



Language Re-Use in Scientific Research: Investigating into the Textual Practices and Beliefs of Iraqi MA Science Students Writing in English

Asst. Prof . Dr. May Ali Abdul-Ameer

AL-Qadisiyah University, Iraq

may.abdulameer@qu.edu.iq

Abstract

Academic research writing has been a main area of investigation in *Applied Linguistics* recently. Reviewing literature shows that two types of textual practices can be distinguished regarding this issue: plagiarism and patchwriting. This paper focuses on the latter, which is defined as the re-use of source language with mild changes done to the original text. Particularly, this study attempts to investigate into the textual practices and beliefs of a group of Iraqi MA science students involving their language re-use practices when writing in English academically. Examples have been extracted from MA students' thesis writings showing the unconventional way language has been re-used from sources and how this may put students in jeopardy of plagiarism accusations. In order to gain a clear understanding on such practices an interview has been conducted by the researcher with 22 MA science students. The Justifications provided involved two salient issues: first, the nature of scientific research which is characterized by the inevitable repetition of technical phraseology, second, the demanding nature of academic writing which requires high levels of academic writing literacies. Thus, the study calls for pedagogical consideration within the Iraqi academic context regarding scientific research in English, along with emphasizing the urgent need for teaching English for specific purposes focusing on the challenges most Iraqi novice science writers face when writing in English academically.

Keywords: language re-use, patchwriting, formulaicity, originality, verbatim copying.

إعادة استخدام اللغة في البحث العلمي: دراسة الممارسات النصية والمعتقدات لدى طلاب ماجستير

العلوم العراقيين الذين يكتبون باللغة الإنجليزية

أ.م.د. مي علي عبد الأمير

جامعة القادسية، العراق

خلاصة

تعد الكتابة الأكاديمية في مجالات العلوم الصرفة موضوعاً رئيسياً للبحث مؤخراً لدى المختصين في اللغويات التطبيقية. وتبين الدراسات أنه يمكن التمييز بين نوعين من الممارسات الكتابية فيما يتعلق بهذه القضية: الانتحال النصي والكتابة الترقيعية. وقد ركزت هذه الورقة على الأخير، والذي يتم تعريفه على أنه إعادة استخدام نص معين مع إجراء تغييرات طفيفة عليه من قبل المستخدم وبدون توثيق لمصدر النص الأصلي. وعلى وجه الخصوص، تحاول هذه الدراسة التحقيق في الممارسات والمعتقدات الكتابية لمجموعة من طلاب الدراسات العليا العراقيين / الماجستير في جامعة القادسية كلية العلوم وبالتحديد الذين يكتبون رسائلهم باستخدام اللغة الإنكليزية. تم استخراج عينات عشوائية من كتابات الطلاب توضح الطريقة غير التقليدية التي تم بها إعادة استخدام اللغة من المصادر وكيف يمكن أن يعرض هؤلاء الطلاب



لخطر الوقوع في الانتحال. ومن أجل الحصول على فهم واضح لمثل هذه الممارسات، أجرى الباحث مقابلة مع 22 طالب ماجستير في كلية العلوم بجامعة القادسية ومن ثلاث اقسام مختلفة. تضمنت المبررات المقدمة قضيتين بارزتين: أولاً، طبيعة البحث العلمي في العلوم الصرفة والتي تتميز بالترار النصي لبعض العبارات والكلمات التخصصية خصوصاً عند الكتابة باللغة الانكليزية. وثانياً، طبيعة الكتابة الأكاديمية التي تتطلب مستويات عالية من المعرفة و البراعة اللغوية من جانب الباحث. لذا تدعو الدراسة إلى اعادة النظر في تدريس الكتابة الأكاديمية ضمن السياق الأكاديمي العراقي وخاصاً فيما يتعلق بالبحث العلمي باللغة الإنكليزية، مع التأكيد على الحاجة الملحة لتدريس اللغة الإنكليزية لغير المختصين بها و لأغراض محددة مع التركيز على التحديات التي يواجهها معظم الباحثين المبتدئين في العلوم الصرفة عند الكتابة باللغة الإنكليزية أكاديمياً.

الكلمات المفتاحية: اعادة استخدام النص، الكتابة الترقيعية، الصياغة المحددة، الاصاله، الاستنساخ النصي

1. Introduction

Recently, there has been a widespread tendency among most Iraqi postgraduate student majoring in hard sciences to write their work in English. This tendency has been mainly governed by the fact that the Iraqi ministry of higher education has made the *medium of instruction* most science postgraduate write in an optional matter which could be decided by their disciplinary scientific committee. Scientific committees, in most Iraqi science colleges, base their decision to write in English on a number of reasons. One main reason could be the accessibility that English language can provide in publishing in international scientific journals, a matter which may seem of great scientific benefit for supervisors and students alike. Moreover, most academic sources, whether hard or electronic copies, are, to some extent, available in English.

