

# Nominalization in the Writing of Novice vs. Experienced Members of Academic Communities: A Comparative Discourse Analysis

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## Abstract

The language register used in academic communities has the special features of density, complexity, and abstractness associated with nominalization with which new members of the communities might not be familiar. To explore the possible distance between novice and established members regarding their awareness of this grammatical feature, the present study investigated the employment of nominalization in the writings of Iranian graduate students (both MA and PhD students) and experienced figures in applied linguistics. Forty five research articles in the discipline by the three groups of writers served as the corpus of the study. A rigorous analysis began by identifying and outlining nominalization instances manually through and per all rhetorical sections of the articles. The occurrences of the two types of nominal expressions were counted and normalized. So as to detect the possible significant differences between the samples, Chi-square tests were run. The results revealed that the experienced writers used significantly more nominalization in their writings. However, although the total nominal expressions used in MA texts were more than those used in PhD texts, the difference turned out not to be significant. There were also similarities and variations in the ranking patterns of the two types of nominalization in four rhetorical sections of the three groups of the articles. It can be concluded that the differences might reflect the distance between the novice and the established authors regarding their awareness of the importance of nominalization in academic writing. The implications of the study for EAP courses were also discussed.

**Keywords:** Nominalization, Academic Writing, Novice Writers, Established Writers, Research Articles

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## **1.Introduction**

Graduate students, embarking on practicing as new members of academic communities and attempting to start communicating with the other members, are expected to be able to make use of a language register differing from the ones they had encountered in their casual interactions. For most of these students, this seems to be their first attempt in the actual and serious use of this relatively unfamiliar register as a requirement to fulfill their degrees in the forms of theses, dissertations, and research papers. There is no doubt that the new context or situation demands a different selection of terminologies, grammatical constructions, and discourse patterns for the purpose of successful communication (Gilquin&Paquot, 2008; Russell, 2014). Naturally, the process of accommodating to such unfamiliar features can be problematic for the students. Particularly, in EFL contexts, these problems are multiplied by the complexities and intricacies involved in acquiring the language itself (Shokouhi&Talati-Baghsiahi, 2009).

In Iranian situation, graduate students are recently required to publish at least one research article while they receive no particular formal training for the task specifically about the dominant and prominent features of the discourse. As a result, it appears that the features of academic language are not entirely known to them (Talati-Baghsiahi&Khoshsima, 2016). Consequently, this might lead to the composition of research articles which are not acceptable to the established members of their respective scientific communities who develop and use this specialized language and behave as the gatekeepers for the scientific communities to ensure that young researchers and novice writers write in the appropriate ways. Thus, these papers fail to be published in journals of good standing.

### *Nominalization in the Writing of Novice vs. Experienced...*

Over the last decades, a large body of research has attempted to investigate the grammatical features of scientific register employing corpus-driven approaches. (see Gray & Biber, 2015). Many of these studies have examined the use and distribution of nominalization as grammatical metaphor in various discourses. Some of them have compared spoken with written academic discourse (Norouzi, KhomeijaniFarahani, & BorzabadiFarahani, 2012); some have investigated the differences and similarities between discourses produced by natives and non-natives (Kazemi, 2014; Mahbudi, Mahbudi, & Amalsaleh, 2014; Naghizadeh & Naghizadeh, 2014; Terblanche, 2009; Wenyan, 2012); others have been interested in exploring nominalization distribution cross-linguistically (Jallilifar & Shirali, 2014); and some others have detected the historical variation of this grammatical metaphor in specific discourse (Banks, 2008). However, to the researcher's knowledge, few, if any, studies have concentrated on the possible distance existing between novicewriters and the experienced or established members of academic communities. The present study, with the hope to bridge the gap, incorporates the concept of academic register in that it seeks to explore whether Iranian graduate students as novice members, compared to experienced writers as established members of academic communities, use nominalization more or less frequently in their academic papers.

## **2. Nominalization**

Nominalization has been defined by different scholars from different perspectives. Wang (2010) referred to nominalization as a process whereby a verb or an adjective is converted into a nominal group. It was also defined by Martin and Rose (2007) as a strategy "in which a semantic category such as a process is realized by an atypical class as a noun instead of a verb" (p.

