 10        | 15        | 10                            | 5                          | 6         | 14        | 15        | 10                            | 5                         | 10        | 15        | 10                            | 8                          | 7         | 14        | 15        | 11                            | +                                 |
| Language Use<br>(LU) /20                 | 8                         | 6         | 12        | 9                             | 8                          | 6         | 12        | 14        | 10                            | 8                         | 9         | 13        | 10                            | 6                          | 12        | 12        | 18        | 12                            | +                                 |
| Spelling<br>(Orthography)<br>(Orth.) /15 | 7                         | 8         | 9         | 8                             | 6                          | 10        | 12        | 16        | 11                            | 7                         | 9         | 17        | 11                            | 9                          | 11        | 13        | 15        | 12                            | +                                 |
| Mechanics<br>(Mech.) /15                 | 5                         | 9         | 13        | 9                             | 10                         | 11        | 11        | 12        | 11                            | 6                         | 8         | 12        | 10                            | 7                          | 8         | 16        | 17        | 12                            | +                                 |
| Total Mark<br>/100                       | 39                        | 51        | 71        | 54                            | 45                         | 52        | 72        | 83        | 63                            | 43                        | 57        | 82        | 62                            | 49                         | 59        | 80        | 92        | 70                            | +                                 |

### Sample Analysis of Students' Writing Test

#### Student 21

| Criteria \ Tests                         | Baseline Period 01<br>(A) |           |           | Mean                          | Treatment Period 01<br>(B) |           |           |           | Mean                          | Baseline Period 02<br>(A) |           |           | Mean                          | Treatment Period 02<br>(B) |           |           |           | Mean                          | Performance<br>Appraisal<br>(+/-) |
|--|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|-----------------------------------|
|  | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ |                                   |
| Content<br>(Cont.) /20                   | 8                         | 9         | 10        | 9                             | 9                          | 10        | 11        | 12        | 11                            | 8                         | 10        | 15        | 11                            | 8                          | 9         | 15        | 16        | 12                            | +                                 |
| Organisation<br>(Org.) /15               | 8                         | 6         | 12        | 9                             | 6                          | 9         | 11        | 14        | 10                            | 6                         | 8         | 16        | 10                            | 9                          | 11        | 13        | 15        | 12                            | +                                 |
| Vocabulary<br>(Voc.) /15                 | 5                         | 9         | 13        | 9                             | 7                          | 9         | 11        | 13        | 10                            | 9                         | 11        | 13        | 11                            | 6                          | 12        | 12        | 18        | 12                            | +                                 |
| Language Use<br>(LU) /20                 | 7                         | 8         | 9         | 8                             | 5                          | 6         | 14        | 15        | 10                            | 5                         | 10        | 15        | 10                            | 10                         | 11        | 15        | 16        | 13                            | +                                 |
| Spelling<br>(Orthography)<br>(Orth.) /15 | 4                         | 6         | 14        | 8                             | 6                          | 7         | 13        | 14        | 10                            | 7                         | 9         | 17        | 11                            | 7                          | 8         | 16        | 17        | 12                            | +                                 |
| Mechanics<br>(Mech.) /15                 | 3                         | 6         | 9         | 6                             | 8                          | 6         | 12        | 14        | 10                            | 8                         | 9         | 13        | 10                            | 9                          | 11        | 13        | 15        | 12                            | +                                 |
| Total Mark<br>/100                       | 35                        | 44        | 67        | 49                            | 41                         | 47        | 72        | 82        | 61                            | 43                        | 57        | 89        | 63                            | 49                         | 62        | 84        | 97        | 73                            | +                                 |

## Sample Analysis of Students' Writing Test

### Student 22

| Tests<br>Criteria                        | Baseline Period 01<br>(A) |           |           | Mean                          | Treatment Period 01<br>(B) |           |           |           | Mean                          | Baseline Period 02<br>(A) |           |           | Mean                          | Treatment Period 02<br>(B) |           |           |           | Mean                          | Performance<br>Appraisal<br>(+/-) |
|--|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|-----------------------------------|
|  | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ |                                   |
| Content<br>(Cont.) /20                   | 9                         | 10        | 11        | 10                            | 10                         | 11        | 13        | 14        | 12                            | 10                        | 11        | 12        | 11                            | 6                          | 10        | 12        | 16        | 11                            | +                                 |
| Organisation<br>(Org.) /15               | 8                         | 9         | 13        | 10                            | 6                          | 9         | 11        | 14        | 10                            | 6                         | 8         | 16        | 10                            | 8                          | 9         | 15        | 16        | 12                            | +                                 |
| Vocabulary<br>(Voc.) /15                 | 7                         | 9         | 14        | 10                            | 5                          | 6         | 14        | 15        | 10                            | 7                         | 9         | 17        | 11                            | 9                          | 11        | 13        | 15        | 12                            | +                                 |
| Language Use<br>(LU) /20                 | 8                         | 9         | 10        | 9                             | 9                          | 10        | 11        | 10        | 10                            | 8                         | 10        | 15        | 11                            | 8                          | 7         | 14        | 15        | 11                            | +                                 |
| Spelling<br>(Orthography)<br>(Orth.) /15 | 5                         | 9         | 13        | 9                             | 8                          | 6         | 12        | 14        | 10                            | 9                         | 11        | 13        | 11                            | 7                          | 8         | 16        | 17        | 12                            | +                                 |
| Mechanics<br>(Mech.) /15                 | 4                         | 6         | 14        | 8                             | 6                          | 10        | 12        | 16        | 11                            | 5                         | 10        | 15        | 10                            | 7                          | 9         | 13        | 14        | 11                            | +                                 |
| Total Mark<br>/100                       | 41                        | 52        | 75        | 56                            | 44                         | 52        | 73        | 83        | 63                            | 45                        | 59        | 88        | 64                            | 45                         | 54        | 83        | 93        | 69                            | +                                 |

## Sample Analysis of Students' Writing Test

### Student 23

| Criteria \ Tests                         | Baseline Period 01<br>(A) |           |           | Mean                          | Treatment Period 01<br>(B) |           |           |           | Mean                          | Baseline Period 02<br>(A) |           |           | Mean                          | Treatment Period 02<br>(B) |           |           |           | Mean                          | Performance<br>Appraisal<br>(+/-) |
|--|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|-----------------------------------|
|  | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ |                                   |
| Content<br>(Cont.) /20                   | 8                         | 9         | 10        | 9                             | 6                          | 9         | 11        | 14        | 10                            | 10                        | 11        | 12        | 11                            | 10                         | 12        | 14        | 16        | 13                            | +                                 |
| Organisation<br>(Org.) /15               | 7                         | 9         | 11        | 9                             | 7                          | 9         | 11        | 13        | 10                            | 7                         | 9         | 14        | 10                            | 8                          | 11        | 13        | 11        | 11                            | +                                 |
| Vocabulary<br>(Voc.) /15                 | 8                         | 6         | 13        | 9                             | 5                          | 6         | 14        | 15        | 10                            | 6                         | 14        | 16        | 12                            | 9                          | 10        | 12        | 13        | 11                            | +                                 |
| Language Use<br>(LU) /20                 | 7                         | 8         | 9         | 8                             | 6                          | 8         | 9         | 13        | 9                             | 5                         | 10        | 15        | 10                            | 10                         | 11        | 13        | 14        | 12                            | +                                 |
| Spelling<br>(Orthography)<br>(Orth.) /15 | 6                         | 7         | 8         | 7                             | 6                          | 7         | 13        | 14        | 10                            | 6                         | 8         | 16        | 10                            | 9                          | 12        | 13        | 18        | 13                            | +                                 |
| Mechanics<br>(Mech.) /15                 | 4                         | 5         | 6         | 5                             | 9                          | 10        | 12        | 13        | 11                            | 8                         | 9         | 13        | 10                            | 11                         | 12        | 14        | 15        | 13                            | +                                 |
| Total Mark<br>/100                       | 40                        | 44        | 57        | 47                            | 39                         | 49        | 70        | 82        | 60                            | 42                        | 61        | 86        | 63                            | 57                         | 68        | 79        | 87        | 73                            | +                                 |

## Sample Analysis of Students' Writing Test

### Student 24

| Criteria \ Tests                         | Baseline Period 01<br>(A) |           |           | Mean                          | Treatment Period 01<br>(B) |           |           |           | Mean                          | Baseline Period 02<br>(A) |           |           | Mean                          | Treatment Period 02<br>(B) |           |           |           | Mean                          | Performance<br>Appraisal<br>(+/-) |
|--|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|-----------------------------------|
|  | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ |                                   |
| Content<br>(Cont.) /20                   | 8                         | 9         | 10        | 9                             | 8                          | 6         | 12        | 14        | 10                            | 9                         | 10        | 11        | 10                            | 7                          | 9         | 13        | 14        | 11                            | +                                 |
| Organisation<br>(Org.) /15               | 6                         | 9         | 12        | 9                             | 6                          | 7         | 13        | 14        | 10                            | 8                         | 9         | 13        | 10                            | 8                          | 7         | 14        | 15        | 11                            | +                                 |
| Vocabulary<br>(Voc.) /15                 | 7                         | 9         | 14        | 10                            | 6                          | 10        | 12        | 16        | 11                            | 9                         | 11        | 13        | 11                            | 10                         | 11        | 12        | 11        | 11                            | +                                 |
| Language Use<br>(LU) /20                 | 7                         | 8         | 9         | 8                             | 5                          | 6         | 14        | 15        | 10                            | 7                         | 10        | 13        | 10                            | 9                          | 10        | 12        | 13        | 11                            | +                                 |
| Spelling<br>(Orthography)<br>(Orth.) /15 | 7                         | 8         | 12        | 9                             | 9                          | 10        | 11        | 10        | 10                            | 7                         | 9         | 17        | 11                            | 7                          | 8         | 16        | 17        | 12                            | +                                 |
| Mechanics<br>(Mech.) /15                 | 3                         | 6         | 7         | 5                             | 8                          | 9         | 11        | 12        | 10                            | 6                         | 8         | 16        | 10                            | 8                          | 7         | 14        | 15        | 11                            | +                                 |
| Total Mark<br>/100                       | 38                        | 49        | 64        | 50                            | 42                         | 48        | 73        | 81        | 61                            | 46                        | 57        | 83        | 62                            | 49                         | 52        | 81        | 85        | 67                            | +                                 |

## Sample Analysis of Students' Writing Test

### Student 25

| Criteria \ Tests                         | Baseline Period 01<br>(A) |           |           | Mean                          | Treatment Period 01<br>(B) |           |           |           | Mean                          | Baseline Period 02<br>(A) |           |           | Mean                          | Treatment Period 02<br>(B) |           |           |           | Mean                          | Performance<br>Appraisal<br>(+/-) |
|--|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|-----------------------------------|
|  | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ |                                   |
| Content<br>(Cont.) /20                   | 6                         | 9         | 12        | 9                             | 6                          | 9         | 11        | 14        | 10                            | 5                         | 10        | 15        | 10                            | 8                          | 10        | 14        | 16        | 12                            | +                                 |
| Organisation<br>(Org.) /15               | 5                         | 7         | 12        | 8                             | 5                          | 9         | 11        | 15        | 10                            | 6                         | 8         | 16        | 10                            | 7                          | 8         | 16        | 17        | 12                            | +                                 |
| Vocabulary<br>(Voc.) /15                 | 8                         | 9         | 10        | 9                             | 9                          | 10        | 11        | 10        | 10                            | 8                         | 11        | 14        | 11                            | 8                          | 9         | 15        | 16        | 12                            | +                                 |
| Language Use<br>(LU) /20                 | 4                         | 6         | 14        | 8                             | 7                          | 9         | 11        | 13        | 10                            | 8                         | 9         | 13        | 10                            | 9                          | 11        | 13        | 15        | 12                            | +                                 |
| Spelling<br>(Orthography)<br>(Orth.) /15 | 6                         | 9         | 9         | 8                             | 6                          | 7         | 13        | 14        | 10                            | 9                         | 10        | 11        | 10                            | 11                         | 12        | 14        | 15        | 13                            | +                                 |
| Mechanics<br>(Mech.) /15                 | 10                        | 4         | 10        | 5                             | 8                          | 6         | 12        | 14        | 10                            | 7                         | 10        | 13        | 10                            | 6                          | 12        | 12        | 18        | 12                            | +                                 |
| Total Mark<br>/100                       | 39                        | 44        | 67        | 47                            | 41                         | 50        | 69        | 80        | 60                            | 43                        | 58        | 82        | 61                            | 49                         | 62        | 84        | 97        | 73                            | +                                 |