Coming from an educational background which teaches English as a *foreign language* and has Arabic as the medium of instruction, most Iraqi MA science postgraduates might witness an increased burden to write in academic and proper English. Their experience as academic writers writing in English could be described as that of a *novice*, considering the fact that many, if not most, of them have studied only some of their disciplinary subjects in English during their graduate education. Although, most MA science students might seem to have a convenient grasp over most *English terms* and *phraseology* related to their *disciplinary discourse*, still writing in English academically requires more than mere knowledge in common disciplinary words or phrases (Abdul-Ameer, 2020). Thus for producing sophisticated academic text, Iraqi MA science students should have a number of skills, some of which: high levels of English proficiency in general, advanced academic writing literacies and successful source-based writing techniques, in particular. Therefore, not being able to write from sources in good and academic English, some students might tend to heavily *re-use the language* of their sources in a way which could put them in jeopardy of plagiarism accusations (ibid). For it is a common fact within any academic discourse community that any re-use of source material should be



conventionally *attributed* (Pecorari, 2008), otherwise this re-use practice can be labeled as plagiarism. For such, it is to the *unconventional way of language re-use* that this study seeks to investigate.

The way hard science students use their sources effectively has been the focus of many research recently (Hyland, 1999; Jones & Freeman, 2003; Casanave, 2004; Liu, 2005; Flowerdew, 2007; Flowerdew & Li, 2007). However, reviewing literature shows that most of these studies seem to focus either on students who had the opportunity of studying in an *Anglophone academic community* or on those who had learned most of their disciplinary subjects in English. Thus, a major gap, the researcher believes, exists in the way *science students*, who have *Arabic* as their mother tongue and who have studied in a *L1 university setting*, write in English academically.

Putting these important facts in mind, this study aims at providing qualitative data which can foreground the difficulties faced by Iraqi MA science students writing from sources in English. Thus, the study begins first by talking about *language re-use* as a source based writing strategy that could involve various textual practices. Then the methodology section comes next explaining the way the data of the study has been gathered and analyzed. Results and conclusions will be then introduced in the final section

2. Literature Review

2.1. Language Re-Use: A Controversial Textual Practice

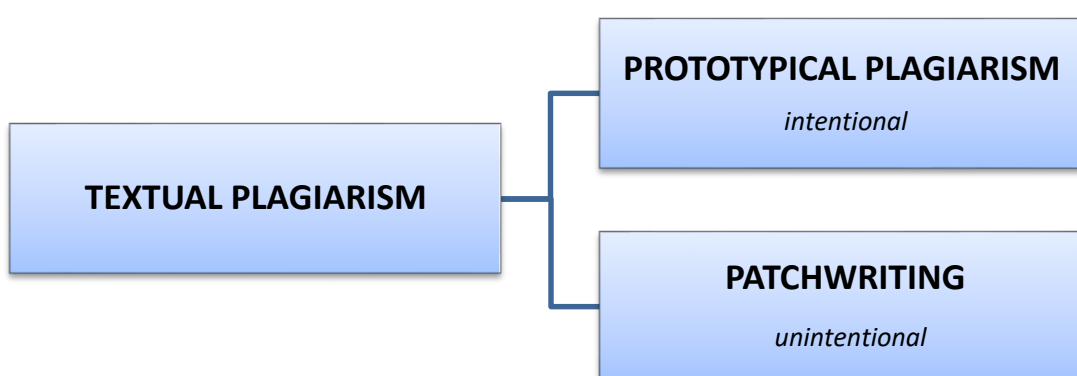
Considerable amount of studies has been carried out in applied linguistics to distinguish the act of plagiarism with and without the *intention to deceive* (Howard, 1999; Flowerdew and Li, 2007; Pecorari, 2008). Examples of the *intentional* kind could be when students buy a previously written out paper and submit it as their own or when students have their papers written by *ghost writers*. As for the second type, the *unintentional one*, novice writers might feel unconfident with their own writing voice and, thus, tend to borrow a voice which they think is more authorial and academic, or when student are ignorant in when and how to document a source (Howard, 1995; Pennycook, 1996; Anglii-Carter, 2000; Pecorari, 2003, Abdul-Ameer, et al, 2022). So, what this suggests is that not all acts of verbatim copying from sources can be "lumped together under the *plagiarism* label" (Pecorari & Petric, 2014: 275). If all acts of copying are considered deliberate cheating then the *unintentional type* would be viewed as an act of fraud which should be academically grounded instead of being pedagogically addressed (Chandrasoma, Thompson & Pennycook, 2004).

This unintentional copying practice was first recognized by Howard (1993, 1995, 1999) under the term *patchwriting*. it is defined by Howard (ibid) as "copying from a source text and then deleting some words, altering grammatical

structures, or plugging in one synonym for another." Building on Howard's quite influential term, Pecorari (2008:4) coined the term *prototypical plagiarism* to refer to the intentional type of plagiarism and which she defines as "the use of words and/ or ideas from another source, without appropriate attribution , and with the intention to deceive" (see figure 1).

