Reporting and Quoting: Functional Analyses of Logico-Semantic Relations of Clause Complex Citations

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ABSTRACT
Citations are significant academically for establishing research backgrounds and justifying a research problem. In spite of the increasing studies on citations, limited studies have employed the Systemic Functional Linguistics in analysing citations. Therefore, this study explores the logico-semantic relations in citations with clause complexes, employing the ideational metafunction of the Functional Theory. The study adopted a purposeful sampling in selecting the literature review chapters of 20 PhD theses by EFL postgraduates in a public Malaysian university in two disciplines: Information Technology and Applied Linguistics. The findings revealed that citations were structured to realise two logico-semantic relations, mainly Expansion and Projection with several subcategories for each. A combination of Projection and Expansion was also used, which resulted in reclassifying the logico-semantic relations. The findings could present comprehensive descriptions of citations that could be pedagogically utilised for academic purposes.

Keywords: academic writing; citations; expansion; projection; Systemic Functional Linguistics

INTRODUCTION
Academic writing is the core of postgraduate studies because it is the means for communicating the findings and arguments to the readers, thus attracting the interest of higher education (Coffin et al. 2003) due to students’ limited experience in writing English (Williams & Takaku, 2011). Writing in academic genres is different from writing in non-academic genres because of the high degree of formality, as well as writing academically necessitates citing information from sources to support claims and present justifications (Swales 1990, 2014, Thompson 2002, Thompson & Tribble 2001). Consequently, citing information cannot be neglected as it helps establish one’s study on a solid basis (Hyland 2009, Petric’ & Harwood 2013, Samraj 2013). However, using citations varies significantly (Dontcheva-Navrtilova 2016) according to genres, culture, experience, and disciplines (Lillis et al. 2010), and is therefore challenging for novice writers, particularly EFL writers (Hyland 2006, Jomaa 2017, Jomaa & Bidin 2017). Few studies have focused on analysing citations based on the Systemic Functional Linguistics. Therefore, this study presents analyses of the clause complex used in citations by EFL postgraduates based on the SFL.

LITERATURE REVIEW
Swales (1990) classified citations into integral and non-integral. In integral citations, the cited author has several functional roles (Jomaa & Bidin 2016, Swales 2014), whereas in non-integral citations, the cited author is put in parentheses with no functional roles. For example,
in their study, Jomaa and Bidin (2016) demonstrate that the cited author functions as a subject, a complement, and an adjunct at the interpersonal meanings. Under the experiential meanings, the cited author has functions of an actor, a sayer, and a senser that are conflated with the function of the subject. In addition, the cited author has functions like a goal and an attribute that are conflated with the function of the complement and other functions like a location, an agent, and a matter that are conflated with the function of the adjunct. Other researchers, such as Thompson (2002) and Thompson and Tribble (2001), focused on subcategorising integral and non-integral citations into several subcategories. Within the citation types, several studies have focused on analysing reporting verbs (Bloch 2010, Francis Hunston & Manning 1996, Hyland 1999, Manan & Noor 2014, Thomas & Hawes 1994 Thompson 2002, Thompson & Ye 1991, Yang 2013), as in Figure 1.

![FIGURE 1. Denotative reporting verbs (Thompson & Ye 1991)](image)

Textual verbs refer to verbal expressions, such as point out, state, and deny. Mental verbs refer to mental processes, including believe, think, and consider, whereas Research verbs include measure, obtain, and find. However, the division between the Author acts and the Writer acts in Thompson and Ye’s findings is not clear-cut. Author act refers to the verbs used originally by the author of the article, whereas Writes act refers to the verbs used by the writer who cites information from the author’s article. Verbs of the Author acts can be interpreted as Writer acts when used in negation or used with a modal verb. Based on these reporting verbs, Swales (2014) categorised citations into either reporting or non-reporting. However, this latter classification did not focus on the type of clause in each citation and the classifications of the reporting verbs are not based on a theory.

Similarly, Yang (2013) adopted Francis, Hunston and Manning’s (1996, pp. 97-101) classification that is parallel to the categorisation in previous studies (Hyland 1999, Thomas & Hawes 1994, Thompson & Ye 1991). However, Yang’s study included only Verb that clause structure, as follows:

![FIGURE 2. Verb that clause pattern (Francis et al. 1996)](image)

Yang’s findings revealed the dominance of ARGUE group, followed by FIND and SHOW, whereas THINK group occupied the lowest percentage. The findings of Yang (2013) and Hyland (1999) in two domains of knowledge seem to contrast with Manan and Noor (2014) in an ELS programme, whereby reporting verbs from the research category were used with the highest percentage (44.8%), followed by cognition acts (30.2%), whereas the discourse category had the lowest percentage (25%).
The use of reporting verbs is also influenced by L1. The possible effect of L1 on the use of reporting structures in English was explored by Rowley-Jolivet and Carter-Thomas (2014), who showed that using reporting verbs represented a problem for expert French writers of English. Consequently, because of the limited use of certain reporting and conversational verbs, Parkinson (2013) recommends more explorations of students’ use of reporting verbs. However, previous studies have neglected other verbs, such as ‘to be’, behavioural verbs, causative verbs and existential ones. In addition, the analyses adopted in these studies have not focused on the type of clause in which these verbs were used.

Moreover, the pedagogical approaches in teaching citations could not present a sufficient view of using citations in different disciplines (Hu & Wang 2014) that have a different epistemology (Maroko 2013). Consequently, Hu and Wang (2014) suggest “importantly, pedagogical work on linguistic resources for citation needs to be informed by a coherent functional theory of language as a semiotic tool for construing ideational, interpersonal, and textual meanings in social context” (p. 27). These meanings are associated respectively with three register variables: Field, Tenor, and Mode, that can influence the use of language (Halliday 1985, Halliday & Martin 1993), as demonstrated in Figure 3.

![Figure 3. Metafunctional solidarity across planes (Halliday & Martin 1993)](image)

The interpersonal meaning reflects the writer’s stance. As for the textual meaning, it is concerned with the way of relating what was said to what was said before and how it is related to the context. Regarding the Ideational Meaning, it is composed of two aspects: Experiential meanings and Logical ones.

The Experiential meanings reveal one aspect of the Ideational meanings and express the real world by means of processes ‘verbs’, as in Figure 4.

![Figure 4. Types of processes in transitivity system (Halliday 1985)](image)
The Logical meaning is the other aspect that is concerned with the relationships between clauses of a clause complex. Table 1 shows the logico-semantic relations between clauses, as presented by Halliday (1985, pp. 196-197).