### Sample Analysis of Students' Writing Test

#### Student 26

| Criteria \ Tests                         | Baseline Period 01<br>(A) |           |           | Mean                          | Treatment Period 01<br>(B) |           |           |           | Mean                          | Baseline Period 02<br>(A) |           |           | Mean                          | Treatment Period 02<br>(B) |           |           |           | Mean                          | Performance<br>Appraisal<br>(+/-) |
|--|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|-----------------------------------|
|  | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ |                                   |
| Content<br>(Cont.) /20                   | 7                         | 9         | 11        | 9                             | 9                          | 11        | 13        | 15        | 12                            | 7                         | 9         | 17        | 11                            | 8                          | 11        | 13        | 11        | 11                            | +                                 |
| Organisation<br>(Org.) /15               | 6                         | 9         | 12        | 9                             | 7                          | 9         | 11        | 13        | 10                            | 9                         | 10        | 11        | 10                            | 10                         | 11        | 12        | 11        | 11                            | +                                 |
| Vocabulary<br>(Voc.) /15                 | 7                         | 10        | 13        | 10                            | 8                          | 9         | 11        | 12        | 10                            | 11                        | 12        | 13        | 12                            | 7                          | 8         | 16        | 17        | 12                            | +                                 |
| Language Use<br>(LU) /20                 | 6                         | 8         | 10        | 8                             | 6                          | 7         | 13        | 14        | 10                            | 5                         | 10        | 15        | 10                            | 7                          | 9         | 13        | 14        | 11                            | +                                 |
| Spelling<br>(Orthography)<br>(Orth.) /15 | 5                         | 9         | 13        | 9                             | 9                          | 10        | 11        | 10        | 10                            | 6                         | 8         | 16        | 10                            | 8                          | 10        | 14        | 16        | 12                            | +                                 |
| Mechanics<br>(Mech.) /15                 | 4                         | 6         | 14        | 8                             | 6                          | 10        | 12        | 18        | 11                            | 8                         | 9         | 13        | 10                            | 6                          | 12        | 12        | 18        | 12                            | +                                 |
| Total Mark<br>/100                       | 35                        | 51        | 73        | 53                            | 45                         | 56        | 71        | 82        | 63                            | 46                        | 58        | 85        | 63                            | 46                         | 61        | 80        | 87        | 69                            | +                                 |

## Sample Analysis of Students' Writing Test

### Student 27

| Tests<br>Criteria                        | Baseline Period 01<br>(A) |           |           | Mean                          | Treatment Period 01<br>(B) |           |           |           | Mean                          | Baseline Period 02<br>(A) |           |           | Mean                          | Treatment Period 02<br>(B) |           |           |           | Mean                          | Performance<br>Appraisal<br>(+/-) |
|--|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|-----------------------------------|
|  | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ |                                   |
| Content<br>(Cont.) /20                   | 10                        | 11        | 12        | 11                            | 7                          | 9         | 13        | 14        | 11                            | 9                         | 10        | 15        | 11                            | 11                         | 12        | 14        | 15        | 13                            | +                                 |
| Organisation<br>(Org.) /15               | 7                         | 10        | 13        | 10                            | 9                          | 10        | 12        | 13        | 11                            | 6                         | 8         | 16        | 10                            | 6                          | 10        | 12        | 16        | 11                            | +                                 |
| Vocabulary<br>(Voc.) /15                 | 8                         | 9         | 13        | 10                            | 8                          | 9         | 11        | 12        | 10                            | 7                         | 9         | 14        | 10                            | 10                         | 11        | 13        | 14        | 12                            | +                                 |
| Language Use<br>(LU) /20                 | 7                         | 9         | 11        | 9                             | 8                          | 7         | 14        | 15        | 11                            | 9                         | 10        | 11        | 10                            | 8                          | 9         | 15        | 16        | 12                            | +                                 |
| Spelling<br>(Orthography)<br>(Orth.) /15 | 8                         | 6         | 13        | 9                             | 10                         | 11        | 12        | 11        | 11                            | 5                         | 10        | 15        | 10                            | 9                          | 12        | 13        | 18        | 13                            | +                                 |
| Mechanics<br>(Mech.) /15                 | 5                         | 9         | 13        | 9                             | 8                          | 11        | 13        | 11        | 11                            | 9                         | 11        | 13        | 11                            | 9                          | 11        | 13        | 15        | 12                            | +                                 |
| Total Mark<br>/100                       | 45                        | 54        | 75        | 58                            | 50                         | 57        | 75        | 76        | 65                            | 45                        | 58        | 84        | 62                            | 53                         | 65        | 80        | 94        | 73                            | +                                 |

## Sample Analysis of Students' Writing Test

### Student 28

| Criteria \ Tests                         | Baseline Period 01<br>(A) |           |           | Mean                          | Treatment Period 01<br>(B) |           |           |           | Mean                          | Baseline Period 02<br>(A) |           |           | Mean                          | Treatment Period 02<br>(B) |           |           |           | Mean                          | Performance<br>Appraisal<br>(+/-) |
|--|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|-----------------------------------|
|  | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ |                                   |
| Content<br>(Cont.) /20                   | 8                         | 9         | 13        | 10                            | 9                          | 11        | 13        | 15        | 12                            | 10                        | 11        | 12        | 11                            | 10                         | 11        | 13        | 14        | 12                            | +                                 |
| Organisation<br>(Org.) /15               | 7                         | 9         | 14        | 10                            | 5                          | 6         | 14        | 15        | 10                            | 6                         | 8         | 16        | 10                            | 7                          | 10        | 14        | 17        | 12                            | +                                 |
| Vocabulary<br>(Voc.) /15                 | 5                         | 10        | 15        | 10                            | 7                          | 9         | 13        | 14        | 11                            | 7                         | 9         | 14        | 10                            | 8                          | 10        | 14        | 16        | 12                            | +                                 |
| Language Use<br>(LU) /20                 | 6                         | 9         | 12        | 9                             | 8                          | 6         | 12        | 14        | 10                            | 9                         | 10        | 11        | 10                            | 8                          | 13        | 13        | 18        | 13                            | +                                 |
| Spelling<br>(Orthography)<br>(Orth.) /15 | 8                         | 9         | 10        | 9                             | 7                          | 9         | 11        | 13        | 10                            | 7                         | 9         | 14        | 10                            | 7                          | 8         | 16        | 17        | 12                            | +                                 |
| Mechanics<br>(Mech.) /15                 | 2                         | 8         | 8         | 6                             | 9                          | 10        | 11        | 10        | 10                            | 8                         | 9         | 13        | 10                            | 11                         | 12        | 14        | 15        | 13                            | +                                 |
| Total Mark<br>/100                       | 36                        | 54        | 72        | 54                            | 45                         | 51        | 74        | 81        | 63                            | 47                        | 56        | 80        | 61                            | 51                         | 64        | 84        | 97        | 74                            | +                                 |

## Sample Analysis of Students' Writing Test

### Student 29

| Criteria \ Tests                         | Baseline Period 01<br>(A) |           |           | Mean                          | Treatment Period 01<br>(B) |           |           |           | Mean                          | Baseline Period 02<br>(A) |           |           | Mean                          | Treatment Period 02<br>(B) |           |           |           | Mean                          | Performance<br>Appraisal<br>(+/-) |
|--|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|-----------------------------------|
|  | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ |                                   |
| Content<br>(Cont.) /20                   | 8                         | 9         | 10        | 9                             | 6                          | 10        | 12        | 16        | 11                            | 8                         | 10        | 15        | 11                            | 8                          | 10        | 14        | 16        | 12                            | +                                 |
| Organisation<br>(Org.) /15               | 3                         | 8         | 13        | 8                             | 7                          | 9         | 11        | 13        | 10                            | 7                         | 9         | 17        | 11                            | 9                          | 10        | 12        | 13        | 11                            | +                                 |
| Vocabulary<br>(Voc.) /15                 | 5                         | 9         | 13        | 9                             | 8                          | 9         | 11        | 12        | 10                            | 8                         | 11        | 14        | 11                            | 9                          | 11        | 13        | 15        | 12                            | +                                 |
| Language Use<br>(LU) /20                 | 4                         | 6         | 14        | 8                             | 9                          | 10        | 11        | 10        | 10                            | 5                         | 10        | 15        | 10                            | 7                          | 9         | 13        | 14        | 11                            | +                                 |
| Spelling<br>(Orthography)<br>(Orth.) /15 | 3                         | 5         | 13        | 7                             | 6                          | 7         | 13        | 14        | 10                            | 9                         | 10        | 11        | 10                            | 10                         | 11        | 13        | 14        | 12                            | +                                 |
| Mechanics<br>(Mech.) /15                 | 5                         | 6         | 10        | 7                             | 8                          | 7         | 14        | 15        | 11                            | 7                         | 9         | 14        | 10                            | 9                          | 11        | 13        | 15        | 12                            | +                                 |
| Total Mark<br>/100                       | 28                        | 43        | 73        | 48                            | 44                         | 52        | 72        | 80        | 62                            | 44                        | 59        | 86        | 63                            | 52                         | 62        | 78        | 87        | 70                            | +                                 |

## Sample Analysis of Students' Writing Test

### Student 30

| Criteria \ Tests                         | Baseline Period 01<br>(A) |           |           | Mean                          | Treatment Period 01<br>(B) |           |           |           | Mean                          | Baseline Period 02<br>(A) |           |           | Mean                          | Treatment Period 02<br>(B) |           |           |           | Mean                          | Performance<br>Appraisal<br>(+/-) |
|--|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|-----------------------------------|
|  | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ |                                   |
| Content<br>(Cont.) /20                   | 8                         | 9         | 10        | 9                             | 8                          | 6         | 12        | 14        | 10                            | 7                         | 9         | 17        | 11                            | 7                          | 8         | 16        | 17        | 12                            | +                                 |
| Organisation<br>(Org.) /15               | 5                         | 7         | 12        | 8                             | 9                          | 10        | 11        | 10        | 10                            | 7                         | 10        | 13        | 10                            | 8                          | 11        | 13        | 11        | 11                            | +                                 |
| Vocabulary<br>(Voc.) /15                 | 8                         | 6         | 13        | 9                             | 6                          | 7         | 13        | 14        | 10                            | 5                         | 10        | 15        | 10                            | 9                          | 11        | 13        | 15        | 12                            | +                                 |
| Language Use<br>(LU) /20                 | 6                         | 9         | 9         | 8                             | 8                          | 9         | 11        | 12        | 10                            | 8                         | 11        | 14        | 11                            | 7                          | 9         | 13        | 14        | 11                            | +                                 |
| Spelling<br>(Orthography)<br>(Orth.) /15 | 5                         | 8         | 11        | 8                             | 5                          | 9         | 11        | 15        | 10                            | 7                         | 9         | 14        | 10                            | 8                          | 10        | 14        | 16        | 12                            | +                                 |
| Mechanics<br>(Mech.) /15                 | 3                         | 6         | 7         | 5                             | 6                          | 10        | 12        | 16        | 11                            | 9                         | 10        | 11        | 10                            | 10                         | 11        | 13        | 14        | 12                            | +                                 |
| Total Mark<br>/100                       | 35                        | 45        | 62        | 47                            | 42                         | 51        | 70        | 81        | 61                            | 43                        | 59        | 84        | 62                            | 49                         | 60        | 82        | 87        | 70                            | +                                 |