Figure (1)

Types of Textual Plagiarism: adopted from Pecorari (2008)



2.2. Patchwriting: A Language Re-Use Strategy

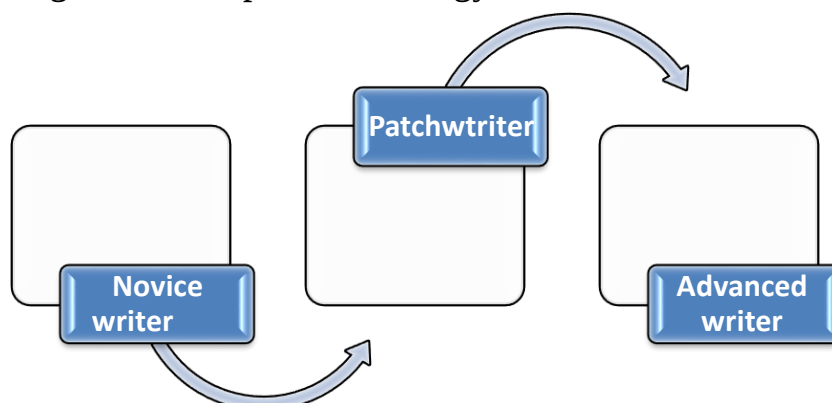
According to Howard (1999) patchwriting can be considered a kind of *imitating strategy* used by most novice academic writers when trying to develop their own academic *writing voice*. By imitating the way prominent figures write in their field, novice writers get to, actually, practice the style, citation conventions, and phraseology of their disciplinary academic discourse.

Howard's patchwriting model has been supported by a number of prominent researchers such as Pennycook (1996), Roig (2001), Petric (2004), Flowerdew & Li (2007) and Pecorari (2008) who ,although, might have different proposals, all share a similar view that this unintentional re-use of language from sources is an effective *developmental strategy* which academic novice writers use in order to develop their academic writing abilities (figure 2).

Consequently, many terminology emerged to account for this unintentional type and which all seem to aim at differentiating this type of act from the offensive sense that might be implied in the term *plagiarism*. Terms such as: *Textual Plagiarism* (Pecorari, 2003), *Textual Borrowing* (Shi, 2004), *Non-transgressive Intertextuality* (Chandrasoma, et al. 2004), *Language re-use* (Flowerdew and Li, 2007) were adopted. Because the current study follows Flowerdew and Li's (2007) model of textual analysis, their terminology "language re-use" will be adopted.

Figure (2)

Patchwriting as a developmental strategy



Language re-use can be defined as taking others' words without attribution and which could involve various textual practices ranging from copying long chunks of source material to appropriating short chunks into one's own language (ibid). Like Howard (1999), Flowerdew & Li (2007) seem to view this strategy of *language re-use* as a *repetition strategy* that is essential in the practice of using new words and expressions within a new disciplinary discourse. They (ibid: 442) describe the act as "*a bona-fide writing strategy employed by writers who are learners of a target discourse*" and who are struggling to be recognized within their discourse communities. According to them (ibid), the reason behind this employment could be due to two reasons:

(1) belief on the part of the plagiarizing students that a certain extent of language re-use from other texts is *acceptable* (i.e. not plagiarism, which students may have been severely warned against); (2) linguistic and cognitive overload in fulfilling certain writing tasks and for students for whom English is a second language and who lack linguistic flexibility this can be especially salient.

What can be concluded is that while ample evidence exists to prove that unintentionally re-using chunks of source language without attribution could be a real textual phenomenon, still more questions need to be answered. How pervasive is this textual behavior among Iraqi science novice academic writers? How widespread is it in their texts? And, is their qualitative support for the idea that inappropriate language re-use can be quite different from intentional plagiarism. The following sections report the answers to these questions.

3. Methods

3.1 Data Collection and Sampling

The investigation required two types of data: *textual data* and *interview data*. This involved the participation of (22) Iraqi MA science students majoring in three different disciplinary areas: Biology, Mathematics, and Chemistry at the



University of AL-Qadisiyah, College of Science. The participants were all in the last stages of their thesis writing and have started their MA study during the academic year 2020-2021. Although all of the (22) MA students agreed to participate in the interview, only (8) approved to have their work textually examined. Because the participants are still students who are working toward gaining a master's degree, *anonymity* was, thus, a major ethical concern. The identity of the participants were highly protected and for the sake of analysis codes were used instead of names (the number of participants along with their disciplines are shown in Table 1). The way each type of data has been collected will be discussed in detail next

Table (1)

Participation according to Discipline and Type of Data

Discipline	Interview Participation	Textual Participation
Biology	10	3
Mathematics	7	3
Chemistry	5	2
Total	22	8

3.1.1. Textual Data Collection

The eight MA students who had agreed to supply writing samples were asked to select *twenty sequent pages* from their *literature review* chapter, namely final electronic drafts. The reason behind choosing this chapter for analysis was due to the fact that it requires heavy use of sources, which could, hopefully, provide a considerable amount of insights regarding the way Iraqi MA science students use and employ source material academically.

As for the reason behind providing electronic final drafts, the textual analysis followed a *comparative reading approach* which required reading and comparing the writing samples to that of their sources. Thus, tracing sources would be rather easier when copying and pasting the titles than printing them via a keyboard. Moreover, locating language re-use from sources across the writing samples would definitely be both time and effort saving if the writing samples were to be electronic. Copying chunks of cited language and pasting them in the *search box* of the pdf format of an original source can be done with only a couple of clicks.



For the ease of comparing the textual samples to their corresponding sources , the researcher divided each sample into passages. The length of each sample was determined by a source reference. Thus, passages within the same writing sample may vary considerably from one another according to their *in-text citation*. Some passages might consist of 10-50 words while others might range between 100-250 words.