<table>
<thead>
<tr>
<th>Logico-semantic relations of clause complexes</th>
<th>1. Expansion</th>
<th>2. Projection</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Extension</td>
<td>A. Quoting ‘direct speech’</td>
<td></td>
</tr>
<tr>
<td>B. Enhancement</td>
<td>B. Reporting ‘indirect speech’</td>
<td></td>
</tr>
<tr>
<td>C. Elaboration</td>
<td>C. Reporting speech, quoting thoughts</td>
<td></td>
</tr>
<tr>
<td>1. Exposition</td>
<td>D. Projecting offers and commands</td>
<td></td>
</tr>
<tr>
<td>2. Exemplification</td>
<td>E. Free indirect speech</td>
<td></td>
</tr>
<tr>
<td>3. Clarification</td>
<td>F. Embedded locutions and ideas</td>
<td></td>
</tr>
<tr>
<td>D. Embedded expansions</td>
<td>G. Facts</td>
<td></td>
</tr>
<tr>
<td>E. Acts</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Logico-semantic relations are the main focus in the present study; they involve meanings of either projection or expansion by means of the secondary clause. According to Halliday (1985), in Expansion, the secondary clause expands the primary clause by means of Elaboration, Extension or Enhancement. On the other hand, in Projection, the secondary clause is projected through the primary clause (Halliday 1985).

Under the SFL approach, two types of analysis levels are possible, including the ‘macro (text) and micro (sentence) level’ (Eggins 1994, p. 13). As for the present study, the micro (sentence) level of analysis was conducted in analysing the citations. Hence, two major research questions were addressed.

i. How are clause complexes of the citations structured to realise the logico-semantic relations?

ii. To what extent are EFL postgraduates similar and/or different in using the clause complexes of the citations in two different disciplines (Applied Linguistics and Information Technology)?

METHODOLOGY

The clause complex in each citation is the unit of analysis, focusing mainly on the logico-semantic relations. Halliday’s (1985) taxonomy presented in Table 1 was adopted and Swales’ (1990) classification was used to identify types of citations. Figure 5 describes the conceptual framework that guides the present study. The integral citation includes citations that have the names of the cited author/s integrated with the structure of the clause complex, whereas in the non-integral citations, the name/s of the cited author/s is/are put in parentheses. These clause complex citations (integral and non-integral) were analysed based on the logico-semantic relations, namely Expansion and Projection.

![Figure 5: Conceptual framework of the present study](http://doi.org/10.17576/3L-2019-2501-12)
A qualitative analysis was adopted, supported by the technique of quantifying the findings. This technique, according to Maxwell (1992), assists in making internal generalizability of the researcher’s claims, helps in identifying inapparent patterns, and attributing specific features to the varied groups of participants involved in the study, and supports the researcher’s interpretation in qualitative studies (Maxwell 2010).

A purposeful sampling was employed in choosing the literature review chapters of 20 PhD theses in Applied Linguistics and Information Technology by EFL postgraduates. These PhD theses were deposited in a library of one of the public Malaysian universities. Using the PhD theses for academic purposes was approved by the Dean of the Graduate Schools at the university. The details of these PhD theses are presented in Tables 2 and 3.

<table>
<thead>
<tr>
<th>No</th>
<th>Coding of LR</th>
<th>Nationality</th>
<th>Publication Date</th>
<th>Number of Pages</th>
<th>Number of Words</th>
<th>Citation Style</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>LR.1</td>
<td>Iraqi</td>
<td>2013</td>
<td>35</td>
<td>9,031</td>
<td>(Author, date) style</td>
</tr>
<tr>
<td>2</td>
<td>LR.2</td>
<td>Jordanian</td>
<td>2014</td>
<td>75</td>
<td>20,744</td>
<td>(Author, date) style</td>
</tr>
<tr>
<td>3</td>
<td>LR.3</td>
<td>Jordanian</td>
<td>2014</td>
<td>87</td>
<td>21,661</td>
<td>(Author, date) style</td>
</tr>
<tr>
<td>4</td>
<td>LR.4</td>
<td>Yemeni</td>
<td>2014</td>
<td>62</td>
<td>12,139</td>
<td>(Author, date) style</td>
</tr>
<tr>
<td>5</td>
<td>LR.5</td>
<td>Yemeni</td>
<td>2014</td>
<td>35</td>
<td>8,990</td>
<td>(Author, date) style</td>
</tr>
<tr>
<td>6</td>
<td>LR.6</td>
<td>Iraqi</td>
<td>2014</td>
<td>69</td>
<td>18,149</td>
<td>(Author, date) style</td>
</tr>
<tr>
<td>7</td>
<td>LR.7</td>
<td>Jordanian</td>
<td>2013</td>
<td>88</td>
<td>21,541</td>
<td>(Author, date) style</td>
</tr>
<tr>
<td>8</td>
<td>LR.11</td>
<td>Libyan</td>
<td>2014</td>
<td>89</td>
<td>22,080</td>
<td>(Author, date) style</td>
</tr>
<tr>
<td>9</td>
<td>LR.12</td>
<td>Iraqi</td>
<td>2013</td>
<td>117</td>
<td>31,872</td>
<td>(Author, date) style</td>
</tr>
<tr>
<td>10</td>
<td>LR.19</td>
<td>Yemeni</td>
<td>2015</td>
<td>79</td>
<td>19,000</td>
<td>(Author, date) style</td>
</tr>
</tbody>
</table>

Total 10 PhD theses 736 pages 185,207 words

<table>
<thead>
<tr>
<th>No</th>
<th>Coding of LR</th>
<th>Nationality</th>
<th>Publication Date</th>
<th>Number of Pages</th>
<th>Number of Words</th>
<th>Citation Style</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>LR.7</td>
<td>Syrian</td>
<td>2014</td>
<td>69</td>
<td>13,815</td>
<td>Numbering style</td>
</tr>
<tr>
<td>2</td>
<td>LR.8</td>
<td>Iraqi</td>
<td>2013</td>
<td>73</td>
<td>18,526</td>
<td>(Author, date) style</td>
</tr>
<tr>
<td>3</td>
<td>LR.9</td>
<td>Iraqi</td>
<td>2014</td>
<td>72</td>
<td>16,005</td>
<td>(Author, date) style</td>
</tr>
<tr>
<td>4</td>
<td>LR.13</td>
<td>Jordanian</td>
<td>2011</td>
<td>65</td>
<td>14,743</td>
<td>(Author, date) style</td>
</tr>
<tr>
<td>5</td>
<td>LR.14</td>
<td>Jordanian</td>
<td>2012</td>
<td>60</td>
<td>13,162</td>
<td>(Author, date) style</td>
</tr>
<tr>
<td>6</td>
<td>LR.15</td>
<td>Palestinian</td>
<td>2012</td>
<td>37</td>
<td>8,547</td>
<td>Numbering style</td>
</tr>
<tr>
<td>7</td>
<td>LR.16</td>
<td>Yemeni</td>
<td>2014</td>
<td>49</td>
<td>10,093</td>
<td>Numbering style</td>
</tr>
<tr>
<td>8</td>
<td>LR.17</td>
<td>Jordanian</td>
<td>2011</td>
<td>54</td>
<td>12,702</td>
<td>(Author, date) style</td>
</tr>
<tr>
<td>9</td>
<td>LR.18</td>
<td>Iraqi</td>
<td>2014</td>
<td>70</td>
<td>13,380</td>
<td>(Author, date) style</td>
</tr>
<tr>
<td>10</td>
<td>LR.20</td>
<td>Jordanian</td>
<td>2012</td>
<td>107</td>
<td>27,410</td>
<td>(Author, date) style</td>
</tr>
</tbody>
</table>