### Sample Analysis of Students' Writing Test

#### Student 31

| Criteria \ Tests                         | Baseline Period 01<br>(A) |           |           | Mean                          | Treatment Period 01<br>(B) |           |           |           | Mean                          | Baseline Period 02<br>(A) |           |           | Mean                          | Treatment Period 02<br>(B) |           |           |           | Mean                          | Performance<br>Appraisal<br>(+/-) |
|--|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|-----------------------------------|
|  | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ |                                   |
| Content<br>(Cont.) /20                   | 5                         | 9         | 13        | 9                             | 10                         | 11        | 13        | 14        | 12                            | 9                         | 11        | 13        | 11                            | 10                         | 12        | 14        | 16        | 13                            | +                                 |
| Organisation<br>(Org.) /15               | 8                         | 8         | 10        | 9                             | 7                          | 9         | 11        | 13        | 10                            | 5                         | 10        | 15        | 10                            | 7                          | 9         | 13        | 14        | 11                            | +                                 |
| Vocabulary<br>(Voc.) /15                 | 6                         | 9         | 12        | 9                             | 8                          | 9         | 11        | 12        | 10                            | 7                         | 10        | 13        | 10                            | 8                          | 9         | 15        | 16        | 12                            | +                                 |
| Language Use<br>(LU) /20                 | 7                         | 8         | 9         | 8                             | 5                          | 6         | 14        | 15        | 10                            | 6                         | 8         | 16        | 10                            | 9                          | 11        | 13        | 15        | 12                            | +                                 |
| Spelling<br>(Orthography)<br>(Orth.) /15 | 5                         | 7         | 12        | 8                             | 6                          | 7         | 13        | 14        | 10                            | 8                         | 10        | 15        | 11                            | 8                          | 13        | 13        | 18        | 13                            | +                                 |
| Mechanics<br>(Mech.) /15                 | 4                         | 6         | 14        | 8                             | 6                          | 9         | 11        | 14        | 10                            | 9                         | 10        | 11        | 10                            | 11                         | 12        | 14        | 15        | 13                            | +                                 |
| Total Mark<br>/100                       | 35                        | 47        | 70        | 51                            | 42                         | 51        | 73        | 82        | 62                            | 44                        | 59        | 83        | 62                            | 53                         | 66        | 82        | 94        | 74                            | +                                 |

## Sample Analysis of Students' Writing Test

### Student 32

| Criteria \ Tests                         | Baseline Period 01<br>(A) |           |           | Mean                          | Treatment Period 01<br>(B) |           |           |           | Mean                          | Baseline Period 02<br>(A) |           |           | Mean                          | Treatment Period 02<br>(B) |           |           |           | Mean                          | Performance<br>Appraisal<br>(+/-) |
|--|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|-----------------------------------|
|  | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ |                                   |
| Content<br>(Cont.) /20                   | 8                         | 9         | 10        | 9                             | 10                         | 11        | 13        | 14        | 12                            | 7                         | 10        | 13        | 10                            | 9                          | 10        | 12        | 13        | 11                            | +                                 |
| Organisation<br>(Org.) /15               | 8                         | 6         | 13        | 9                             | 6                          | 9         | 11        | 14        | 10                            | 5                         | 10        | 15        | 10                            | 8                          | 10        | 14        | 16        | 12                            | +                                 |
| Vocabulary<br>(Voc.) /15                 | 7                         | 8         | 12        | 9                             | 7                          | 9         | 11        | 13        | 10                            | 8                         | 11        | 12        | 11                            | 7                          | 9         | 13        | 14        | 11                            | +                                 |
| Language Use<br>(LU) /20                 | 5                         | 7         | 12        | 8                             | 5                          | 6         | 14        | 15        | 10                            | 6                         | 8         | 16        | 10                            | 8                          | 7         | 14        | 15        | 11                            | +                                 |
| Spelling<br>(Orthography)<br>(Orth.) /15 | 6                         | 9         | 12        | 9                             | 6                          | 7         | 13        | 14        | 10                            | 8                         | 9         | 13        | 10                            | 6                          | 12        | 12        | 18        | 12                            | +                                 |
| Mechanics<br>(Mech.) /15                 | 5                         | 6         | 7         | 6                             | 9                          | 10        | 11        | 10        | 10                            | 9                         | 11        | 13        | 11                            | 8                          | 9         | 15        | 16        | 12                            | +                                 |
| Total Mark<br>/100                       | 39                        | 45        | 66        | 50                            | 43                         | 52        | 73        | 80        | 62                            | 43                        | 59        | 82        | 62                            | 46                         | 57        | 80        | 92        | 69                            | +                                 |

## Sample Analysis of Students' Writing Test

### Student 33

| Tests<br>Criteria                        | Baseline Period 01<br>(A) |           |           | Mean                          | Treatment Period 01<br>(B) |           |           |           | Mean                          | Baseline Period 02<br>(A) |           |           | Mean                          | Treatment Period 02<br>(B) |           |           |           | Mean                          | Performance<br>Appraisal<br>(+/-) |
|--|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|-----------------------------------|
|  | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ |                                   |
| Content<br>(Cont.) /20                   | 8                         | 9         | 10        | 9                             | 7                          | 9         | 13        | 14        | 11                            | 7                         | 9         | 17        | 11                            | 10                         | 11        | 13        | 14        | 12                            | +                                 |
| Organisation<br>(Org.) /15               | 8                         | 6         | 13        | 9                             | 5                          | 6         | 14        | 15        | 10                            | 9                         | 10        | 11        | 10                            | 9                          | 10        | 12        | 13        | 11                            | +                                 |
| Vocabulary<br>(Voc.) /15                 | 9                         | 9         | 12        | 9                             | 8                          | 9         | 11        | 12        | 10                            | 8                         | 9         | 13        | 10                            | 8                          | 9         | 15        | 16        | 12                            | +                                 |
| Language Use<br>(LU) /20                 | 6                         | 8         | 10        | 8                             | 6                          | 7         | 13        | 14        | 10                            | 6                         | 8         | 16        | 10                            | 8                          | 11        | 13        | 11        | 11                            | +                                 |
| Spelling<br>(Orthography)<br>(Orth.) /15 | 7                         | 9         | 11        | 9                             | 8                          | 6         | 12        | 14        | 10                            | 7                         | 10        | 13        | 10                            | 9                          | 11        | 13        | 15        | 12                            | +                                 |
| Mechanics<br>(Mech.) /15                 | 4                         | 5         | 6         | 5                             | 5                          | 8         | 11        | 15        | 10                            | 5                         | 10        | 15        | 10                            | 8                          | 13        | 13        | 18        | 13                            | +                                 |
| Total Mark<br>/100                       | 42                        | 46        | 62        | 49                            | 39                         | 45        | 74        | 84        | 61                            | 42                        | 56        | 85        | 61                            | 52                         | 65        | 79        | 87        | 71                            | +                                 |

## Sample Analysis of Students' Writing Test

### Student 34

| Criteria \ Tests                         | Baseline Period 01<br>(A) |           |           | Mean                          | Treatment Period 01<br>(B) |           |           |           | Mean                          | Baseline Period 02<br>(A) |           |           | Mean                          | Treatment Period 02<br>(B) |           |           |           | Mean                          | Performance<br>Appraisal<br>(+/-) |
|--|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|-----------------------------------|
|  | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ |                                   |
| Content<br>(Cont.) /20                   | 8                         | 11        | 14        | 11                            | 10                         | 11        | 13        | 14        | 12                            | 6                         | 14        | 16        | 12                            | 8                          | 9         | 15        | 16        | 12                            | +                                 |
| Organisation<br>(Org.) /15               | 9                         | 10        | 11        | 10                            | 6                          | 10        | 12        | 16        | 11                            | 8                         | 9         | 13        | 10                            | 9                          | 11        | 13        | 15        | 12                            | +                                 |
| Vocabulary<br>(Voc.) /15                 | 6                         | 8         | 16        | 10                            | 8                          | 7         | 14        | 15        | 11                            | 7                         | 9         | 17        | 11                            | 6                          | 10        | 12        | 16        | 11                            | +                                 |
| Language Use<br>(LU) /20                 | 7                         | 10        | 13        | 10                            | 6                          | 9         | 11        | 14        | 10                            | 7                         | 10        | 13        | 10                            | 7                          | 8         | 16        | 17        | 12                            | +                                 |
| Spelling<br>(Orthography)<br>(Orth.) /15 | 8                         | 9         | 10        | 9                             | 9                          | 10        | 12        | 13        | 11                            | 8                         | 10        | 15        | 11                            | 9                          | 11        | 13        | 15        | 12                            | +                                 |
| Mechanics<br>(Mech.) /15                 | 7                         | 9         | 11        | 9                             | 8                          | 11        | 13        | 11        | 11                            | 6                         | 8         | 16        | 10                            | 10                         | 11        | 13        | 14        | 12                            | +                                 |
| Total Mark<br>/100                       | 45                        | 57        | 75        | 59                            | 47                         | 58        | 75        | 83        | 66                            | 42                        | 60        | 90        | 64                            | 49                         | 60        | 82        | 93        | 71                            | +                                 |

## Sample Analysis of Students' Writing Test

### Student 35

| Criteria \ Tests                         | Baseline Period 01<br>(A) |           |           | Mean                          | Treatment Period 01<br>(B) |           |           |           | Mean                          | Baseline Period 02<br>(A) |           |           | Mean                          | Treatment Period 02<br>(B) |           |           |           | Mean                          | Performance<br>Appraisal<br>(+/-) |
|--|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|---------------------------|-----------|-----------|-------------------------------|----------------------------|-----------|-----------|-----------|-------------------------------|-----------------------------------|
|  | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                 | Test<br>2 | Test<br>3 | $\bar{x} = \frac{\sum 3T}{3}$ | Test<br>1                  | Test<br>2 | Test<br>3 | Test<br>4 | $\bar{x} = \frac{\sum 3T}{3}$ |                                   |
| Content<br>(Cont.) /20                   | 7                         | 8         | 12        | 9                             | 10                         | 11        | 12        | 11        | 11                            | 5                         | 10        | 15        | 10                            | 9                          | 12        | 13        | 18        | 13                            | +                                 |
| Organisation<br>(Org.) /15               | 8                         | 6         | 13        | 9                             | 6                          | 9         | 11        | 14        | 10                            | 7                         | 9         | 14        | 10                            | 8                          | 9         | 15        | 16        | 12                            | +                                 |
| Vocabulary<br>(Voc.) /15                 | 6                         | 9         | 12        | 9                             | 5                          | 6         | 14        | 15        | 10                            | 8                         | 9         | 13        | 10                            | 10                         | 11        | 13        | 14        | 12                            | +                                 |
| Language Use<br>(LU) /20                 | 7                         | 9         | 11        | 9                             | 6                          | 7         | 13        | 14        | 10                            | 9                         | 10        | 11        | 10                            | 9                          | 12        | 13        | 18        | 13                            | +                                 |
| Spelling<br>(Orthography)<br>(Orth.) /15 | 3                         | 5         | 13        | 7                             | 8                          | 7         | 14        | 15        | 11                            | 7                         | 10        | 13        | 10                            | 11                         | 12        | 14        | 15        | 13                            | +                                 |
| Mechanics<br>(Mech.) /15                 | 5                         | 6         | 10        | 7                             | 9                          | 10        | 11        | 10        | 10                            | 9                         | 8         | 13        | 10                            | 10                         | 11        | 15        | 16        | 13                            | +                                 |
| Total Mark<br>/100                       | 36                        | 43        | 71        | 50                            | 44                         | 50        | 75        | 79        | 62                            | 45                        | 56        | 79        | 60                            | 57                         | 67        | 83        | 97        | 76                            | +                                 |