Because the investigation focuses on the way students re-use language material from the sources they are writing from, sources which are cited by the students were the only sources used for comparison. Nonetheless, not all sources listed by the students were traceable. *Missed source attribution* and *ill documentation* of sources were excluded. As mention previously, the researcher used codes instead of names and pseudonyms. The codes (BIO1, BIO2, BIO3) were used for the textual samples taken from master thesis written by the three biology participants, while (MTH1,MTH2,MTH3) were used to refer to the texts written by participant majoring in mathematics. As for the codes (CH1, CH2) they were used for the chemistry texts. Table (2) details the information regarding the textual data.

Table (2)

Textual Samples According to Source Number, and Word Number,

Textual Sample	Sources Used	Sources Obtained	Word Number
BIO 1	72	53	3.028
BIO 2	61	34	3.142
BIO 3	46	30	2.888
MTH 1	82	42	3.247
MTH 2	44	31	3.100
MTH 3	52	36	2.944
CHM 1	48	22	3.0 12
CHM 2	58	37	2.993
Total	463	285	24.354
Average	57.8	35.6	3.044

3.1.2. Interview Data Collection

The collection of the interview data lasted for two months, from February 2023 to April 2023. The data were collected through a *semi-structured interview* conducted by the researcher with the twenty-two Iraqi MA science students previously mentioned and indicated in table (1). The participants were all in the last stages of their MA study, waiting for their work to be examined and



approved. Thus, the participation in such a sensitive issue, required, as mention previously, highly protective requirements one of which is *anonymity*. Like the textual data, codes were used instead of names. The interviews were conducted in the participants' first language, Arabic, and lasted about 30 minutes. Each participant was interviewed at least two times.

The reason behind choosing a semi-structured interview is the believe that it could help in providing a flexible method of eliciting responses (Watson, 2015). The participants through this type of interview can express their thoughts openly and freely especially on sensitive topics such as the topic under investigation. It is likely that such type of interview could be a very positive tool in providing some sense of trust on the part of the participants to discuss any topic openly. The way each type of data is analyzed will be discussed next.

3.2 Data Analysis

3.2.1. Textual Data Analysis

As noted earlier, a comparative reading approach has been adopted in analyzing the textual data. This involves comparing the student passages to their corresponding source texts. In some cases the participants were asked to provide the corresponding sources that were hard to retrieve. However, not all the sources were provided by the participants so some passages were incomparable. Table (3) shows the portion of compared passages in each textual sample. For those passages that were compared, similarities in language between them and their corresponding sources were quite evident.

Table (3)

Percentages of Compared Passages in each Textual Sample

Textual Sample	Total Passages	Compared Passages	% Compared
BIO 1	32	26	81%
BIO 2	28	20	71%
BIO 3	18	16	88%
MTH 1	41	32	78%
MTH 2	24	18	64%
MTH 3	34	30	88%
CHM 1	28	22	78%
CHM 2	38	25	65%
Total	243	189	77%



As mentioned in the introduction, what this study seeks to investigate is *unattributed language re-use* and which seemed quite pervasive across the textual samples. Students' language re-use practices extends to two overlapping areas:

1. Re-using long chunks of source language without attribution (verbatim copying).
2. Incorporating short chunks of source language within their own language (patchwriting).

All eight of the textual samples contained one of these practices, and six had them both.

1. Verbatim Copying: Long chunks of unattributed language re-use

Within academic writing norms and conventions, attributing a text to its original author is a mandatory practice and a one which reflects the writer's *transparent* use of sources (Roig, 2001; Pecorari 2008). Thus, certain *metatextual* devices (Hyland, 2000) should be used conventionally by academic writers in signaling out their voice from that of the source they are writing from. One of these most conventional devices are *quotation marks*. In academic writing rules, it is assumed by any experienced academic reader that words which are not signaled out by *quotation* is the writer's own and vice versa. Six of the 8 textual samples had passages which were 100% similar to a corresponding source passage. Because this language re-use is not signaled by the writer, the risk of plagiarism may arise. All the writing samples, except BIO1 and MTH 2, had more than one passage containing words from a source without quotation. The following are examples of passages from three samples (BIO2, MTH1, CH1) and which show 100% similarity with a source.

Extract (1)

Student's text (BIO2): Passage 12

Candida normally lives in the mouth, throat, and the rest of the digestive tract without causing any problems. Sometimes, Candida can multiply and cause an infection if the environment inside the mouth, throat, or esophagus changes in a way that encourages its growth (Nucci & Anaissie, n.d.).

Source text: (Nucci & Anaissie, n.d.)

Candida normally lives in the mouth, throat, and the rest of the digestive tract without causing any problems. Sometimes, Candida can multiply and cause an infection if the environment inside the mouth, throat, or esophagus changes in a way that encourages its growth.

Extract (2)

Student's text (MTH1): Passage 3



An integral equation is an equation in which the unknown function appears under the integral sign. There is no universal method for solving integral equations. Solution methods and even the existence of a solution depend on the particular form of the integral equation (Bronshtein, et al 2004).

Source text: (Bronshtein, Semendyayev, Musiol, & Muehlig, 2004)

An integral equation is an equation in which the unknown function appears under the integral sign. There is no universal method for solving integral equations. Solution methods and even the existence of a solution depend on the particular form of the integral equation.