Total 10 PhD theses 656 pages 148,383 words

Ten PhD theses of Applied Linguistics (AL) belong to the soft domain of knowledge. On the other hand, ten PhD theses of Information Technology (IT) belong to the hard domain. For example, PhD theses of arts in the soft domain are based on the strength of the arguments, revealing more personality and subjectivity. Similarly, PhD theses of the social sciences are based on arguments supported by evidence. On the other hand, science-based PhD theses in the hard domain focus less on arguments (Parry, 1998). The total number of citations used in analyses is presented in Table 4.
TABLE 4. Total number of citations in AL and IT PhD theses

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Clause Complex Citations</th>
<th>Clause Simplex Citations</th>
<th>Citations with Quotations</th>
<th>Total Citations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applied Linguistics</td>
<td>2666 (75.33%)</td>
<td>844 (23.84%)</td>
<td>29 (0.81%)</td>
<td>3539</td>
</tr>
<tr>
<td>Information Technology</td>
<td>1593 (73.44%)</td>
<td>566 (26.09%)</td>
<td>10 (0.4%)</td>
<td>2169</td>
</tr>
</tbody>
</table>

A total number of 4,259 citations was analysed; 2,666 (62.60%) citations were from the literature review chapters of Applied Linguistics, whereas 1,593 (37.40%) citations were from the literature review chapters of Information Technology. Coding was used in documenting the citations for the purpose of supporting the findings and abiding to the ethical issues, as illustrated in Table 5.

TABLE 5. Coding system used in documenting the data in the present study

<table>
<thead>
<tr>
<th>Thesis</th>
<th>Discipline</th>
<th>Nationality</th>
<th>Section</th>
<th>Paragraph</th>
<th>Line</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>P.1</td>
<td>AL</td>
<td>Iraqi: IR</td>
<td>S.</td>
<td>Pr.</td>
<td>L.</td>
<td>Pg.</td>
</tr>
<tr>
<td>P.7</td>
<td>IT</td>
<td>Syrian: SY</td>
<td>S.</td>
<td>Pr.</td>
<td>L.</td>
<td>Pg.</td>
</tr>
</tbody>
</table>

RESULTS

The logical meaning is concerned with the logical structure of the clause complex, mainly taxis and logico-semantics. Taxis is concerned with the way adjacent clauses are linked to each other through dependency (hypotactic) or interdependency (paratactic) relations. As for the logico-semantics, they are associated with types of meanings which allow adjacent clauses to either Expand or Project.

(1) Types, details, and flavors of TCP protocol can be found in [36, 37, 38, 59, 60]. (P.7/SY/IT/S.2.1.4/Pr.2/L.86-87/Pg.22)

(2) Hyland (1994) further comments that hedges and boosters are two significant metadiscourse elements. (P.4/YE/AL/S.2.9.2/Pr.3/L.906-907/Pg.81)

Example (1) consists of only one clause ‘a clause simplex’, which is not covered in the logico-semantic relations. On the other hand, the citation in example (2) is the main focus that deals with the logical meanings of clause complexes. For instance, (Hyland (1994) further comments....) functions as a projecting clause and (that hedges...) functions as a projected one.

(3) In addition, Daly and Wilson’s (1983) study has also stressed on self-concept, and oral communication apprehension, while Onwuegbuzie (1998) concentrates on the relationship.... (P.3/JO/AL/S.2.6/Pr.3/L.1373-1376/Pg.84)

(4) According to Peppard and Ward (2004), service quality recognizes that the provision of some IT services will be based around.... (P.17/JO/IT/S.2.7.2/Pr.5/L.798-799/Pg.63)

In the logico-semantic relations, clauses are related through either Expansion or Projection. In Expansion, as in example (3), one clause develops or extends the meaning of the primary clause. On the other hand, in Projection as in example (4), one clause reports or quotes another clause, involving either a locution (quoting speech) or an idea (reporting thoughts).
EXPANSION

As shown in Table 6, citations with Expansion are used dominantly in the literature review chapters of IT theses with 1,156 (72.56%), compared to 1,426 (53.48%) citations in the literature review chapters of Applied Linguistics. The high use of Expansion in both fields reflects the tendency of students to add new information, restate it or develop the idea of the first clause by means of the second clause.

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Citations with clause complex</th>
<th>Citations with Expansion</th>
<th>Intra-disciplinary percentage</th>
<th>Inter-disciplinary percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applied Linguistics</td>
<td>2666</td>
<td>1426</td>
<td>53.48%</td>
<td>55.22%</td>
</tr>
<tr>
<td>Information Technology</td>
<td>1593</td>
<td>1156</td>
<td>72.56%</td>
<td>44.77%</td>
</tr>
</tbody>
</table>

The dominant use of Expansion is associated with the type of processes used in each clause of citations. It seems that EFL postgraduates used the material processes mainly in the primary clause of the clause complex. Another reason can be due to the low use of the mental and verbal processes which are used basically in Projection rather than Expansion when used in the primary clause of the clause complexes. The intra-disciplinary comparison shows that EFL postgraduates in IT depend greatly on Expansion (72.56%), compared to (53.48%) in AL in spite of having more citations. This probably reveals the effect of field as a register variable on using Expansion in citations.

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Elaboration</th>
<th>Extension</th>
<th>Enhancement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applied Linguistics</td>
<td>580 (40.67%)</td>
<td>641 (44.95%)</td>
<td>205 (14.37%)</td>
</tr>
<tr>
<td>Information Technology</td>
<td>492 (42.56%)</td>
<td>583 (50.43%)</td>
<td>81 (7%)</td>
</tr>
</tbody>
</table>

Table 7 shows that Expansion in citations with clause complexes involves three main subtypes: Elaboration, Extension, and Enhancement. Although AL and IT belong to two different domains, Extension is used more than other subtypes. This finding implies the tendency of EFL postgraduates to add information rather than restate, clarify or enhance what has been cited in the first clause of citation. The similarities in the findings can be attributed to the ethnolinguistic influences on EFL postgraduates’ use of citations. EFL Arab postgraduates in the current study may also lack information of the vocabulary and expressions used to clarify or enhance their ideas. Therefore, they attempt to cite and add information in the second clause of the clause complex in order to show to the readers their familiarity with their research topics.