|         | 1 <sup>st</sup> Baseline Period (A) |      |      |    |       |       |        |     |      |    |       |       |        |     |      |    |       |       |
|---------|-------------------------------------|------|------|----|-------|-------|--------|-----|------|----|-------|-------|--------|-----|------|----|-------|-------|
|         | Test 1                              |      |      |    |       |       | Test 2 |     |      |    |       |       | Test 3 |     |      |    |       |       |
|         | Con                                 | Org. | Voc. | LU | Orth. | Mech. | Con    | Org | Voc. | LU | Orth. | Mech. | Con    | Org | Voc. | LU | Orth. | Mech. |
| Stdnt1  | 9                                   | 8    | 10   | 8  | 8     | 7     | 11     | 9   | 9    | 7  | 10    | 8     | 10     | 10  | 11   | 9  | 9     | 9     |
| Stdnt2  | 9                                   | 8    | 9    | 7  | 5     | 5     | 9      | 10  | 10   | 8  | 9     | 6     | 12     | 12  | 11   | 9  | 10    | 7     |
| Stdnt3  | 7                                   | 8    | 8    | 6  | 5     | 6     | 11     | 7   | 9    | 9  | 7     | 7     | 9      | 9   | 13   | 12 | 9     | 8     |
| Stdnt4  | 5                                   | 7    | 8    | 4  | 7     | 8     | 10     | 10  | 12   | 8  | 9     | 9     | 15     | 13  | 10   | 12 | 11    | 10    |
| Stdnt5  | 7                                   | 8    | 9    | 6  | 7     | 5     | 8      | 9   | 10   | 9  | 6     | 11    | 9      | 10  | 11   | 9  | 11    | 10    |
| Stdnt6  | 8                                   | 7    | 9    | 6  | 7     | 5     | 9      | 8   | 10   | 8  | 9     | 6     | 10     | 9   | 11   | 10 | 11    | 7     |
| Stdnt7  | 8                                   | 6    | 7    | 8  | 7     | 3     | 9      | 8   | 9    | 6  | 8     | 5     | 10     | 16  | 11   | 12 | 12    | 7     |
| Stdnt8  | 6                                   | 5    | 8    | 3  | 4     | 5     | 9      | 7   | 9    | 8  | 7     | 6     | 12     | 12  | 13   | 13 | 10    | 7     |
| Stdnt9  | 5                                   | 7    | 8    | 7  | 6     | 3     | 9      | 8   | 9    | 8  | 8     | 5     | 13     | 12  | 10   | 9  | 10    | 7     |
| Stdnt10 | 8                                   | 7    | 5    | 7  | 6     | 6     | 9      | 9   | 9    | 8  | 9     | 7     | 10     | 11  | 13   | 12 | 9     | 8     |
| Stdnt11 | 8                                   | 7    | 6    | 7  | 6     | 5     | 11     | 10  | 8    | 10 | 8     | 9     | 13     | 13  | 16   | 13 | 13    | 13    |
| Stdnt12 | 8                                   | 6    | 7    | 5  | 6     | 6     | 11     | 8   | 10   | 10 | 8     | 9     | 14     | 16  | 13   | 15 | 13    | 12    |
| Stdnt13 | 7                                   | 8    | 6    | 8  | 6     | 3     | 8      | 9   | 8    | 9  | 7     | 5     | 12     | 13  | 16   | 10 | 8     | 13    |
| Stdnt14 | 7                                   | 5    | 8    | 7  | 3     | 5     | 8      | 9   | 6    | 9  | 8     | 7     | 12     | 13  | 13   | 11 | 13    | 9     |
| Stdnt15 | 7                                   | 8    | 9    | 3  | 6     | 4     | 9      | 6   | 10   | 8  | 7     | 5     | 11     | 13  | 11   | 13 | 8     | 6     |
| Stdnt16 | 8                                   | 8    | 9    | 8  | 7     | 8     | 8      | 9   | 8    | 7  | 11    | 7     | 11     | 10  | 10   | 11 | 8     | 9     |
| Stdnt17 | 8                                   | 8    | 9    | 6  | 7     | 5     | 9      | 6   | 10   | 9  | 9     | 6     | 10     | 13  | 11   | 12 | 11    | 7     |
| Stdnt18 | 8                                   | 7    | 9    | 6  | 5     | 5     | 8      | 8   | 11   | 6  | 6     | 4     | 11     | 11  | 10   | 12 | 13    | 6     |
| Stdnt19 | 7                                   | 8    | 9    | 3  | 4     | 3     | 9      | 9   | 10   | 8  | 6     | 5     | 11     | 10  | 11   | 12 | 11    | 13    |
| Stdnt20 | 8                                   | 6    | 5    | 8  | 7     | 5     | 9      | 9   | 10   | 6  | 8     | 9     | 10     | 12  | 15   | 12 | 9     | 13    |
| Stdnt21 | 8                                   | 8    | 5    | 7  | 4     | 3     | 9      | 6   | 9    | 8  | 6     | 6     | 10     | 12  | 13   | 9  | 14    | 9     |
| Stdnt22 | 9                                   | 8    | 7    | 8  | 5     | 4     | 10     | 9   | 9    | 9  | 9     | 6     | 11     | 13  | 14   | 10 | 13    | 14    |
| Stdnt23 | 8                                   | 7    | 8    | 7  | 6     | 4     | 9      | 9   | 6    | 8  | 7     | 5     | 10     | 11  | 13   | 9  | 8     | 6     |
| Stdnt24 | 8                                   | 6    | 7    | 7  | 7     | 3     | 9      | 9   | 9    | 8  | 8     | 6     | 10     | 12  | 14   | 9  | 12    | 7     |
| Stdnt25 | 6                                   | 5    | 8    | 4  | 6     | 10    | 9      | 7   | 9    | 6  | 9     | 4     | 12     | 12  | 10   | 14 | 9     | 10    |
| Stdnt26 | 7                                   | 6    | 7    | 6  | 5     | 4     | 9      | 9   | 10   | 8  | 9     | 6     | 11     | 12  | 13   | 10 | 13    | 14    |
| Stdnt27 | 10                                  | 7    | 8    | 7  | 8     | 5     | 11     | 10  | 9    | 9  | 6     | 9     | 12     | 13  | 13   | 11 | 13    | 13    |
| Stdnt28 | 8                                   | 7    | 5    | 6  | 8     | 2     | 9      | 9   | 10   | 9  | 9     | 8     | 13     | 14  | 15   | 12 | 10    | 8     |
| Stdnt29 | 8                                   | 3    | 5    | 4  | 3     | 5     | 9      | 8   | 9    | 6  | 5     | 6     | 10     | 13  | 13   | 14 | 13    | 10    |
| Stdnt30 | 8                                   | 5    | 8    | 6  | 5     | 3     | 9      | 7   | 6    | 9  | 8     | 6     | 10     | 12  | 13   | 9  | 11    | 7     |
| Stdnt31 | 5                                   | 8    | 6    | 7  | 5     | 4     | 9      | 8   | 9    | 8  | 7     | 6     | 13     | 10  | 12   | 9  | 12    | 14    |
| Stdnt32 | 8                                   | 8    | 7    | 5  | 6     | 5     | 9      | 6   | 8    | 7  | 9     | 6     | 10     | 13  | 12   | 12 | 12    | 7     |
| Stdnt33 | 8                                   | 8    | 9    | 6  | 7     | 4     | 9      | 6   | 9    | 8  | 9     | 5     | 10     | 13  | 12   | 10 | 11    | 6     |
| Stdnt34 | 8                                   | 9    | 6    | 7  | 8     | 7     | 11     | 10  | 8    | 10 | 9     | 9     | 14     | 11  | 16   | 13 | 10    | 11    |
| Stdnt35 | 7                                   | 8    | 6    | 7  | 3     | 5     | 8      | 6   | 9    | 9  | 5     | 6     | 12     | 13  | 12   | 11 | 13    | 10    |



|          | 1st Treatment Period (B) |     |     |    |      |      |        |     |     |    |      |      |        |     |     |    |      |      |        |     |     |    |      |      |
|----------|--------------------------|-----|-----|----|------|------|--------|-----|-----|----|------|------|--------|-----|-----|----|------|------|--------|-----|-----|----|------|------|
|          | Test 1                   |     |     |    |      |      | Test 2 |     |     |    |      |      | Test 3 |     |     |    |      |      | Test 4 |     |     |    |      |      |
|          | Con                      | Org | Voc | LU | Orth | Mech | Con    | Org | Voc | LU | Orth | Mech | Con    | Org | Voc | LU | Orth | Mech | Con    | Org | Voc | LU | Orth | Mech |
| Stdnt1   | 11                       | 10  | 9   | 9  | 10   | 10   | 12     | 11  | 10  | 10 | 10   | 11   | 12     | 11  | 10  | 11 | 12   | 12   | 13     | 12  | 11  | 10 | 12   | 11   |
| Stdnt2   | 11                       | 9   | 10  | 8  | 9    | 7    | 10     | 12  | 11  | 9  | 9    | 10   | 12     | 11  | 12  | 11 | 10   | 10   | 11     | 12  | 11  | 12 | 12   | 13   |
| Stdnt3   | 10                       | 9   | 8   | 10 | 7    | 9    | 11     | 10  | 9   | 11 | 9    | 10   | 12     | 10  | 11  | 12 | 10   | 11   | 15     | 11  | 12  | 11 | 14   | 10   |
| Stdnt4   | 10                       | 9   | 10  | 8  | 10   | 7    | 11     | 10  | 11  | 9  | 10   | 12   | 13     | 11  | 11  | 11 | 11   | 12   | 14     | 14  | 12  | 12 | 13   | 13   |
| Stdnt5   | 9                        | 10  | 7   | 8  | 10   | 6    | 10     | 11  | 11  | 10 | 9    | 9    | 11     | 11  | 12  | 10 | 11   | 11   | 14     | 12  | 14  | 12 | 14   | 14   |
| Stdnt6   | 9                        | 7   | 8   | 10 | 6    | 7    | 10     | 9   | 10  | 9  | 9    | 9    | 10     | 11  | 10  | 10 | 11   | 11   | 11     | 13  | 12  | 11 | 14   | 13   |
| Stdnt7   | 10                       | 5   | 6   | 8  | 9    | 6    | 11     | 9   | 7   | 7  | 9    | 8    | 11     | 11  | 13  | 14 | 11   | 12   | 12     | 15  | 14  | 15 | 14   | 14   |
| Stdnt8   | 9                        | 8   | 7   | 6  | 8    | 6    | 10     | 9   | 9   | 7  | 9    | 8    | 11     | 10  | 11  | 13 | 6    | 12   | 10     | 12  | 13  | 14 | 13   | 14   |
| Stdnt9   | 6                        | 8   | 6   | 6  | 9    | 7    | 9      | 9   | 7   | 8  | 10   | 8    | 11     | 11  | 13  | 9  | 11   | 9    | 14     | 12  | 14  | 13 | 10   | 12   |
| Stdnt10  | 7                        | 9   | 6   | 7  | 6    | 9    | 8      | 10  | 8   | 10 | 7    | 11   | 16     | 12  | 12  | 11 | 13   | 13   | 17     | 13  | 14  | 10 | 14   | 15   |
| Stdnt11  | 9                        | 6   | 8   | 7  | 5    | 8    | 11     | 7   | 11  | 9  | 6    | 7    | 13     | 13  | 13  | 11 | 14   | 14   | 15     | 14  | 11  | 13 | 15   | 15   |
| Stdnt12  | 10                       | 8   | 9   | 6  | 7    | 5    | 11     | 7   | 10  | 9  | 9    | 9    | 13     | 14  | 12  | 11 | 11   | 11   | 14     | 15  | 13  | 14 | 13   | 15   |
| Stdnt13  | 7                        | 9   | 5   | 6  | 6    | 5    | 9      | 10  | 9   | 10 | 9    | 6    | 13     | 12  | 11  | 12 | 11   | 14   | 14     | 13  | 15  | 16 | 14   | 15   |
| Stdnt14  | 9                        | 8   | 9   | 6  | 5    | 7    | 10     | 6   | 10  | 7  | 6    | 9    | 12     | 12  | 11  | 13 | 14   | 11   | 13     | 14  | 10  | 14 | 15   | 13   |
| Stdnt15  | 5                        | 7   | 8   | 6  | 7    | 9    | 6      | 9   | 9   | 7  | 8    | 10   | 14     | 11  | 11  | 13 | 9    | 11   | 15     | 13  | 12  | 14 | 12   | 10   |
| Stdnt16  | 10                       | 11  | 9   | 6  | 10   | 9    | 11     | 10  | 10  | 8  | 9    | 10   | 11     | 12  | 11  | 11 | 13   | 11   | 12     | 11  | 10  | 12 | 12   | 10   |
| Stdnt17  | 10                       | 6   | 5   | 9  | 8    | 7    | 11     | 9   | 6   | 10 | 6    | 9    | 13     | 11  | 14  | 11 | 12   | 13   | 14     | 14  | 15  | 10 | 14   | 14   |
| Stdnt18  | 9                        | 11  | 10  | 6  | 8    | 10   | 10     | 10  | 9   | 8  | 10   | 9    | 11     | 12  | 13  | 11 | 10   | 11   | 10     | 11  | 12  | 12 | 12   | 12   |
| Stdnt19  | 8                        | 5   | 9   | 8  | 5    | 6    | 9      | 6   | 10  | 6  | 9    | 9    | 11     | 14  | 11  | 12 | 11   | 11   | 12     | 15  | 10  | 14 | 12   | 10   |
| Stdnt20  | 9                        | 7   | 5   | 8  | 6    | 10   | 10     | 9   | 6   | 6  | 10   | 11   | 12     | 11  | 14  | 12 | 12   | 11   | 13     | 13  | 15  | 14 | 16   | 12   |
| Stdnt21  | 9                        | 6   | 7   | 5  | 6    | 8    | 10     | 9   | 9   | 6  | 7    | 6    | 11     | 11  | 11  | 14 | 13   | 12   | 12     | 14  | 13  | 15 | 14   | 14   |
| Stdnt22  | 10                       | 6   | 5   | 9  | 8    | 6    | 11     | 9   | 6   | 10 | 6    | 10   | 13     | 11  | 14  | 11 | 12   | 12   | 14     | 14  | 15  | 10 | 14   | 16   |
| Stdnt23  | 6                        | 7   | 5   | 6  | 6    | 9    | 9      | 9   | 6   | 8  | 7    | 10   | 11     | 11  | 14  | 9  | 13   | 12   | 14     | 13  | 15  | 13 | 14   | 13   |
| Stdnt24  | 8                        | 6   | 6   | 5  | 9    | 8    | 6      | 7   | 10  | 6  | 10   | 9    | 12     | 13  | 12  | 14 | 11   | 11   | 14     | 14  | 16  | 15 | 10   | 12   |
| Stdnt25  | 6                        | 5   | 9   | 7  | 6    | 8    | 9      | 9   | 10  | 9  | 7    | 6    | 11     | 11  | 11  | 11 | 13   | 12   | 14     | 15  | 10  | 13 | 14   | 14   |
| Stdnt26  | 9                        | 7   | 8   | 6  | 9    | 6    | 11     | 9   | 9   | 7  | 10   | 10   | 13     | 11  | 11  | 13 | 11   | 12   | 15     | 13  | 12  | 14 | 10   | 18   |
| 8Stdnt27 | 7                        | 9   | 8   | 8  | 10   | 8    | 9      | 10  | 9   | 7  | 11   | 11   | 13     | 12  | 11  | 14 | 12   | 13   | 14     | 13  | 12  | 15 | 11   | 11   |
| Stdnt28  | 9                        | 5   | 7   | 8  | 7    | 9    | 11     | 6   | 9   | 6  | 9    | 10   | 13     | 14  | 13  | 12 | 11   | 11   | 15     | 15  | 14  | 14 | 13   | 10   |
| Stdnt29  | 6                        | 7   | 8   | 9  | 6    | 8    | 10     | 9   | 9   | 10 | 7    | 7    | 10     | 11  | 11  | 11 | 13   | 14   | 16     | 13  | 12  | 10 | 14   | 15   |
| Stdnt30  | 8                        | 9   | 6   | 8  | 5    | 6    | 6      | 10  | 7   | 6  | 10   | 7    | 12     | 11  | 13  | 11 | 11   | 12   | 14     | 10  | 14  | 12 | 15   | 16   |
| Stdnt31  | 10                       | 7   | 8   | 5  | 6    | 6    | 11     | 9   | 9   | 6  | 7    | 9    | 13     | 11  | 11  | 14 | 13   | 11   | 14     | 13  | 12  | 15 | 14   | 14   |
| Stdnt32  | 10                       | 6   | 7   | 5  | 6    | 9    | 11     | 9   | 9   | 6  | 7    | 10   | 13     | 11  | 11  | 14 | 13   | 11   | 14     | 14  | 13  | 15 | 14   | 10   |
| Stdnt33  | 7                        | 5   | 8   | 6  | 8    | 5    | 9      | 6   | 9   | 7  | 6    | 8    | 13     | 14  | 11  | 13 | 12   | 11   | 14     | 15  | 12  | 14 | 14   | 15   |
| Stdnt34  | 10                       | 6   | 8   | 6  | 9    | 8    | 11     | 10  | 7   | 9  | 10   | 11   | 13     | 12  | 14  | 11 | 12   | 13   | 14     | 16  | 15  | 14 | 13   | 11   |
| Stdnt35  | 10                       | 6   | 5   | 6  | 8    | 9    | 11     | 9   | 6   | 7  | 7    | 10   | 12     | 11  | 14  | 13 | 14   | 11   | 11     | 14  | 15  | 14 | 15   | 10   |