Extract (3)

Student's text (CH1): Passage (31)

Nowadays, the word 'heavy metal' has been used to describe metallic chemical elements and metalloids which are toxic to the environment and humans. Some metalloids and also lighter metals such as selenium, arsenic and aluminium are toxic (Briffa, Sinagra, & Blundell, 2020).

Source text: (Briffa, Sinagra, & Blundell, 2020)

Nowadays, the word 'heavy metal' has been used to describe metallic chemical elements and metalloids which are toxic to the environment and humans. Some metalloids and also lighter metals such as selenium, arsenic and aluminium are toxic.

In all the (189) compared passages of the textual samples, a total of (51), or 27% are one hundred percent similar with the language of their sources. Like the extracts above, the words and the number of words were identical to a corresponding passage in a source.

2. Patchwriting: Short chunks of unattributed source language:

All the eight writing samples contained short chunks of unattributed source material integrated within the students' language. It could be noticed that the way students incorporated these short chunks followed certain *linguistic processes* similar to those identified by Howard (1999) in her patchwriting model. These linguistic processes are:

1. Re-using source language with the *deletion* or *addition* of some words.
2. Replacing some re-used words with that of their *synonyms*.
3. Changing the grammatical structures of the re-used language.



The extracts below show examples of patchwritten passages coming from samples (BIO3, MTH2, CH2) and which hold respectively 60%, 50%, and 40% similarity with their sources. Expressing *language re-use* in percentage terms is done by dividing the number of words which are in common between a student passage and a source passage by the total number of words in the student passage. Language similarities between the two texts are underlined, synonyms are written in bold, and structural alternation is signaled out by italics.

Extract (4)

Student's text (BIO3): Passage (3)

Biofilms are cells which are loosely bound to the surface. They are associated cells which can be differentiated from their suspended counterparts in terms of an extracellular polymeric substance matrix, growth rate, and an up down regulation of genetic reproduction.

Source text: (Donlan & Costerton 2002)

Biofilm-associated cells can be differentiated from their suspended counterparts by generation of an extracellular polymeric substance (EPS) matrix, reduced growth rates, and an up and down regulation of specific genes.

In extract (4) above, 60% of the student's text can be found overlapping with a corresponding source text without attribution. The student's passage has (40) words where by (24) of them are found in common with a passage in the referred source. This means that the rate of unattributed repetition found in passage (3) in the extract (4) would be $24/40 = 60\%$. As can be noticed, only the first linguistic process has been used. The student has deleted some words from the original text before incorporating it with his/her own language.

Extract (5)

Student's text (MTH2): Passage (20)

Later on, Julia's work was **developed** by a French mathematician named Benoit Mandelbrot. Mandelbrot **made up** novel and new graphics for complex polynomials, which were named after his name as the Mandelbrot set. He defined them as the collection of all numbers for which the filled Julia set remains connected.

Source text: (Mandelbrot, 1982)

Afterwards, the work of Julia was **extended** by a French mathematician Benoit Mandelbrot. With the help of computers, he **constructed** beautiful graphics for complex polynomials known as Mandelbrot sets. He defined the Mandelbrot set of a function as the collection of all numbers for which the filled Julia set remains connected

The student's text in extract (5) holds 50% similarity with a corresponding source text. The text contained (50) words where by (25) of them are found in in



the source text. The Comparison between the two text can clearly show that the student has employed two linguistic processes; deleting words from the original text and replacing others with their synonyms.

As for extract (6) below, it has 40% of language re-use. The student's text contained (77) words where (31) of them are found overlapping with language from a source.

Extract (6)

Student's text (CH2): Passage (11)

Lead has been considered a **mild**, heavy, blue gray metal which exists in the earth's crust. It should be noted that this metal has bad **consequences** on the human body, especially to the central nervous system in infants and children under age six. Consequences could be **equal** if breathed or swallowed. *In fact the exposure to lead repeatedly could cause a number of health issues such as: blood anaemia, severe stomach ache, muscle weakness, and brain damage.*

Source text: (Adepoju-Bello, A. et al)

Lead is a **soft**, heavy, blue-gray metal that occurs naturally in the earth's crust. Lead **affects** almost every organ system in the human body. The central nervous system is particularly vulnerable in infants and children under age six. The effects are the **same** whether it is breathed or swallowed. *Large amounts of lead exposure may lead to blood anaemia, severe stomach ache, muscle weakness, and brain damage.*

It can be seen that the amount of language re-use has decreased to 40% in extract (6) because three linguistic processes has been used. Added to the deletion and the replacement process, the grammatical structure of some sentences has been altered. It seems that the amount of repeated language from sources in the patchwritten extracts varied considerably according to the number of linguistic processes utilized. The passages, which were identified as patchwritten by the use of only one or two linguistic process, had (90%) to (60%) language similarities with their sources. A thing which indicates that patchwriting through only one or two linguistic processes could bring the act very close to copying, which might, in some cases, put this type of source use in jeopardy of being viewed as a deliberate act of plagiarism. Conversely, in those passages which have been written by the use of three linguistic processes, language similarities with their sources decreased to (40%) and (30%). Therefore, patchwriting, in these cases, reflects a type of source use that could be considered very close to the highly recommended academic writing technique of paraphrasing.