ELABORATION

In Elaboration, one of the two clauses in the citation elaborates on the meaning of the other clause by restating or adding a descriptive attribute or comments to the primary clause. In other words, the secondary clause does not present new information. Elaboration under the paratactic relations between clauses of a clause complex involves three subcategories: Exposition, Exemplification, and Clarification. Clarification is used with a high percentage in AL and IT, followed by Exposition, whereas Exemplification is rarely used. This result can be attributed to several factors, such as the influence of EFL Arab postgraduates’ mother tongue. In other words, Arabic language has relative pronouns which are similar in use to the
relative pronouns used in English ‘that’ and ‘which’ that were used repeatedly in AL and IT. The percentage of using each subcategory of Elaboration is demonstrated in Table 8.

**TABLE 8. Subcategories of elaboration in the literature review chapters of AL and IT theses**

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Exposition</th>
<th>Exemplification</th>
<th>Clarification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applied Linguistics</td>
<td>56</td>
<td>11</td>
<td>513</td>
</tr>
<tr>
<td>(9.65%)</td>
<td>(1.89%)</td>
<td>(88.44%)</td>
<td></td>
</tr>
<tr>
<td>Information</td>
<td>20</td>
<td>3</td>
<td>469</td>
</tr>
<tr>
<td>(4%)</td>
<td>(0.6%)</td>
<td>(95.32%)</td>
<td></td>
</tr>
</tbody>
</table>

In Clarification, the secondary clause clarifies the content of the primary clause by some explanatory comments. The punctuations (:), (;), (–) or expressions, such as *in fact, actually, indeed, at least, e.g., viz*, are used to introduce the secondary clause.

(1) Sarafrazi and Pour (2013) apply their approach only on a binary class classification problem; *they did not test multi class classification problems.* (P.8/IT/IR/S.2.2.3/Pr.3/L.1052-1054/Pg.63)

In example (1), the secondary clause starting with ‘they did not..’ elaborates on the meaning of the primary clause by providing more explanations and clarifications.

In the hypotactic relationship, Elaboration resulted in employing non-defining relative clauses as finite or non-finite clauses to function as a descriptive gloss to the primary clause. These non-defining relative clauses can define the whole clause or any of its constituents, as in example (2).

(2) Still on this, Fitzgerald and Kiel (2001) blended the IDT into other models, *which makes the model broader.* (P.20/IT/JO/S.2.2.1/Pr.78/L.761-762/Pg.63)

Finite clauses that define the primary clause also include *that, who, and whose,* whose domain is a nominal group, as in example (3).

(3) Indeed, Chomsky’s theory has been criticized for decades by researchers such as Hudson (1980, p.6) *who referred to this idealism as ‘imaginary world’.* (P.1/AL/IR/S.2.3.1/Pr.4/L.89-90/Pg.34).

However, when the non-defining relative clause is used without punctuation, it becomes a defining relative clause within a simplex clause rather than a complex one, as in example (4).

(4) *It is given to anyone who uses the computer in his/her work...* (ICDL US, 2009). (P.13/IT/JO/S.2.10/Pr.5/L.576-577/Pg.55)

It is difficult sometimes to determine the defining or non-defining relative clause due to the absence of the punctuation. Clause complexes are also used with the non-defining relative clauses that contain *when or where* with a domain expressing time or place, as in examples (5) and (6).

(5) *He received a Bachelor of Arts degree from Columbia University in New York City, where he also studied political science* (Wang, 2010; Weatherson, 2011). (P.12/AL/IR/S.2.8/Pr.43/L.476-478/Pg.43)
(6) This restriction changed at the First International Conference on Computers and Communication 1972, when scientists demonstrated the system….. (Griffiths, 2001). (P.10/AL/JO/S.2.2.2/Pr.3/L.53-55/Pg.28)

In Exposition, the secondary clause restates the primary clause through reinforcing the content by means of punctuation (.), (;) or conjunctive expressions, such as ‘or, rather, in other words, that is to say.

(7) Critical discourse analysis then is not a simple discipline or narrowly defined theory; it is ‘not a homogenenous method, nor school or a paradigm, but at most a shared perspective…….’ (Van Dijk, 1993, p.131). (P.2/AL/JO/S.2.3/Pr.2/L.646-649/Pg.47)

In Exemplification as another subtype of Elaboration, the secondary clause develops the primary clause’s message through becoming more specific about it or strengthening it with an example using ‘for example, for instance, in particular’, and ‘e.g.’.

(8) Of particular interest is the relationship between the CEO and IT director, specifically whether or not the CEO is supportive of the IT director and IT initiatives (Feeny et al., 1992). (P.17/IT/JO/S.2.7.2/Pr.3/L.777-780/Pg.62)

EXTENSION

In Extension, the secondary clause extends the meaning of the primary clause through adding something new to it paratactically in the form of coordination by using ‘and’, ‘but’ as in examples (1) and (2) below or hypotactically through using while as in example (3).

(1) NIST reviewed the results of this preliminary research and selected MARS, RC6TM,…… (Nechvatal, Barker, Bassham, Burr, & Dworkin, 2000; Ali, 2009). (P.9/IT/IR/S.2.3.2/Pr.10/L.555-558/Pg.42)

(2) The sampling of two (Abu Shawish & Atea, 2010; Al-Sawalha & Chow, 2012) studies consisted of both gender, but Salem’s study involved only male students. (P.3/AL/JO/S.2.3.3/Pr.8/L.372/Pg.37)

At the hypotactic level, the extending dependent clause can also involve addition, replacement or alternation. This dependent clause can be finite or non-finite. Finite dependent clauses include whereas and while as introductory conjunctions, as in example (3).

(3) While it is usually close to impossible to eliminate all the risks in a constituency, the main goal is to reduce the risk exposure… [8, 87]. (P.16/IT/YE/S.2.4.3/Pr.1/L.320-322/Pg.31)

Using ‘whereas, while,’ and ‘except that’ after the primary clause results in a paratactic relationship rather than a hypotactic one, as in examples (4) and (5).

(4) Examples of a Feistel cipher include DES (National Institute of Standard and Technology or NIST, 1999) and BA (Schneier, 1994), whereas an example of an SPN cipher is AES (Daemen & Rijmen, 2002). (P. 18/IT/IR/S.2.1/Pr.4/L.31-33/Pg.12)
(5) In addition, Daly and Wilson’s (1983) study has also stressed on self-concept, and oral communication apprehension, while Onwuegbuzie (1998) concentrates on the relationship between writing apprehension and learning styles.

Hypotactically, imperfective non-finite clauses are also used in extension, as in example (6) below.

(6) After analysing their communicative purposes, Yates and Orlikowski (1992) identified business letters,........ (P.2/AL/OJ/S.2.2.3/Pr.7/L.503-505/Pg.40-41)

Using Extension with a high percentage in two different fields may reveal the common strategy of EFL postgraduates who have a similar social, cultural and educational background. This finding is supported by Hu and Wang (2014) who showed the ethnolinguistic influences on students’ citations in academic writing. The Arabic language may also have influences represented mainly by having similar conjunctions with English, such as ‘and, after, while, whereas,’. Another possible reason is lack of knowledge on using other subcategories. Therefore, EFL postgraduates depended heavily on Extension.