|         | 2 <sup>nd</sup> Baseline Period (A) |      |      |    |       |       |        |     |      |    |       |       |        |     |      |    |       |       |
|---------|-------------------------------------|------|------|----|-------|-------|--------|-----|------|----|-------|-------|--------|-----|------|----|-------|-------|
|         | Test 1                              |      |      |    |       |       | Test 2 |     |      |    |       |       | Test 3 |     |      |    |       |       |
|         | Con                                 | Org. | Voc. | LU | Orth. | Mech. | Con    | Org | Voc. | LU | Orth. | Mech. | Con    | Org | Voc. | LU | Orth. | Mech. |
| Stdnt1  | 12                                  | 12   | 9    | 9  | 11    | 12    | 11     | 10  | 10   | 11 | 11    | 10    | 10     | 11  | 11   | 10 | 11    | 11    |
| Stdnt2  | 10                                  | 8    | 10   | 9  | 11    | 8     | 12     | 10  | 11   | 11 | 13    | 10    | 14     | 15  | 12   | 13 | 12    | 12    |
| Stdnt3  | 10                                  | 8    | 9    | 7  | 11    | 9     | 11     | 11  | 12   | 11 | 10    | 11    | 12     | 14  | 12   | 15 | 12    | 13    |
| Stdnt4  | 11                                  | 8    | 10   | 9  | 10    | 9     | 12     | 12  | 13   | 10 | 11    | 12    | 13     | 10  | 13   | 11 | 12    | 13    |
| Stdnt5  | 10                                  | 8    | 9    | 5  | 11    | 7     | 11     | 12  | 10   | 11 | 12    | 11    | 12     | 13  | 14   | 14 | 13    | 15    |
| Stdnt6  | 11                                  | 8    | 7    | 9  | 8     | 9     | 12     | 11  | 9    | 10 | 9     | 11    | 13     | 14  | 17   | 11 | 13    | 13    |
| Stdnt7  | 9                                   | 8    | 6    | 7  | 5     | 10    | 10     | 9   | 12   | 9  | 10    | 11    | 15     | 13  | 18   | 17 | 15    | 12    |
| Stdnt8  | 6                                   | 8    | 9    | 5  | 7     | 10    | 8      | 11  | 10   | 10 | 9     | 11    | 16     | 13  | 14   | 15 | 14    | 12    |
| Stdnt9  | 8                                   | 9    | 7    | 10 | 7     | 7     | 11     | 10  | 9    | 11 | 10    | 9     | 13     | 11  | 14   | 12 | 16    | 14    |
| Stdnt10 | 8                                   | 7    | 8    | 9  | 8     | 6     | 10     | 9   | 10   | 11 | 11    | 12    | 18     | 17  | 15   | 13 | 14    | 18    |
| Stdnt11 | 10                                  | 9    | 6    | 11 | 8     | 7     | 12     | 10  | 12   | 9  | 9     | 10    | 14     | 11  | 18   | 14 | 13    | 13    |
| Stdnt12 | 9                                   | 10   | 6    | 9  | 8     | 9     | 11     | 11  | 12   | 10 | 9     | 10    | 13     | 12  | 18   | 15 | 13    | 11    |
| Stdnt13 | 8                                   | 9    | 10   | 8  | 7     | 8     | 11     | 10  | 11   | 8  | 10    | 9     | 13     | 11  | 12   | 13 | 13    | 13    |
| Stdnt14 | 10                                  | 8    | 7    | 9  | 8     | 6     | 11     | 10  | 9    | 11 | 11    | 8     | 12     | 15  | 14   | 13 | 13    | 16    |
| Stdnt15 | 6                                   | 5    | 9    | 8  | 10    | 8     | 8      | 10  | 10   | 9  | 11    | 11    | 16     | 15  | 15   | 13 | 12    | 13    |
| Stdnt16 | 10                                  | 9    | 8    | 9  | 10    | 9     | 11     | 11  | 10   | 10 | 8     | 10    | 12     | 10  | 12   | 11 | 12    | 11    |
| Stdnt17 | 10                                  | 7    | 8    | 9  | 7     | 5     | 11     | 9   | 10   | 11 | 14    | 10    | 12     | 14  | 15   | 13 | 15    | 15    |
| Stdnt18 | 10                                  | 10   | 11   | 9  | 10    | 8     | 9      | 8   | 9    | 11 | 9     | 10    | 11     | 12  | 13   | 13 | 11    | 12    |
| Stdnt19 | 8                                   | 5    | 7    | 7  | 9     | 7     | 11     | 10  | 10   | 9  | 11    | 9     | 14     | 15  | 13   | 17 | 13    | 14    |
| Stdnt20 | 10                                  | 7    | 5    | 8  | 7     | 6     | 11     | 10  | 10   | 9  | 9     | 8     | 12     | 13  | 15   | 13 | 17    | 12    |
| Stdnt21 | 8                                   | 6    | 9    | 5  | 7     | 8     | 10     | 8   | 11   | 10 | 9     | 9     | 15     | 16  | 13   | 15 | 17    | 13    |
| Stdnt22 | 10                                  | 6    | 7    | 8  | 9     | 5     | 11     | 8   | 9    | 10 | 11    | 10    | 12     | 16  | 17   | 15 | 13    | 15    |
| Stdnt23 | 10                                  | 7    | 6    | 5  | 6     | 8     | 11     | 6   | 14   | 10 | 8     | 9     | 12     | 14  | 16   | 15 | 16    | 13    |
| Stdnt24 | 9                                   | 8    | 9    | 7  | 7     | 6     | 10     | 9   | 11   | 10 | 9     | 8     | 11     | 13  | 13   | 13 | 17    | 16    |
| Stdnt25 | 5                                   | 9    | 8    | 8  | 9     | 7     | 10     | 8   | 11   | 9  | 10    | 10    | 15     | 16  | 14   | 13 | 11    | 13    |
| Stdnt26 | 7                                   | 9    | 11   | 5  | 6     | 8     | 9      | 10  | 12   | 10 | 8     | 9     | 17     | 11  | 13   | 15 | 16    | 13    |
| Stdnt27 | 9                                   | 6    | 7    | 9  | 5     | 9     | 10     | 8   | 9    | 10 | 10    | 11    | 15     | 16  | 14   | 11 | 15    | 13    |
| Stdnt28 | 10                                  | 6    | 7    | 9  | 7     | 8     | 11     | 8   | 9    | 10 | 9     | 9     | 12     | 16  | 14   | 11 | 14    | 13    |
| Stdnt29 | 8                                   | 7    | 8    | 5  | 9     | 7     | 10     | 9   | 11   | 10 | 10    | 9     | 15     | 17  | 14   | 15 | 10    | 14    |
| Stdnt30 | 7                                   | 7    | 5    | 8  | 7     | 9     | 9      | 10  | 10   | 11 | 9     | 10    | 17     | 13  | 15   | 14 | 14    | 11    |
| Stdnt31 | 9                                   | 5    | 7    | 6  | 8     | 9     | 11     | 10  | 10   | 8  | 10    | 10    | 13     | 15  | 13   | 16 | 15    | 11    |
| Stdnt32 | 7                                   | 5    | 8    | 6  | 8     | 9     | 10     | 10  | 11   | 8  | 9     | 11    | 13     | 15  | 12   | 16 | 13    | 13    |
| Stdnt33 | 7                                   | 9    | 8    | 6  | 7     | 5     | 9      | 10  | 9    | 8  | 10    | 10    | 17     | 11  | 13   | 16 | 13    | 15    |
| Stdnt34 | 6                                   | 8    | 7    | 7  | 8     | 6     | 14     | 9   | 9    | 10 | 10    | 8     | 16     | 13  | 17   | 13 | 15    | 16    |
| Stdnt35 | 5                                   | 7    | 8    | 9  | 7     | 9     | 10     | 9   | 9    | 10 | 10    | 8     | 15     | 14  | 13   | 11 | 13    | 13    |