In all the (189) compared passages of the textual samples, a total of (133), or 73% contained patchwritten passages. This finding reflects a quite striking



evidence that re-using language from sources is a pervasive textual practice among those group of writers. In order to identify the causes behind these prevalent practice found across the textual data samples, a semi-structured interview was conducted. The following section reports on the findings of the interview.

3.2.2. Interview Data Analysis

The semi-structured interview followed an *inductive approach*, which is generally associated with analyzing *qualitative data*, especially those extensive data gained from interviews (see Decarlo, 2018; Bingham & Witkowsky, 2022). An inductive approach basically means reaching broad interpretations from limited amount of data through the use of an *analytical tracing strategy*. In other words, it is a kind of a *bottom-up* approach to data analysis, where researchers go through three basic steps: *data collection*, *extensive searching for themes*, and *interpreting findings*.

It should be noted that dealing with sensitive topics such as *plagiarism* should be dealt with great caution by researchers. Participants should feel safe to talk freely and openly on such an issue. Thus, the researcher was very keen to not mention the Arabic word (الانتحال) or (السرقه الادبيه), which both mean *plagiarism* during the interview. Instead, the participants were asked questions such as: "is copying from a source directly without attribution an academically accepted practice?" and "how did you attribute language re-use in your thesis writing?"

Because the researcher used the participants' first language, *Iraqi Arabic*, in carrying out the interview, translating the responses into English was a necessary step in the process of data analysis. Thus, only those responses that were beneficial in revealing the attitudes of the participants on the topic investigated had been translated. As mentioned earlier, (22) MA science students agreed to participate in the interview. The interview was audio recorded and each participant was interviewed twice. As mentioned earlier codes are used instead of names. For such, the codes (BIO1 to BIO10) are used for biology participants while the codes (MTH1 to MTH7) are used for Math participants and (CH1 to CH5) for Chemistry participants.

The identification of some broad themes came immediately after listening and translating the first responses. Searching for *common* themes that reoccur between responses was the basic step in forming the general themes of the analysis. According to Boyatzis (1998:161) a theme is "a pattern in the information that at *minimum* describes and organizes the possible observations and at *maximum* interprets aspects of the phenomenon." Thus, by extensively listening to the responses certain patterns began to emerge. These patterns were



basically *phrases* or *sentences* that participants used when answering the interview questions.

Thus, instead of beginning with a set of specific questions, the researcher began with questions guided by broad themes, allowing for more secondary themes to emerge. Accordingly, the responses were categorized into two major themes each of which included a number of subthemes that were linked thematically to the general one:

1. *The re-use of general phrases is inevitable in second language writing.*

Most participants declared the fact that re-using language from sources is a common textual practice in academic scientific writing, especially when writing in a second language. This theme was expressed by a number of frequently reoccurring responses which were reflected in two sub-themes: *originality of results* and *second language writing*.

Originality of results

When confronted by the outcomes of the textual analysis, some participants claimed the fact that *originality* in hard science is not like what it is in humanities. For, originality in scientific research lies in the analysis of data and the results obtained from such an analysis. The following extracts show how some participants explained language re-use from sources in their work.

Ext (1): BIO 2

In the theoretical part of the research it is OK to copy some general phrases from sources to define a term or explain it, but in the practical part everything must be in our own words.

Ext (2): MTH 4

Mathematics is a practical domain we don't talk much. Not like the humanities, we deal with formulas and equations. So we need to repeat specific sentences. Despite this we never repeat when we analyze our data. The results are unique in each research.

Ext (3): CH 5

There is no copying when we make our experiments and analyze our data. We can't use sources in analyzing our work. we use our language when we write the results.

Ext (4): BIO 8



You can't find any similarity between two researches in the analytic part of the study. The results are original to us. In qualitative research copying is more problematic than quantitative ones.

Second language writing

Academic language is hard to produce even for writers who write using their first language and, thus, would be more challenging for those who write in a second/foreign language (Abdul-Ameer, Ali, Zboon, 2022). It should be noted that all the 22 participants admitted the fact that writing in English is the main cause behind most students' copying practices. This finding may support what has been mentioned earlier in the introduction that Iraqi MA science postgraduate who write in English might tend to heavily *re-use the language* of their sources in a way which could put them in jeopardy of plagiarism accusations.

Ext (5): BIO 7

Sometimes I copy directly from the source because my English is not good and I need to write in an academic way.

Ext (6): MTH 5

If I want to define a term or explain a mathematical equation I usually copy without changing a word. You know, writing in English which is not my first language is hard. If I paraphrase I could be changing something I am not sure of, so I copy instead.

Ext (7): CH 1

I think that if you are writing in another language which is not your mother tongue, you should be careful in changing any word. Copying is alright in our case. I can tell you that this is the way it goes by most students majoring in the hard sciences.

Ext (8): BIO 9

Look, in the hard sciences we can't write in English using our own language it is better to copy from a source, especially when we are defining a term or introducing an expression. Because using our own language could distort a text and the idea too will be distorted. Not like in the humanities.

It could be possible that writing in English and re-using general phrases and sentences, could help in explaining only part of what most Iraqi MA science students face when writing academically from sources. Another more effective



factor related language re-use ,which students themselves bought up in their responses, is that of academic writing skills.