**ENHANCEMENT**

Similar to Elaboration and Extension, in Enhancement, two clauses are involved. The meaning of the primary clause is enhanced in the secondary clause by referring to time, place, manner, cause or conditions. Example (1) demonstrates the causal condition using ‘because’ in the secondary clause.

(1) There is no specific definition of distance learning (Arafeh, 2004; Elena, 2006) because it is a mixture of many sciences such as education, business, psychology, information technology, and information technology. (P. 13/IT/OJ/S.2.2/Pr.1/L.95-97/Pg.29)

Similarly, in example (2) below, two clauses are used in cause-effect relation, in which the second clause enhances the first clause.

(2) It also makes teachers aware of the underlying beliefs and assumptions about learning and teaching so that they can understand why they do what they do and what might need to change (McLean, 2007). (P.5/AL/YE/S.2.2.4/Pr.3/L.202-205/Pg.40)

In brief, the relationship between clauses of the clause complex of citations was realised through Expansion, which is subcategorised into three categories: Elaboration, Extension, and Enhancement. Though several studies have been conducted on reporting verbs (Thompson and Ye 1991, Thomas and Hawes 1994, Hyland 1999, Yang, 2013), the type of the clause has not been focused on; therefore, the issue of the logico-semantic relations has not been comprehensively discussed in these studies, compared to the present study.

**Projection** is presented in the following section as another aspect of the logico-semantic relations.

**PROJECTION**

In Projection, two clauses are involved; one clause is projecting, whereas the other one is projected. The projecting clause involves either verbal or mental processes. Examples (1) and
(2) demonstrate using the verbal process ‘stated’ and the mental process ‘believe’ in the projecting clauses, respectively.

(1) In addition, they stated that different RTO parameters in different mobility rates had yielded various TCP performance results. (P.7/IT/SY/S.2.3.1.1/Pr.17/L.553-554/Pg.45)

(2) Horwitz et al. (1986) believe that communication apprehension plays the most important role…………. (P.19/AL/YE/S.2.12.4.1/Pr.1/L.1183-1184/Pg.68)

These clause complexes represent Projection as a logico-semantic relationship of the clause complex used in citations. The literature review chapters of AL theses include 465 citations with Projection, compared to only 162 in IT, as in Table 9.

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Citations with Projection</th>
<th>Intra-Disciplinary Projection</th>
<th>Inter-Disciplinary Projection</th>
</tr>
</thead>
<tbody>
<tr>
<td>AL</td>
<td>465</td>
<td>17.44%</td>
<td>74.17%</td>
</tr>
<tr>
<td>IT</td>
<td>162</td>
<td>10.16%</td>
<td>25.83%</td>
</tr>
</tbody>
</table>

The high density of Projection in AL reflects that EFL PhD Arab postgraduates in this soft domain depend more on reporting ideas or quoting speech in using citations. This reflects the disciplinary influence, represented by field as a register variable on using the logico-semantic relationships in citations. Projection as a logico-semantic relationship is found to have several subtypes, demonstrated in Table 10.

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Quoting</th>
<th>Reporting</th>
<th>Quoting/Reporting</th>
<th>Suggestion</th>
<th>Free Indirect Speech</th>
<th>Facts</th>
</tr>
</thead>
<tbody>
<tr>
<td>AL</td>
<td>99</td>
<td>38</td>
<td>244</td>
<td>43</td>
<td>28</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>21.29%</td>
<td>8.17%</td>
<td>52.47%</td>
<td>9.24%</td>
<td>6.2%</td>
<td>2.79%</td>
</tr>
<tr>
<td>IT</td>
<td>5</td>
<td>20</td>
<td>104</td>
<td>20</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>3.8%</td>
<td>12.34%</td>
<td>64.19%</td>
<td>12.34%</td>
<td>5.5%</td>
<td>2.4%</td>
</tr>
</tbody>
</table>

The most distinctive aspect in using subcategories of Projection is the similarity in using Reporting/Quoting with a higher percentage in both AL and IT. A possible reason for the high use of Reporting/Quoting is EFL Arab postgraduates’ insufficient instructions on using ‘verbal’ and ‘mental’ processes appropriately, which were probably used randomly in Quoting/Reporting.

Although the number of citations with clause complexes in IT is lower than AL, EFL postgraduates in IT depended heavily on Reporting/Quoting. The intra-disciplinary comparison shows that 64.19% of Projection is used in Quoting/Reporting in IT, compared to 52.47% in AL. This comparison demonstrates the influence of discipline ‘field’ on using Reporting/Quoting. Another distinguishing aspect between AL and IT is using the projected clause in the form of a quotation. For instance, 21.29% of Projection is used as Quoting in AL, whereas only 3.8% is used in IT. This illustrates clearly the disciplinary influence on using Quoting. This could also reveal the attempt of EFL postgraduates in AL to show the importance and the strength of their arguments by quoting directly what other authors have said, suggested or reported. On the other hand, IT is a hard domain that focuses more on facts and methodological procedures rather than arguments. Hence, quotations were less used.
Quoting Direct Speech is achieved by means of two clauses: the projecting clause and the projected one. The projecting clause includes a verbal process, whereas the projected clause represents what is being quoted, and includes any type of processes, as in example (1).

(1) Haraism (1993, p. 15) mentioned that: “human communication has become the major use of computer networks.” (P. 10/JO/S.2.2.4/Pr.1/L.119-121/Pg.32)

The structure that governs the projecting and the projected clauses in the Quoting type is paratactic. However, EFL postgraduates used Quoting ‘Direct Speech’ inappropriately because of using ‘that’ with the projecting clause to introduce the projected one. Therefore, it is more appropriate to omit ‘that’ in such type of projection to become as follows:

(2) Haraism (1993, p. 15) mentioned “human communication has become the major use of computer networks….

In Quoting ‘Direct Speech’, the verbal processes employed in the projecting clause include ‘say’, verbs related to statements, such as ‘tell, point out, report’, and verbs related to questions, such as ‘ask, inquire, demand’. Other verbal processes involved in the projecting clause include ‘explain’ and ‘continue’. Verbal processes used in non-integral citations are not used in Quoting Direct Speech. Rather, they are used in Reporting ‘Indirect Speech’ as another type of Projection.