|         | 2 <sup>nd</sup> Treatment Period (B) |     |     |    |       |      |        |     |     |    |       |      |        |     |     |    |       |      |        |     |      |    |       |      |
|---------|--------------------------------------|-----|-----|----|-------|------|--------|-----|-----|----|-------|------|--------|-----|-----|----|-------|------|--------|-----|------|----|-------|------|
|         | Test 1                               |     |     |    |       |      | Test 2 |     |     |    |       |      | Test 3 |     |     |    |       |      | Test 4 |     |      |    |       |      |
|         | Con                                  | Org | Voc | LU | Orth. | Mech | Con    | Org | Voc | LU | Orth. | Mech | Con    | Org | Voc | LU | Orth. | Mech | Con    | Org | Voc. | LU | Orth. | Mech |
| Stdnt1  | 11                                   | 11  | 10  | 10 | 11    | 10   | 12     | 12  | 12  | 11 | 12    | 12   | 12     | 13  | 13  | 11 | 12    | 13   | 13     | 12  | 13   | 12 | 13    | 13   |
| Stdnt2  | 12                                   | 10  | 11  | 9  | 11    | 8    | 11     | 12  | 12  | 14 | 13    | 14   | 13     | 12  | 13  | 14 | 12    | 12   | 12     | 14  | 12   | 15 | 12    | 14   |
| Stdnt3  | 9                                    | 8   | 10  | 10 | 11    | 6    | 11     | 10  | 12  | 11 | 12    | 11   | 12     | 11  | 13  | 12 | 12    | 12   | 12     | 15  | 13   | 15 | 13    | 15   |
| Stdnt4  | 11                                   | 11  | 10  | 11 | 10    | 9    | 12     | 12  | 11  | 12 | 13    | 13   | 14     | 13  | 12  | 14 | 14    | 14   | 15     | 12  | 11   | 15 | 15    | 16   |
| Stdnt5  | 11                                   | 9   | 8   | 7  | 10    | 6    | 12     | 10  | 12  | 11 | 11    | 12   | 12     | 11  | 13  | 12 | 13    | 14   | 13     | 14  | 15   | 14 | 14    | 16   |
| Stdnt6  | 10                                   | 9   | 7   | 8  | 6     | 9    | 11     | 10  | 9   | 11 | 12    | 11   | 13     | 12  | 13  | 11 | 12    | 13   | 13     | 13  | 14   | 13 | 12    | 15   |
| Stdnt7  | 9                                    | 8   | 7   | 9  | 8     | 10   | 10     | 7   | 10  | 11 | 10    | 11   | 12     | 14  | 14  | 13 | 14    | 13   | 13     | 15  | 17   | 15 | 16    | 14   |
| Stdnt8  | 9                                    | 8   | 9   | 9  | 6     | 7    | 10     | 7   | 11  | 10 | 12    | 10   | 12     | 14  | 13  | 12 | 12    | 14   | 13     | 15  | 15   | 13 | 18    | 17   |
| Stdnt9  | 10                                   | 6   | 7   | 10 | 10    | 8    | 11     | 12  | 10  | 11 | 12    | 7    | 13     | 12  | 14  | 12 | 14    | 14   | 14     | 18  | 17   | 11 | 16    | 15   |
| Stdnt10 | 8                                    | 7   | 10  | 10 | 7     | 6    | 9      | 10  | 11  | 11 | 8     | 12   | 15     | 14  | 12  | 13 | 16    | 12   | 16     | 17  | 11   | 14 | 17    | 18   |
| Stdnt11 | 8                                    | 6   | 10  | 8  | 9     | 6    | 10     | 10  | 11  | 10 | 10    | 12   | 10     | 10  | 11  | 10 | 10    | 12   | 12     | 12  | 14   | 14 | 12    | 12   |
| Stdnt12 | 6                                    | 9   | 8   | 10 | 7     | 7    | 10     | 11  | 9   | 11 | 8     | 9    | 12     | 13  | 15  | 13 | 15    | 13   | 13     | 15  | 16   | 14 | 16    | 14   |
| Stdnt13 | 9                                    | 8   | 7   | 9  | 9     | 8    | 11     | 9   | 10  | 12 | 11    | 10   | 13     | 15  | 14  | 13 | 13    | 14   | 15     | 16  | 17   | 18 | 15    | 16   |
| Stdnt14 | 10                                   | 8   | 6   | 9  | 8     | 7    | 11     | 10  | 10  | 11 | 9     | 8    | 13     | 14  | 12  | 13 | 15    | 16   | 14     | 16  | 16   | 15 | 16    | 17   |
| Stdnt15 | 6                                    | 9   | 10  | 8  | 9     | 7    | 12     | 10  | 11  | 6  | 11    | 10   | 12     | 12  | 12  | 12 | 13    | 14   | 18     | 13  | 11   | 14 | 15    | 17   |
| Stdnt16 | 10                                   | 11  | 10  | 5  | 11    | 10   | 11     | 13  | 9   | 10 | 10    | 10   | 11     | 10  | 12  | 12 | 11    | 12   | 12     | 10  | 13   | 13 | 12    | 11   |
| Stdnt17 | 7                                    | 8   | 6   | 8  | 10    | 9    | 9      | 9   | 12  | 7  | 12    | 12   | 13     | 15  | 12  | 14 | 14    | 13   | 14     | 16  | 18   | 15 | 16    | 18   |
| Stdnt18 | 10                                   | 9   | 11  | 13 | 12    | 13   | 13     | 10  | 12  | 12 | 11    | 12   | 14     | 13  | 12  | 14 | 12    | 13   | 15     | 12  | 13   | 13 | 13    | 14   |
| Stdnt19 | 10                                   | 8   | 7   | 10 | 8     | 6    | 12     | 11  | 8   | 11 | 13    | 10   | 10     | 13  | 16  | 13 | 13    | 12   | 16     | 11  | 17   | 14 | 18    | 16   |
| Stdnt20 | 9                                    | 10  | 8   | 6  | 9     | 7    | 10     | 11  | 7   | 12 | 11    | 8    | 12     | 11  | 14  | 12 | 13    | 16   | 13     | 14  | 15   | 18 | 15    | 17   |
| Stdnt21 | 8                                    | 9   | 6   | 10 | 7     | 9    | 9      | 11  | 12  | 11 | 8     | 11   | 15     | 13  | 12  | 15 | 16    | 13   | 16     | 15  | 18   | 16 | 17    | 15   |
| Stdnt22 | 6                                    | 8   | 9   | 8  | 7     | 7    | 10     | 9   | 11  | 7  | 8     | 9    | 12     | 15  | 13  | 14 | 16    | 13   | 16     | 16  | 15   | 15 | 17    | 14   |
| Stdnt23 | 10                                   | 8   | 9   | 10 | 9     | 11   | 12     | 11  | 10  | 11 | 12    | 12   | 14     | 13  | 12  | 13 | 13    | 14   | 16     | 11  | 13   | 14 | 18    | 15   |
| Stdnt24 | 7                                    | 8   | 10  | 9  | 7     | 8    | 9      | 7   | 11  | 10 | 8     | 7    | 13     | 14  | 12  | 12 | 16    | 14   | 14     | 15  | 11   | 13 | 17    | 15   |
| Stdnt25 | 8                                    | 7   | 8   | 9  | 11    | 6    | 10     | 8   | 9   | 11 | 12    | 12   | 10     | 6   | 15  | 13 | 14    | 12   | 16     | 17  | 16   | 15 | 15    | 18   |
| Stdnt26 | 8                                    | 10  | 7   | 7  | 8     | 6    | 11     | 11  | 8   | 9  | 10    | 12   | 13     | 12  | 16  | 13 | 14    | 12   | 11     | 11  | 17   | 14 | 16    | 18   |
| Stdnt27 | 11                                   | 6   | 10  | 8  | 9     | 9    | 12     | 10  | 11  | 9  | 12    | 11   | 10     | 12  | 13  | 15 | 13    | 13   | 15     | 16  | 14   | 16 | 18    | 15   |
| Stdnt28 | 10                                   | 7   | 8   | 8  | 7     | 9    | 11     | 10  | 10  | 13 | 8     | 12   | 13     | 14  | 14  | 13 | 16    | 14   | 14     | 17  | 16   | 18 | 17    | 15   |
| Stdnt29 | 8                                    | 9   | 9   | 7  | 10    | 9    | 10     | 10  | 11  | 9  | 11    | 11   | 14     | 12  | 13  | 13 | 13    | 13   | 16     | 13  | 15   | 14 | 14    | 15   |
| Stdnt30 | 7                                    | 8   | 9   | 7  | 8     | 10   | 8      | 11  | 11  | 9  | 10    | 11   | 16     | 13  | 13  | 13 | 14    | 13   | 17     | 11  | 15   | 14 | 16    | 14   |
| Stdnt31 | 10                                   | 7   | 8   | 9  | 8     | 11   | 12     | 9   | 9   | 11 | 13    | 12   | 14     | 13  | 15  | 13 | 13    | 14   | 16     | 14  | 16   | 15 | 18    | 15   |
| Stdnt32 | 9                                    | 8   | 7   | 8  | 6     | 8    | 10     | 10  | 9   | 7  | 12    | 9    | 12     | 14  | 13  | 14 | 12    | 15   | 13     | 16  | 14   | 15 | 18    | 16   |
| Stdnt33 | 10                                   | 9   | 8   | 8  | 9     | 8    | 11     | 10  | 9   | 11 | 11    | 13   | 13     | 12  | 15  | 13 | 13    | 13   | 14     | 13  | 16   | 11 | 15    | 18   |
| Stdnt34 | 8                                    | 9   | 6   | 7  | 9     | 10   | 9      | 11  | 10  | 8  | 11    | 11   | 15     | 13  | 12  | 16 | 13    | 13   | 16     | 15  | 16   | 17 | 15    | 14   |
| Stdnt35 | 9                                    | 8   | 10  | 9  | 11    | 10   | 12     | 9   | 11  | 12 | 12    | 11   | 13     | 15  | 13  | 13 | 14    | 15   | 18     | 16  | 14   | 18 | 15    | 16   |