2. Ignorance in academic writing literacies.

Some responses have significantly shown how ignorant most students are in academic writing skills. This theme was reflected through two main subthemes which reoccurred frequently in the responses, that is: *ignorance in referencing* and *ignorance in the way quotations are formatted*. Exploring students' ignorance within these basic academic writing skills can be quite useful in providing a clear picture on why some instances of language re-use in the students' text could be labeled as plagiarism.

Referencing

Referencing is considered an essential pillar in academic writing norms and conventions. It is the main way whereby writers can give credit to the sources consulted in their work. Writing academically not only involves merging different source voices together but merging a source voice with the that of the writer. Thereby, referencing should be used by academic writers to *attribute* these voices to the different sources they belong to and to distinguish source language from the writers' own language. The participants showed notable ignorance on when and how to reference a source.

Ext (9): CH 3

When I copy from a source I write an in-text reference where I put the *name of the author* and *the date*. Full information about the source should only be mentioned at the end of the thesis in the bibliography.

Ext (10): BIO 6

I don't use in-text referencing, I use numbers which refer to a source at the end of my work.

Ext (11): BIO 7

Referencing a source is important in the text and at the end of the thesis. In-text I usually write the *name of the author*, *the date*, and a *page number* while in the bibliography I give full information.

Ext (12): MTH 7

When I copy directly I give an in-text source reference, when I paraphrase I don't.

It should be noted that all the 22 participants admitted the importance of acknowledging cited material and stated that not doing so is an act of plagiarism.



Nonetheless, regarding more specific aspects of referencing and in-text citations discrepancy between students' responses was quite evident. As can be noticed the lack of consensus on how to reference a source is quite evident among the participants. This could also give a clear picture on how confused those students are on how to conventionally cite a source .

Quotation

Quoting is an essential academic writing technique that most writers employ when writing from sources. It allows the incorporation of long and short chunks of source material within one's own writings either through the use of quotation marks or indentation. By using these quotation strategies, writers are supposed to help readers identify between a source voice and the writer's own voice. If the boundaries are not set right between the writers' own words and that of their sources accusations of plagiarism could be faced.

Going through the responses, students showed notable ignorance over the importance of signaling out repeated language by quotation. Some students stated the fact that if cited material is referenced the need for signaling it out by quotation (quotation marks or indentation) will diminish.

Ext (13): MTH 3

I don't think quotation marks are used a lot in the sciences. If we want to re-use a sentence we usually write it and put a reference. As for block quotations we never use them.

Ext (14): BIO 6

If the cited text is not more than five lines I would put it between two quotation marks and quote the text. Long cited texts should be paraphrased.

Ext (15): BIO 9

As I told you before, we are not like the humanities. In the hard sciences we don't use equations a lot we usually repeat general expressions and paraphrase with a source at the end.

Ext (16): BIO 10

Why should we put quotation marks, I am referring to the source, isn't that enough.

How far do these misunderstandings about quoting effect the way those students use sources in their writings remains hard to prove. Proving it requires going through their writings extensively in search for such quotation uses.



Nonetheless, it could be concluded that these misunderstandings, if put into action, can definitely contribute in constituting plagiarism.

Relating the findings of the interview data analysis to the findings of the textual data analysis could give powerful explanations on why the writing samples contained instances of language re-use which could be considered as problematic. In fact the interview data analysis has, to some extent, provided evidence that most Iraqi MA science students tend to re-use language from sources in a way that could possibly put them at risk of plagiarism accusation.

4. Conclusion

Given the results obtained from the textual data analysis and the interview data analysis it might be reasonable to claim, but with slight caution, that language re-use, like what has been investigated in this study, is a widespread textual practice among Iraqi MA science students. The textual data analysis showed that most students attempted to incorporated long and short chunks of source material within their own language without appropriate attribution. This could be due to two basic explanations which were bought up by the students throughout the interview and which the researcher finds it necessary to acknowledge: the *formulaicity of science language* and the *demanding nature of academic writing*. Students, through the interview, have fully declared the fact that re-using language is an inevitable textual practice in science writing. Thus, the re-use of formulaic phrases in science writing should be put into consideration when discussing students' textual practices. Also the low levels of English proficiency and ignorance in academic writing conventions are other salient explanations provided by the students. The lack of consensus among students on certain academic writing skills was quite evident throughout the interview. Some students showed notable confusion on how and when to provide an in-text citation while others expressed their ignorance in the basic academic skill of quotation. This, the researcher suggests, should be given special pedagogical focus through helping students develop academic writing literacies and enhance their English language proficiency. A thing which might help them, eventually, avoid re-using others' words unconventionally.

To sum up and pave the way for further research to take place, the current study examined the textual practices and beliefs of a group of Iraqi postgraduate science students, revealing a notable issue which the researcher finds salient in providing an explanation for the unconventional way those students re-use language from their sources: a *gap* seems to exist between what students are capable of producing and what they should produce. So, it would be worthwhile to consider ways in filling this gap. In doing so, more case studies would be needed to thoroughly address this issue and investigate into the textual practices and beliefs of academic novices across disciplines.