(3) Researchers argued that reflective practice has no universal definition……(Akbari, 2007; Farrell, 2007, 2008…). (P. 5/YE/S.2.2.1/Pr.1/L.84-86/Pg.34)

(4) The literature on the importance and effects of presenting politics to the public through LNTSs indicates that several studies have been carried out in the fields of politics and media (Baum, 2003, 2008;…). (P. 12/IR/S.2.3/Pr.4/L.136-140/Pg.28-29)

EFL postgraduates’ inappropriate use of projection is also represented by separating between the projecting clause and the projected one using a comma (,). The other inappropriate use is using ‘that’ with the projecting clause in Quoting Direct Speech. In such type of Projection, the relationship between the projecting clause and the projected one is paratactic rather than hypotactic. Therefore, each clause can stand alone independently.

(5) French and Raven (1959) point out that, "the strength of coercive power depends on the magnitude of the negative valence of the threatened punishment……." (p.157). (P.12/IR/S.2.16/Pr.3/L.1286-1288/Pg.80)

Thus it is more appropriate to delete both ‘that’ and the comma (,) to make the citation as in example (6).

(6) French and Raven (1959) point out "the strength of coercive power depends on the magnitude of the negative valence of the threatened punishment……."
Using verbal processes in Reporting Indirect Speech rather than Quoting Direct Speech represents another inappropriate use. Consequently, it is more appropriate to use verbal processes to Quote Direct Speech. In example (7) below, the verbal process ‘points out’ is used inappropriately in Reporting Indirect Speech.

(7) He points out that although such assertion of the writer's conviction can be seen as leaving little room for the reader's own interpretations, ……… (P.4/AL/YE/S.2.2.2/Pr.2/L.97-100/Pg.42-43)

Consequently, instead of using the verbal process ‘point out’ with reporting, it is more appropriate to use it with Quoting Direct Speech without using ‘that’ as follows:

(8) He points out ‘although …… interpersonal solidarity’.

Inappropriate use of Projection may reveal that EFL Arab postgraduates lack sufficient knowledge on using projection academically.

REPORTING ‘INDIRECT SPEECH’

Similar to Quoting Direct Speech, Reporting Indirect Speech involves two clauses. In this type of Projection, language is used to report thoughts by using mental processes of cognition in the projecting clause, whereas the projected clause is a meaning that includes any type of processes. The basic pattern for projecting meanings is hypotactic, thus signifying that the projected clause is dependent on the projecting clause, as in examples (1) and (2) below.

(1) Herring (2000) believes that both men and women transfer the already-present gender differences ……… (P. 10/JO/AL/S.2.3.2.1/Pr.2/L.677-679/Pg.57)

(2) He feels that developers should utilize check-lists …..(P.20/IT/JO/S.2.2.3/Pr.12/L.1250-1251/Pg.90)

In spite of its hard domain, the literature review chapters of IT have Reporting Indirect Speech in the second rank in terms of percentage. This may demonstrate unawareness of EFL Arab postgraduates in IT of the implied evaluation in using the mental processes. On the other hand, Reporting Indirect Speech occupies the fourth rank in terms of percentage in the literature review chapters of AL. This reveals the effect of field as a register variable on the use of Reporting Indirect Speech.

REPORTING SPEECH, QUOTING THOUGHTS

Verbal processes, which are used in Quoting Direct Speech and presenting it as wordings, are also used in reporting a saying and presenting it as a meaning. Thus it is called ‘Reported Speech’ or ‘Indirect Speech’. The clause complex in this type of Projection consists of two clauses joined hypotactically, as in example (1) below.

(1) However, she pointed out that a distinction between computer-mediated discourse (CMD) and CMC should be made clear; (P. 10/AL/JO/S.2.2.1/Pr.2/L.20-21/Pg.27)
Some verbal processes are used only in Reporting rather than Quoting, including ‘hypothesise’ and ‘claim’, and these are used appropriately by some EFL postgraduates as in examples (2) and (3).

(2) *Similarly, Hughey et al., (1983) claim that writing is a skill developed during the lifetime of the person…..* (P.3/AL/JO/S.2.1/Pr.3/L.16-18/Pg.20)
(3) *Krashen’s Monitor Model hypothesizes that linguistic competence can be achieved by means of natural language acquisition…..* (P.6/AL/IR/S.2.1/Pr.2/L.22-24/Pg.23)

However, some of the verbal processes were used inappropriately; they were used in Quoting. In other words, it is more appropriate to use these verbal processes in Reporting Speech only rather than Quoting. In examples (4) and (5), citations are used inappropriately because the verbal processes ‘hypothesised’ and ‘claim’ are used to Quote Direct Speech.

(4) *He hypothesized that “the majority of the misunderstandings in CMC are associated with misinterpretation of messages…”* (p. 208). (P.2/AL/JO/S.2.4.1/Pr.7/L.1147-1149/Pg.70)
(5) *Additionally, Kroll (1979) claims that “positive attitudes lead to more writing, ……………….”* (p. 6). (P. 3/AL/JO/S.2.6.5/Pr.2/L.1434-1436/Pg.91)

Mental processes when used in projection are used in Reporting rather than Quoting. However, for the mental processes ‘think’ and ‘reflect’, it is appropriate to use them in Quoting Direct Speech. The mental process ‘thought’ in example (6) is used appropriately by some EFL postgraduates.

(6) *For example, Kojak (1983, p. 39) thought that "men approach the more prestigious classical variety of Arabic……."* (P.1/AL/IR/S.2.7.1/Pr.9/L.536-538/Pg.55)

Another inappropriate use is employing the mental process ‘believe’ in Quoting Direct Speech as in example (7).

(7) *Bayram (2010) believes that, "politics is a struggle for power……."* (p.24). (P. 12/AL/IR/S.2.15/Pr.1/L.1116-1118/Pg.72)

Other inappropriate use of Projection included using material processes to either report or quote since Projection is limited only to verbal and mental processes. Examples (8) and (9) clarify how the material processes ‘wrote’ and ‘documented’ are used inappropriately in the projecting clauses.

(8) *Licklider and Vezza (1978) wrote that it soon became obvious that the ARPANET (the Internet today) was becoming a human-communication medium…….* (P.2/AL/JO/S.2.4/Pr.3/L.1063-1068/Pg.66)
(9) *Furthermore, Pearson, Bahmanziari, Crosby & Conrad (2003) has empirically documented that culture has less influence on CSE.* (P.20/IT/JO/S.2.2.1/Pr.46/L.907-908/Pg.71)
Thus EFL Arab postgraduates’ lack of sufficient information on using processes in clause complexes resulted in their inappropriate use. Such unawareness of using Projection has resulted in a high use of the Reporting/Quoting subcategory in the literature review chapters of both AL and IT theses.

**PROJECTING SUGGESTIONS**

Projection is also used in suggestions through verbal processes, such as suggest, recommend, agree, and propose, as in example (1) below.

(1) Similarly, Faerch and Kasper’s (1983) taxonomy suggests that the speakers who face a communication problem have two options.....