|         | Baseline Period 01<br>(A) |     |     |    |       |      | Treatment Period 01<br>(B) |     |     |    |       |       | Baseline Period 02<br>(A) |     |     |    |       |      | Treatment Period 02<br>(B) |     |     |    |       |      |
|---------|---------------------------|-----|-----|----|-------|------|----------------------------|-----|-----|----|-------|-------|---------------------------|-----|-----|----|-------|------|----------------------------|-----|-----|----|-------|------|
|         | Con                       | Org | Voc | LU | Orth. | Mech | Con                        | Org | Voc | LU | Orth. | Mech. | Con                       | Org | Voc | LU | Orth. | Mech | Con                        | Org | Voc | LU | Orth. | Mech |
| Stdnt1  | 10                        | 9   | 10  | 8  | 9     | 8    | 12                         | 11  | 10  | 10 | 11    | 11    | 11                        | 11  | 10  | 10 | 11    | 11   | 12                         | 12  | 12  | 11 | 12    | 12   |
| Stdnt2  | 10                        | 10  | 10  | 8  | 8     | 6    | 11                         | 11  | 11  | 10 | 10    | 10    | 12                        | 11  | 11  | 11 | 12    | 10   | 12                         | 12  | 12  | 13 | 12    | 12   |
| Stdnt3  | 9                         | 8   | 10  | 9  | 7     | 7    | 12                         | 10  | 10  | 11 | 10    | 10    | 11                        | 11  | 11  | 11 | 11    | 11   | 11                         | 11  | 12  | 12 | 12    | 11   |
| Stdnt4  | 10                        | 10  | 10  | 8  | 9     | 9    | 12                         | 11  | 11  | 10 | 11    | 11    | 12                        | 10  | 12  | 10 | 11    | 11   | 13                         | 12  | 11  | 13 | 13    | 13   |
| Stdnt5  | 8                         | 9   | 10  | 8  | 8     | 9    | 11                         | 11  | 11  | 10 | 11    | 10    | 11                        | 11  | 11  | 10 | 12    | 11   | 12                         | 11  | 12  | 11 | 12    | 12   |
| Stdnt6  | 9                         | 8   | 10  | 8  | 9     | 6    | 10                         | 10  | 10  | 10 | 10    | 10    | 12                        | 11  | 11  | 10 | 10    | 11   | 12                         | 11  | 11  | 11 | 12    | 12   |
| Stdnt7  | 9                         | 10  | 9   | 9  | 9     | 5    | 11                         | 10  | 10  | 11 | 10    | 10    | 11                        | 10  | 12  | 11 | 10    | 11   | 11                         | 11  | 12  | 12 | 12    | 12   |
| Stdnt8  | 9                         | 8   | 10  | 8  | 7     | 6    | 10                         | 10  | 10  | 10 | 9     | 10    | 10                        | 11  | 11  | 10 | 10    | 11   | 11                         | 11  | 12  | 11 | 12    | 12   |
| Stdnt9  | 9                         | 9   | 9   | 8  | 8     | 5    | 10                         | 10  | 10  | 9  | 10    | 9     | 11                        | 10  | 10  | 11 | 11    | 10   | 12                         | 12  | 12  | 11 | 13    | 11   |
| Stdnt10 | 9                         | 9   | 9   | 9  | 8     | 7    | 12                         | 11  | 10  | 10 | 10    | 12    | 12                        | 12  | 11  | 11 | 11    | 12   | 12                         | 12  | 11  | 12 | 12    | 12   |
| Stdnt11 | 11                        | 10  | 10  | 10 | 9     | 9    | 12                         | 10  | 11  | 10 | 10    | 11    | 12                        | 10  | 12  | 10 | 10    | 10   | 11                         | 11  | 12  | 12 | 11    | 12   |
| Stdnt12 | 11                        | 10  | 10  | 10 | 9     | 9    | 12                         | 11  | 11  | 10 | 10    | 10    | 11                        | 11  | 12  | 11 | 10    | 10   | 11                         | 12  | 12  | 12 | 12    | 11   |
| Stdnt13 | 9                         | 10  | 10  | 9  | 7     | 7    | 11                         | 11  | 10  | 11 | 10    | 10    | 11                        | 10  | 11  | 10 | 10    | 10   | 12                         | 12  | 12  | 13 | 12    | 12   |
| Stdnt14 | 9                         | 9   | 9   | 9  | 8     | 7    | 11                         | 10  | 10  | 10 | 10    | 10    | 11                        | 11  | 10  | 11 | 11    | 10   | 12                         | 12  | 11  | 12 | 12    | 12   |
| Stdnt15 | 9                         | 9   | 10  | 8  | 7     | 5    | 10                         | 10  | 10  | 10 | 9     | 10    | 10                        | 10  | 11  | 10 | 11    | 11   | 12                         | 11  | 11  | 10 | 12    | 12   |
| Stdnt16 | 9                         | 9   | 9   | 9  | 9     | 8    | 11                         | 11  | 10  | 9  | 11    | 10    | 11                        | 10  | 10  | 10 | 10    | 10   | 11                         | 11  | 11  | 10 | 11    | 11   |
| Stdnt17 | 9                         | 9   | 10  | 9  | 9     | 6    | 12                         | 10  | 10  | 10 | 10    | 11    | 11                        | 10  | 11  | 11 | 12    | 10   | 11                         | 12  | 12  | 11 | 13    | 12   |
| Stdnt18 | 9                         | 9   | 10  | 8  | 8     | 5    | 10                         | 11  | 11  | 9  | 10    | 11    | 10                        | 10  | 11  | 11 | 10    | 10   | 13                         | 11  | 12  | 13 | 12    | 13   |
| Stdnt19 | 9                         | 9   | 10  | 8  | 7     | 7    | 10                         | 10  | 10  | 10 | 10    | 10    | 11                        | 10  | 10  | 11 | 11    | 10   | 13                         | 11  | 12  | 12 | 13    | 11   |
| Stdnt20 | 9                         | 9   | 10  | 9  | 8     | 9    | 11                         | 10  | 10  | 10 | 11    | 11    | 11                        | 10  | 10  | 10 | 11    | 10   | 11                         | 12  | 11  | 12 | 12    | 12   |
| Stdnt21 | 9                         | 9   | 9   | 8  | 8     | 6    | 11                         | 10  | 10  | 10 | 10    | 10    | 11                        | 10  | 11  | 10 | 11    | 10   | 12                         | 12  | 12  | 13 | 12    | 12   |
| Stdnt22 | 10                        | 10  | 10  | 9  | 9     | 8    | 12                         | 10  | 10  | 10 | 10    | 11    | 11                        | 10  | 11  | 11 | 11    | 10   | 11                         | 12  | 12  | 11 | 12    | 11   |
| Stdnt23 | 9                         | 9   | 9   | 8  | 7     | 5    | 10                         | 10  | 10  | 9  | 10    | 11    | 11                        | 10  | 12  | 10 | 10    | 10   | 13                         | 11  | 11  | 12 | 13    | 13   |
| Stdnt24 | 9                         | 9   | 10  | 8  | 9     | 5    | 10                         | 10  | 11  | 10 | 10    | 10    | 10                        | 10  | 11  | 10 | 11    | 10   | 11                         | 11  | 11  | 11 | 12    | 11   |
| Stdnt25 | 9                         | 8   | 9   | 8  | 8     | 5    | 10                         | 10  | 10  | 10 | 10    | 10    | 10                        | 10  | 11  | 10 | 10    | 10   | 12                         | 12  | 12  | 12 | 13    | 12   |
| Stdnt26 | 9                         | 9   | 10  | 8  | 9     | 8    | 12                         | 10  | 10  | 10 | 10    | 11    | 11                        | 10  | 12  | 10 | 10    | 10   | 11                         | 11  | 12  | 11 | 12    | 12   |
| Stdnt27 | 11                        | 10  | 10  | 9  | 9     | 9    | 11                         | 11  | 10  | 11 | 11    | 11    | 11                        | 10  | 10  | 10 | 10    | 11   | 13                         | 11  | 12  | 12 | 13    | 12   |
| Stdnt28 | 10                        | 10  | 10  | 9  | 9     | 6    | 12                         | 10  | 11  | 10 | 10    | 10    | 11                        | 10  | 10  | 10 | 10    | 10   | 12                         | 12  | 12  | 13 | 12    | 13   |
| Stdnt29 | 9                         | 8   | 9   | 8  | 7     | 7    | 11                         | 10  | 10  | 10 | 10    | 11    | 11                        | 11  | 11  | 10 | 10    | 10   | 12                         | 11  | 12  | 11 | 12    | 12   |
| Stdnt30 | 9                         | 8   | 9   | 8  | 8     | 5    | 10                         | 10  | 10  | 10 | 10    | 11    | 11                        | 10  | 10  | 11 | 10    | 10   | 12                         | 11  | 12  | 11 | 12    | 12   |
| Stdnt31 | 9                         | 9   | 9   | 8  | 8     | 8    | 12                         | 10  | 10  | 10 | 10    | 10    | 11                        | 10  | 10  | 10 | 11    | 10   | 13                         | 11  | 12  | 12 | 13    | 13   |
| Stdnt32 | 9                         | 9   | 9   | 8  | 9     | 6    | 12                         | 10  | 10  | 10 | 10    | 10    | 10                        | 10  | 11  | 10 | 10    | 11   | 11                         | 12  | 11  | 11 | 12    | 12   |
| Stdnt33 | 9                         | 9   | 9   | 8  | 9     | 5    | 11                         | 10  | 10  | 10 | 10    | 10    | 11                        | 10  | 10  | 10 | 10    | 10   | 12                         | 11  | 12  | 11 | 12    | 13   |
| Stdnt34 | 11                        | 10  | 10  | 10 | 9     | 9    | 12                         | 11  | 11  | 10 | 11    | 11    | 12                        | 10  | 11  | 10 | 11    | 10   | 12                         | 12  | 11  | 12 | 12    | 12   |
| Stdnt35 | 9                         | 9   | 9   | 9  | 7     | 7    | 11                         | 10  | 10  | 10 | 11    | 10    | 10                        | 10  | 10  | 10 | 10    | 10   | 13                         | 12  | 12  | 13 | 13    | 13   |

## Appendix J

### Post-Questionnaire with Students

Dear students,

Here we conclude our journey of investigation upon our experience with MALL. In continuity and for fulfillment of the research tradition, this questionnaire seeks to summon your HONEST perceptions, Attitudes and the know-hows. Otherwise, what mobile technologies could have marked on your self-editing skills in particular and your academic writing in general.

#### Mobile-Based Self-Editing

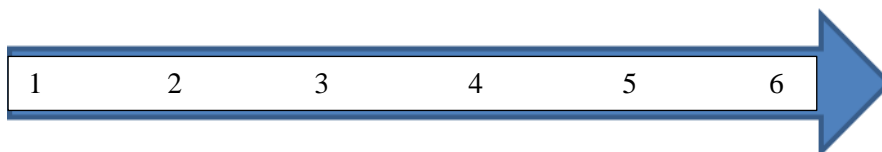
---

Decide your stand from the following statements by ticking the right option.

**(Strongly agree/ Agree/ Uncertain/ Disagree/ strongly disagree)**

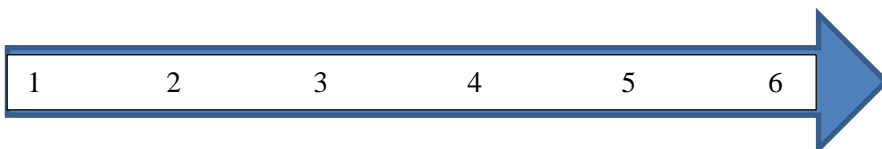
1. I can properly spell words in my writing.
2. I can adhere a proper punctuation in my writing.
3. I am aware of the capitalization rules while writing.
4. I can identify the parts of speech in my sentences.
5. I have no problem with grammar when writing.
6. I can properly write one sentence with two or more ideas.
7. I can identify the type of my sentences (simple, complex, compound, and compound-complex).
8. I am aware of the resources/aides that my mobile provide to revise my writing.
9. Checking my errors is easy to practice on my mobile device.
10. On the scales below, mark the extent of your reliance on the mobile resources that you learned along the academic season.

|   |   |   |   |   |   |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|



11. On the scale below, mark the extent of how much efficient were those mobile resources in improving your editing skills.

|   |   |   |   |   |   |
|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|