REFERENCES

- Abdul-Ameer, M.A. (2020). The Misuse of Source Material in Academic Writing by Iraqi EFL Postgraduate Students. *The Journal of Asia TEFL*, 17, 304-309.
- Abdul-Ameer, M.A., Ali, A. Q, Zboon, M.Q. (2022). Textual Plagiarism and Source Misuse in Iraqi EFL Postgraduate Academic Writing. *Al-Qadisiyah journal for humanities sciences*, 24(2), 61-80.
- Ang'elil-Carter, S. (2000). *Stolen language? Plagiarism in writing*. New York: Longman.
- Bingham, A.J., & Witkowsky, P. (2022). Deductive and inductive approaches to qualitative data analysis. In C. Vanover, P. Mihas, & J. Saldaña (Eds.), *Analyzing and interpreting qualitative data: After the interview*, 133-146. SAGE Publications.
- Decarlo, M. (2018). *Scientific Inquiry in Social Work*. Radford University: Open Social Work Education.
- Chandrasoma, R., Thompson, C., & Pennycook, A. (2004). Beyond plagiarism: Transgressive and nontransgressive intertextuality. *Journal of Language, Identity and Education*, 3, 171–193.
- Casanave, C. P. 2004. *Controversies in Second Language Writing: Dilemmas and Decisions in Research and Instruction*. Ann Arbor: University of Michigan Press.
- Jones, A. A. and T. E. Freeman. 2003. Imitation, copying, and the use of models: Report writing in an introductory physics course. *IEEE Transactions of Professional Communication* 46/3: 168–84.
- Liu, D.-L. 2005. 'Plagiarism in ESOL students: Is cultural conditioning truly the major culprit?' *ELT Journal* 59: 234–41. 464 LANGUAGE RE-USE AMONG CHINESE APPRENTICE SCIENTISTS Downloaded from <http://applied.oxfordjournals.org/> at City University of Hong Kong on March 4, 2013
- Flowerdew, J. (2007). The non-Anglophone scholar on the periphery of scholarly publication. *AILA Review*, 20, 14-27
- Flowerdew, J. & Li, Y. (2007). Language re-use among Chinese apprentice scientists writing for publication. *Applied Linguistics*, 28, 440–465.
- Howard, R. M. (1993). A Plagiarism Pentimento. *Journal of Teaching Writing*, 1 (1), 233-246.



- Howard, R. M. (1995). Plagiarisms, authorships, and the academic death penalty. *College English*, 57 (7), 788–805.
- Howard, R. M. (1999). *Standing in the shadow of giants*. Stamford, CT: Ablex.
- Hyland, K. (1999). Academic attribution: Citation and the construction of knowledge. *Applied Linguistics*, 20, 341–367.
- Hyland, K. (2000). *Disciplinary discourses: Social interactions in academic writing*. Harlow, Essex: Longman
- Pecorari, D. (2003). Good and original: Plagiarism and patchwriting in academic second language writing. *Journal of Second Language Writing* 12: 317–345.
- Pecorari, D. (2008) *Academic Writing and Plagiarism: A Linguistic Analysis*. New York: Continuum.
- Pecorari, D. & Petric, B. (2014). Plagiarism in second-language writing . *Language Teaching*, 47, 269-302.
- Pennycook, A. (1996). Borrowing others' words: Text, ownership, memory, and plagiarism. *TESOL Quarterly*, 30.2, 201–230.
- Petrić, B. (2004). A pedagogical perspective on plagiarism. *NovELTy*, 11 (1), 4–18.
- Roig, M. (2001). Plagiarism and Paraphrasing Criteria of College and University Professors. *Ethics & Behavior* 11(3), 307–324.
- Shi, L. (2004) Textual borrowing in second-language writing. *Written Communication*, 21.2, 171–200.
- Watson, C. (2015). Rosalind Edwards and Janet Holland, What is Qualitative Interviewing? and Andreas Witzel and Herwig Reiter, The Problem-Centred Interview. *Qualitative Research*, 15(4), 540-542.
<https://doi.org/10.1177/1468794114535040>.

Student text References

- Adepoju-Bello, A., Oyawalujac, D., Bisiriyub, D., Ehienetac, D. (2019). Phytochemical Screening, Antioxidant activity, Antimicrobial activity and Heavy metal quantification of *Chrysophyllum albidum* Fruit Extract (Sapotaceae). *ajol-file-journals_257_articles_188245_submission_proof_188245-3061-478272-1-10-20190717*.



Briffa J, Sinagra E, Blundell R. Heavy metal pollution in the environment and their toxicological effects on humans. Heliyon. 2020 Sep 8;6(9):e04691. doi: 10.1016/j.heliyon.2020.e04691. PMID: 32964150; PMCID: PMC7490536

Bronshtein, I.N., Semendyayev, K.A., Musiol, G., Muehlig, H. (2004). Linear Integral Equations. In: Handbook of Mathematics. Springer, Berlin, Heidelberg. https://doi.org/10.1007/978-3-662-05382-9_11

Donlan, R.M.; Costerton, J.W. (2002). Biofilms survival mechanisms of clinically relevant microorganisms. Clin. Microbiol. Rev., 15(2),167-193.

Nucci M, Anaissie E. Revisiting the source of candidemia: skin or gut?external icon Clin Infect Dis . 2001;33:195 9-67.