(P.19/AL/YE/S.2.5.4.3/Pr.3/L.416-419/Pg.24)

In example (1), the verbal process ‘suggest’ is used to project a suggestion, and is followed by a projected clause. Projecting suggestions involves using non-finite clauses, such as the imperfective clause in example (2) or the perfective clause in example (3) below.

(2) Liesching (1979) suggests having a film whose pace of delivery is slower.......

(P.6/AL/IR/S.2.5/Pr.6/L.285-286/Pg.34)

(3) As a future work, the authors suggest to examine higher order regression parameters. (P.8/IT/IR/S.2.1/Pr.15/L.187-188/Pg.22)

Projecting suggestions has the second rank of percentage in the literature review of IT. On the other hand, the literature review of AL occupies the third rank in terms of the number of frequencies. This finding may illustrate the dependence of EFL postgraduates in IT on verbal processes, such as ‘suggest, propose, and recommend’ in order to create a research gap and justify conducting their research studies.

**FREE INDIRECT SPEECH**

In Free Indirect Speech, the clause complex consists of two clauses. In contrast to other types of projection, in Free Indirect Speech, the projected clause is independent, whereas the projecting clause is dependent through using the conjunctive expression ‘as’ as a non-finite clause in example (1) or a finite clause in examples (2) and (3). The projected clause takes the form of Reporting that is projected by either verbal or mental processes.

(1) As mentioned earlier, Devitt (1991) examined the genre in a tax accounting community.

(P.2/AL/JO/S.2.3.1/Pr.4/L.731-732/Pg.51)

(2) As Markkanen and Schroder (2006) point out, there is no clear-cut list of hedges...

(P.4/AL/YE/S.2.4.1/Pr.1/L.207-209/Pg.48)

(3) Such differences, as the writers suggest, result from a female concern with relationships and a male concern with systems and analysis.

(P.4/AL/YE/S.2.5.2/Pr.4/L.573-575/Pg.65)

The position of the projecting clause may come first as in examples (1) and (2) or mediate the projected clause, as in example (3).
**FACTS**

Facts can be also revealed through Projection that is represented in a ready projected form. In other words, Facts are projected impersonally through using impersonal structures involving mental or verbal processes.

(1) *Therefore, it has been noticed that successful application using datasets of large numbers of features, would be difficult to manipulate* (Wang, 2012;.....). (P.8/IT/IR/S.2.2.2/Pr.1/L.689-692/Pg.46)

Using impersonal structures, such as ‘it has been noticed....’ in example (1) could be probably more effective in IT, since disciplines in this domain are based on facts. However, Facts as a subtype of projection is rarely used in IT; it is used only (4) times, whereas it is used (13) times in the literature review chapters of AL. This possibly emphasises that EFL Arab postgraduates have not received sufficient instructions on using Projection. As a result, they could not employ Facts purposefully as an impersonal structure, particularly in their writing of the literature review chapters of IT theses.

Unlike previous studies which have focused on either reporting verbs (Thompson and Ye 1991, Thomas and Hawes 1994, Hyland 1999, Yang 2013) or classifying the citation as either reporting or non-reporting (Swales 2014), the findings of the present study could highlight several aspects of Projection which were used with similarities and differences by EFL postgraduates in two different disciplines.

**A COMBINATION OF PROJECTION AND EXPANSION**

The logico-semantic relationships are not limited only to Expansion and Projection. Rather, they involve a combination of the two types which resulted in another type of logico-semantic relationships. This mixed type is characterised by having more than two clauses in a citation. In such a proposed type of logico-semantic relations, Extension, Elaboration or Enhancement are used with any subcategory of Projection. The mixed type of logico-semantics has the second percentage, following Expansion in both AL and IT theses, as in Table 11.

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Citations with Projection and Expansion</th>
<th>Intra-Disciplinary</th>
<th>Inter-Disciplinary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applied Linguistics</td>
<td>775</td>
<td>29.6%</td>
<td>81.57%</td>
</tr>
<tr>
<td>Information Technology</td>
<td>175</td>
<td>17.26%</td>
<td>18.43%</td>
</tr>
</tbody>
</table>

Table 11 demonstrates the similarity in using a combination of Projection and Expansion in terms of the high occurrences following Expansion. The literature review of AL has a higher frequency (775), compared to (175) occurrences in IT. Using a mixed type of the logico-semantic relations by EFL postgraduates can be probably attributed to the effect of their L1. This variety in frequencies also illustrates the disciplinary influence of ‘field’ as a register variable. In addition, the high density of citations in the literature review of AL led to an increase in this mixed type.

(1) *As one adolescent reported: ”If you don't use the technology, you are not part of the group”, and he also said that: ”If you are not a name or a number in my phone*
book, then you're not on my radar screen" (Grinter & Eldridge, 2001)(P.10/AL/JO/S.2.4.1.1/Pr.4/L.1174-1176/Pg.81)

(2) He suggested that the practice of poets on this point is extremely useful for learning simple tense, and added that the distinctions between the English simple present and progressive forms have long intrigued and perplexed students of the language. (P.6/AL/IR/S.2.8.2/Pr.1/L.518-521/Pg.46)

(3) For example, Jones and van Rijsbergen (1976) showed that 250 queries are usually acceptable while Leung suggests that 20 queries are enough (Leung & Ip, 2000). (P.18/IT/IR/S.2.1.6/Pr.12/L.337-339/Pg.34-35)

In examples (1), (2), and (3), each citation includes four clauses; each two clauses realise Projection as a logico-semantic relationship. This Projection is expanded by another Projection by means of using the conjunctive expressions ‘and’ in examples (1) and (2), and ‘while’ in example (3).

In example (4), the projecting clause is used to project two projected clauses; one projected clause follows the projecting clause directly, whereas the second projected clause follows the first projected clause, and is extended through the conjunctive expression ‘and’.

(4) Since then, experts in the teacher education and staff development realized that teaching is complex and that teachers’ professional knowledge can be developed and constructed.....(Brookfield, 1995;.....). (P.5/YE/AL/S.2.1/Pr.2/L.13-17/Pg.31)

In example (5) below, the citation consists of Projection that is expanded by Elaboration. Hence, such mixed type of Projection and Expansion can be called Expanded ‘Elaborated’ Projection. The punctuation (;) is used to separate between Projection and the elaborating clause.

(5) In A Course in General Linguistics (1974 [1916]), Saussure explained that language is a dual activity on many levels; it is a combination of articulation and perception; sound and meaning; individual and social; present and past (1974, pp. 8-9). (P.1/AL/IR/S.2.3.1/Pr.1/L.41-43/Pg.32)

Enhancement as a type of Expansion that expresses cause and spatial time is also combined with Projection following the clause complex of Projection, thus forming what can be called Expanded ‘Enhanced’ Projection, as in example (6).

(6) Most importantly, even political analysts do believe that the role of the talk shows is crucial in politics since political events, now, are closely associated with what is being said, presented and performed by the politicians interviewed in these Shows (Fernando, 2003). (P.12/IR/AL/S.2.3/Pr.4/L.125-128/Pg.28)

In another subtype of Projection, three clauses are used in one citation.