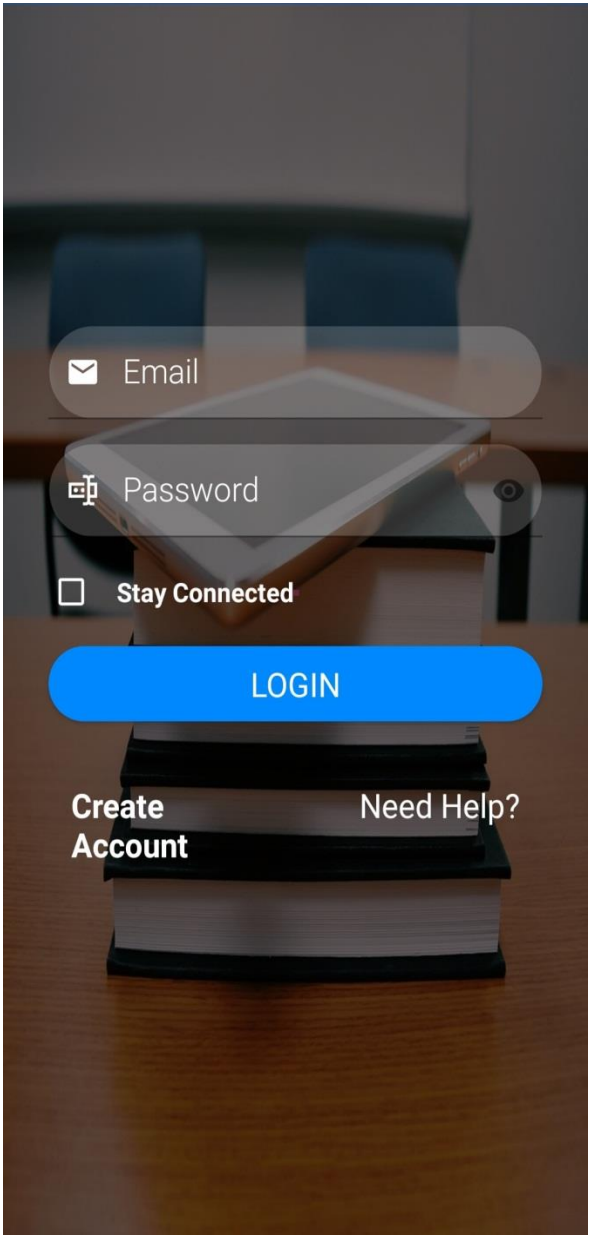


**Thank you so much for your assistance :)**

Appendices K

iWRight Go (iWG)Application





## Add Room

Sentence Patterns

D

12

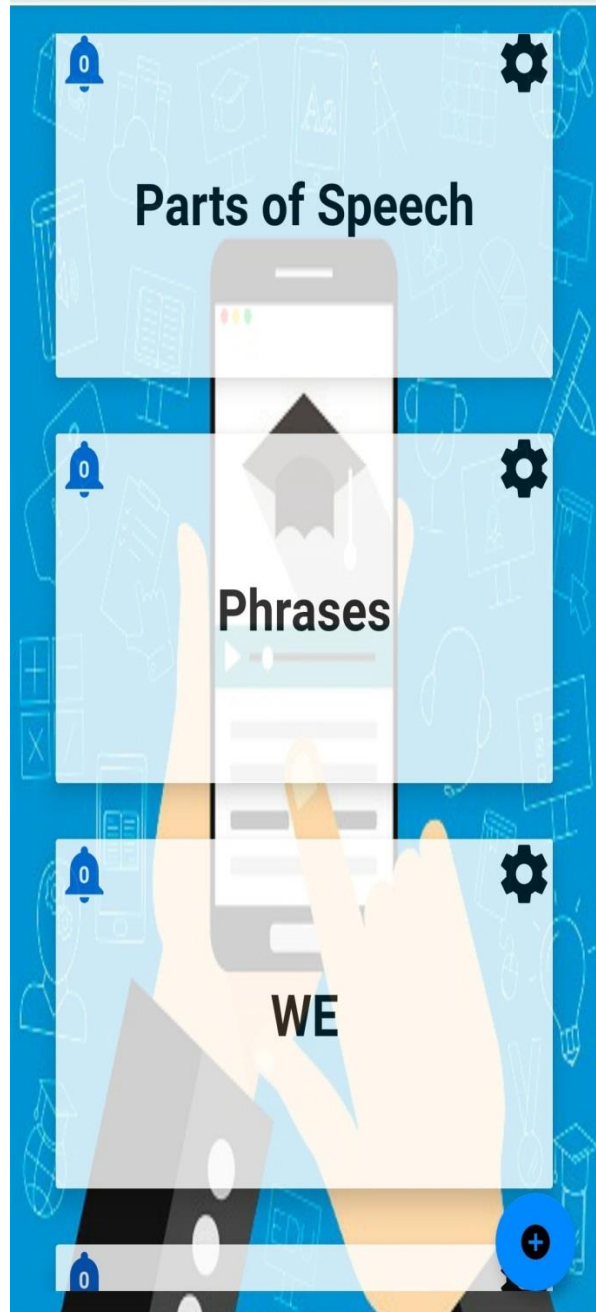
Writing

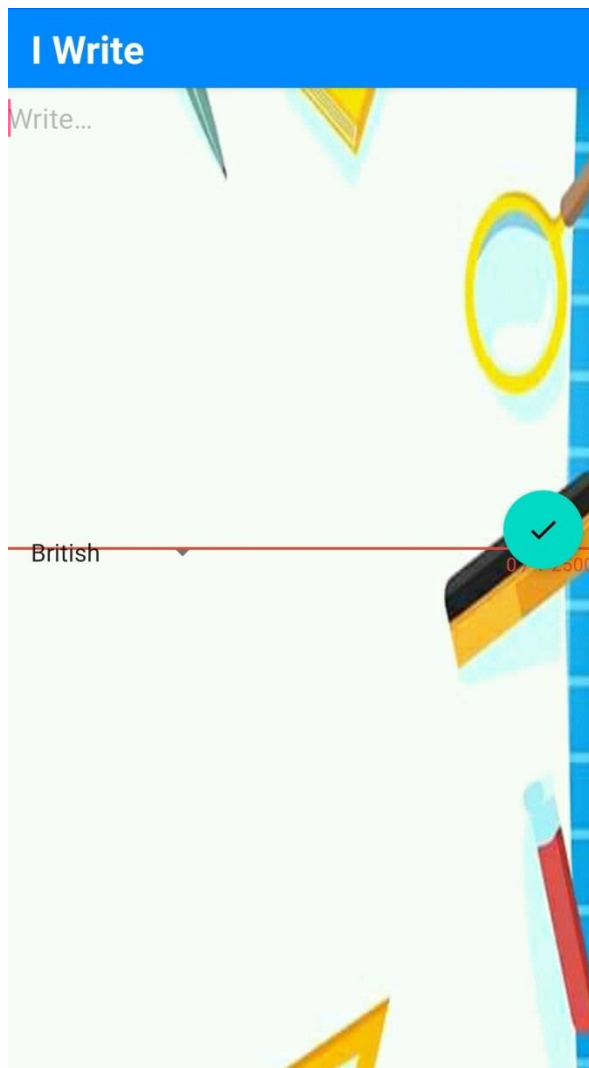
**CREATE**

ID: f21b



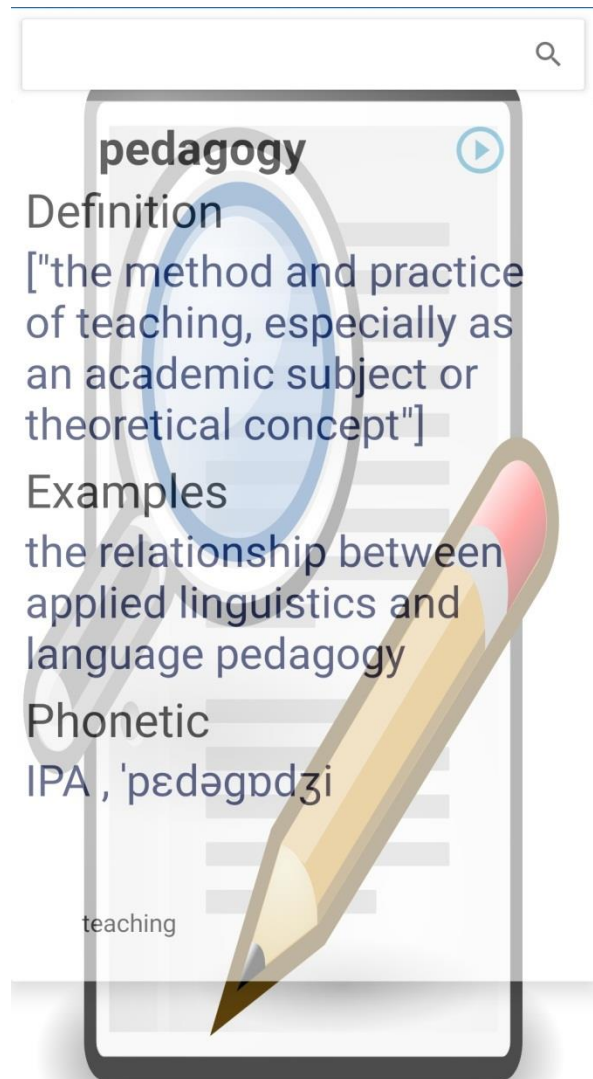
Home





✓  
**New Writing**

Translate



# About

## About the App and Author:

iWRight Go is designed after conducting couple of studies about the ways students prefer to accomplish their writing classes in general and meet their preference of self reviewing their written compositions in particular. Ergo, this App regards the self-directed instruction where the learner is an active participant in learning the writing basics but by no means excludes guidance of educators.

### Naming Concept:

i: Represents the learner's self and autonomy. Written in lowercase to refer to the learning process that is eternally growing.

WRight: to be read WRITE or RIGHT. This is to say "Write Right!". Besides, the word WRIGHT means a maker or a builder of something, a process that a learner goes through.

Go: refers to its availability on the go.

***After years of experience in teaching Academic Writing to EFL university students, the PhD researcher in Applied Linguistics and TEFL, Mr. Ahmed YALA, had assimilated the psycho pedagogical entries derived from his empirical investigations in the field with his students' tendency of autonomous learning.***

***To this end, the concept of the App espouses between the sentence writing principles and the students' ability and willingness to self edit their own compositions.***

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## Author's Contact:

**Email** : yala.ahmed@gmail.com  
**Setif, Algeria**

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## Outlook & Contents :

**privacy- iWriting Class** : a virtual platform where the teacher and students can share any sort of files or links to extend their writing classes outside the formal classroom.

**2- iSentence Writing** : a further source of understanding that encompasses all the lessons associated with sentence writing in English.. Those lessons are namely related to grammar, capitalization, punctuation, style, spelling of words (Orthography) and vocabulary. The iSentence Writing is a link to Walden University Writing Center that is found a good fit to cover all the necessary components of writing.

Retrieved from:

<https://academicguides.waldenu.edu/writingcenter/grammar/sentencestructure>

**3- iWrite page** : here is a space for writing and self editing. It is worth mentioning that, unlike the common checkers, this page SOLELY hints the errors in writing without correcting them. This is an endeavor to keep the students' challenge to identify the type of errors she/he makes and edit them by themselves.

**4- iWordfinder** : a simplified wordfinder dictionary that helps the student to check out the meaning and the spelling of words. Consequently, this may aid in widening students knowledge of vocabulary and the proper way of using it.

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## ملخص

يسعى هذا البحث إلى إظهار نجاعة التكنولوجيات المحمولة (MALL) و فائدتها لتعلم اللغة الانجليزية كلغة اجنبية. الهدف من هذا الاستعلام هو تحديد فعالية تعلم اللغة بمساعدة هذه الاجهزة في تعزيز مهارة المراجعة الذاتية للأخطاء عند كتابة الجمل. تم العثور على منهجية البحث الإجرائي على عينة واحدة لتعزيز البحث في نتائج تحقيقات المرحلة الأولية. تم طرح مجتمع البحث من قسم اللغة الإنجليزية وآدابها في جامعة سطيف 2 ، حيث كان نموذج العينة عبارة عن مجموعة من خمسة وثلاثين (35) طالبًا تم اختيارهم عن قصد وفقًا لمتطلبات هيكل البحث المتبنى. قبل الاستقرار على مثل هذا الإجراء شبه التجريبي، خضع عدد اكبر من المشاركين من مجتمع البحث حيث تم اختيار العينة لمقابلة جماعية مركزة وملاحظة بعض الاقسام ليتم قياس نتائجها مع استبيان أولي مع المعلمين. على هذا الأساس، تعرض المنتسبون لتجربة من فترتي علاج متقطعتين مع فترتي نقاهة للإثبات عمليا عن أي احتمال إسهام MALL في تطوير قدرة المتعلمين على التعديل الذاتي لأخطائهم عند كتابة الجمل، بحيث انحصرت هذه المرحلة التجريبية بين استبيان قبلي و آخر بعدي. كشفت النتائج عن فعالية معتبرة لتقنيات MALL علي العينة المشار اليها. من خلال ذلك، تم تسجيل تجانس واضح في أداء الطلبة ليس فقط في المراجعة الذاتية وتحديد الأخطاء، بل أيضًا في ادائهم الكتابي حيث اظهرت علاماتهم في مختلف الجوانب اللغوية تنافسية وتقارب جد ايجابي في نقاط المشاركين وذلك راجع للوعي المتزايد الذي عبروا عنه في الاستبيان البعدي ايضا. تم في نهاية هذا البحث طرح جملة من التوصيات للاعتماد على MALL و إدراج بعض المقترحات للسيطرة على عوائق تجسيد

**الكلمات الأساسية:** MALL، المراجعة الذاتية، كتابة الجملة، تحليل الأخطاء

## Résumé

Cette recherche vise à montrer l'efficacité et l'utilité des technologies portables (MALL) pour l'apprentissage de l'anglais comme langue étrangère. L'objectif de cette requête est de déterminer l'efficacité de l'apprentissage des langues à l'aide de ces dispositifs pour améliorer la capacité d'autorévision des erreurs lors de l'écriture de phrases. Une méthodologie de recherche-action sur un seul échantillon s'est avérée améliorer la recherche sur les résultats des enquêtes de la phase initiale. La communauté de recherche a été interrogée par le Département de langue et littérature anglaises de l'Université de Sétif 2, où le formulaire d'échantillon était un groupe de trente-cinq (35) étudiants qui ont été intentionnellement sélectionnés en fonction des exigences de la structure de recherche adoptée. Avant de s'installer sur une telle procédure quasi expérimentale, un plus grand nombre de participants de la communauté de recherche, où l'échantillon a été choisi, ont subi un entretien de groupe ciblé et certains départements ont été observés pour mesurer leurs résultats avec un premier questionnaire auprès des enseignants. Sur cette base, les participants ont été soumis à un essai de deux périodes de traitement intermittentes avec deux périodes de récupération pour prouver pratiquement toute possibilité de contribution de MALL au développement de la capacité des apprenants à auto-corriger leurs erreurs lors de l'écriture de phrases, de sorte que cette étape expérimentale a été limitée à un pré- et post-questionnaire. Les résultats ont révélé une efficacité significative des techniques MALL sur l'échantillon susmentionné. Grâce à cela, une nette homogénéité a été remarquée dans les performances des étudiants, non seulement dans l'auto-évaluation et l'identification des erreurs, mais aussi dans leurs performances écrites, car leurs scores dans divers aspects linguistiques ont montré une compétitivité et une convergence très positive chez les participants en raison de la prise de conscience accrue qu'ils ont également exprimée dans le post-questionnaire. Au terme de cette recherche, un certain nombre de recommandations ont été avancées pour s'appuyer sur MALL et incluaient quelques suggestions pour contrôler les obstacles à la matérialisation.

**Mots-clés:** MALL, auto révision, rédaction de phrases, analyse d'erreurs