(7) In addition, the continuous appearances of the presidential candidates suggest that they do believe that their appearances in these television talk shows are politically influential (Baum, 2003; Baum & Jamison, 2010). (P.12/AL/IR/S.2.3/Pr.4/L.129-132/Pg.28)

In example (7), three clauses are used. The first projecting clause includes the verbal process ‘suggest’ that is followed by a projected clause with the mental process ‘believe’. This latter projected clause functions as another projecting clause that is followed by another
projected clause. In summary, the mixed type of *Projection* and *Expansion* in one citation with its diverse subtypes was another way of structuring clauses to realise the logico-semantic relationships of citations with clause complexes.

Figure 6 shows three main types of logico-semantics used in the citations with clause complexes in the literature review of AL and IT theses. These logico-semantics include *Expansion*, *Projection*, and a combination of *Expansion* and *Projection*. Based on these findings, the two logico-semantics (*Projection* and *Expansion*) described by Halliday (1985) can be extended by adding a third type combining both in a new proposed classification. Table 12 demonstrates the proposed reclassification of the logico-semantic relations in citations with clause complexes.

<table>
<thead>
<tr>
<th>Logico-semantic relations of clause complexes</th>
<th>I. Expansion</th>
<th>II. Projection</th>
<th>III. Combination of Expansion and Projection</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Extension</td>
<td>A. Quoting ‘direct speech’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. Enhancement</td>
<td>B. Reporting ‘indirect speech’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. Elaboration</td>
<td>C. Reporting speech, Quoting thoughts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Exposition</td>
<td>D. Projecting suggestions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Exemplification</td>
<td>E. Free indirect speech</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Clarification</td>
<td>F. Facts</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The proposed type of the combination of *Projection* and *Expansion* could present an analysis of clause complexes with more than two clauses. Therefore, the findings of the present study could probably contribute theoretically to the SFL by adding this proposed type to the two main logico-semantic relations ‘Expansion’ and ‘Projection’.

**DISCUSSION**

The study explored the logico-semantic relations in citations with clause complexes. Three types of logico-semantics were used: Projection, Expansion, and a combination of Projection and Expansion. Projection depends mainly on using *Verbal* and *Mental* processes, whereas *Expansion* depends on using material, relational, behavioural or existential processes in the primary clause. The proposed type of logico-semantic relations involved a combination of Projection and Expansion in one citation.
These types provide a clear description of the relationships that govern clause complexes in citations rather than limiting the description to reporting or non-reporting citations as in Swales (2014) or as Verb controlling, Naming or Non-citation as in Thompson’s (2002) findings. The combination of both Projection and Expansion in one citation shows the ethnolinguistic influences on using citations by EFL postgraduates (Hu and Wang 2014), specifically the possible influence of their L1. The intra-disciplinary percentage of Expansion reveals the effect of field as a register variable (Halliday 1985) on using citations with clause complexes; writers in this field (IT) depended more on material processes, such as study, employ, use, and examine. These types of processes probably reflect the real world, thus supporting more evidence to fields like IT that are based on facts rather than arguments.

Despite the realised variations in the employment of certain features, such as nominal groups in textbooks of hard and soft sciences which can be pedagogically inspiring (Jalilifar, White, & Malekizadeh 2017), Hyland (2006) argues that disciplines have shared features as a register of academic discourses. This argument could justify the similarities of using the logico-semantics in citations of the literature review of AL and IT despite their different disciplines.

The resulted taxonomy of the processes in the present study could be useful in analysing clauses. Only two types of processes that are Verbal and Mental are used in Projection. Consequently, processes can be reclassified as Projecting processes, including Verbal and Mental, whereas Non-projecting processes used for Expansion include Material, Behavioural, Relational, and Existential. Processes like find, show, demonstrate, report which were classified as finding verbs under Research activity verbs in previous studies (Thompson & Ye 1991, Hyland 1999), can be reclassified in the present study as Verbal processes because these types of processes can be used in the projecting clause to either report or quote. Hence, under the Verbal processes, there may be several sub-classifications, including Findings processes, such as find and show, processes of Arguing and Stating, such as state, argue, and confirm, and processes for Suggestion, such as suggest, propose, and assume. Therefore, further studies are needed in order to identify the types of processes used in the clause simplex as well as the clause complex of the citations adopting the SFL approach.

As argued by Hyland (2002), the notion of genre and its applications in teaching and learning has attracted an increasing interest. Consequently, the findings related to citations, as advocated by Shooshtari, Jalilifar and Somaieyeh (2017), have pedagogical implications and could be employed for two significant goals. First, ESP/EAP courses could be developed by including teaching materials related to citations. Second, as Hyland (2017) argues, students must learn to craft their writing in community-specific ways. Therefore, postgraduate students can employ the findings of this study to appropriately report and quote in their academic writing. English for Academic Purposes materials present the possibility of increasing our understanding of the variety in language use in different academic communities in order to introduce highly strong foundations for pedagogical purposes (Hyland and Hamp-Lyons 2002). ESP researchers can explore the applicability of learning theories from SFL and NR to ESP (Cheng 2006). For example, a typical ESP genre-based writing class directed towards non-native speakers and novice writers could lead students from different disciplines to explore the genre-specific features and the disciplinary practices used in research articles, dissertations or PhD theses. EFLs can be also engaged in a discipline-specific writing task. Such focuses and practices could be considered an effective tool that the learners need in order to develop their L2 academic writing (Cheng 2006).
CONCLUSION

Logico-semantic relations in citations with clause complexes in the present study involved Expansion, Projection, and a combination of Projection and Expansion. The high density of Expansion, followed by a combination of Expansion and Projection, and then Projection in both disciplines (Applied Linguistics and Information Technology) illustrates firstly a similarity in the citations performance of EFL Arab postgraduates in spite of the different domains to which each discipline belongs. Secondly, material, relational and behavioural processes were used with a higher frequency in the first (main) clause of the clause complex compared with verbal and mental processes. Thirdly, the proposed type of logico-semantic relations that involved a combination of Projection and Expansion implies the tendency of EFL Arab postgraduates in different disciplines to use more than two clauses in one citation. Consequently, as suggested by Ang and Tan (2018), a discipline-specific approach should be followed in EAP teaching and learning. It is therefore pedagogically significant to enhance the awareness of novice writers towards citation practices in different academic genres and disciplines. One approach to academic language is influenced by a genre-based literacy programme (e.g., Christie 1992, 1999) that is grounded in SFL (Halliday 1985, Halliday & Matthiessen 2014). Genre-based pedagogy supports explicitly teaching academic registers that students need. Particularly, it consists of teaching linguistic features employed in specific academic genres that students are usually involved in (Aguirre-Muñoz & Boscardin 2009).

REFERENCES