106). Following Halliday's terminology, Juznic (2012) described nominalization as "a type of grammatical metaphor whereby processes, which are congruently realized by verbs, are metaphorically realized by nouns expressing the same process as those verbs" (p.251). In the same way, Halliday and Matthiessen (2014, p. 656) believe that nominalization is "the single most powerful resource" for producing such grammatical metaphors. Generally, it refers to the transformation of a verb or an adjective into a noun, with or without morphological change, so that the reconstructed word can act as the head of a noun phrase. In other words, a verb appears to denote a concept rather than an action, and an adjective becomes an entity rather than a feature. As a consequence, the tone of the discourse sounds more abstract as well as more formal. In addition, nominalization is believed to be one of the most important resources and powerful structures of creating a lexically dense style via building long noun phrases which differentiates spoken and written discourses. This density can also be the result of the "process of syntactic reduction" (Fowler, Hodge, Kress, & Trew, 1979, p. 41), which helps to construct texts economically. Nominalization also helps create textual cohesion (Mueller, 2015), and remove human participants and make the text more objective (Baratta, 2010). This latter use of nominalization occurs via removing the responsibility from a human participant and hence objectifying the process (Kazemian & Hashemi, 2014).

Based on the word origin, morphological structure, and the function in the grammatical structure of the clause, nominalization has been classified into different types. Accordingly, different researchers represent various categorizations of nominalizations (see Carolyn, 2004; Hartnett, 1998; Rodby & Winterowd, 2005). Yet, for the purposes of the present study, Halliday & Matthiessen's (2014) types are adopted to be investigated. They

### *Nominalization in the Writing of Novice vs. Experienced...*

introduced two general categories of nominalizations, verbal nominalization (fail → failure) and adjectival nominalization (high → height).

## **2.1. Scientific Register and Nominalization**

Halliday (2004) points out the importance of studying the language of science, since like other registers it seems to demand its own linguistic features. The situation or context demands a different selection and deployment of terminologies, grammatical constructions, and discourse patterns and style for the purpose of proper and successful communication. It means that specific linguistic structures are needed to be applied in a scientific domain to convey the intended message to the target discourse community in an appropriate way.

An important characteristic of scientific discourse is its information density and its concomitant complexity of structure. The scientific register is, due to the nature of science, a language in which theories are constructed and complex notions are expressed and this requires linguistic resources that make theoretical discourse possible. The complexity of the scientific language is not necessarily confined to the lexical level but it can also be realized in a range of specific grammatical structures that typify discourse. Language used in academic domain has also the special feature of abstractness. All these three features—density, complexity, and abstractness—are also the characteristics of nominalization and can be achieved mainly through applying nominalization as a grammatical metaphor in discourse (Halliday & Matthiessen, 2014).

Nominalization is regarded as one of the most important resources of producing lexical density which distinguishes spoken and written language (Norouzi et al., 2012). In general, it is considered that nominalizations compact information, which is typically useful in formal text writing. A writer, for instance, can include a whole proposition, which is metaphorically expressed

via a nominalization, in another clause, subsuming more than a proposition in a single clause. As a result, it leads to a decrease in the number of words and an increase in the level of lexical and semantic density. Nominalizations, therefore, as the shortened form of clauses, add to the lexical density and complexity leading to the semantic load of language. In fact, these aspects of nominalizations have close connections with the characteristics of scientific register. This could be considered as the reason why Halliday (1998) asserted that nominalizations take very important parts in technical and scientific registers.

Nominalization as a means of packaging information is of abundant use both in written and spoken scientific discourse. However, the written mode lends itself better to the application of nominalization due to its very nature. Research articles as part of scientific writing are widely believed to be typified as containing numerous nominalizations. Language used in academic papers possesses the special properties of density, complexity, and abstractness which are a reflection of nominalization. It is generally associated with the prototype of being more complex and difficult than non-scientific registers. There is no doubt that such complexity is the result of authors' attempts to subsume more information in fewer words than it is typical in normal language. In other words, it is nominalization that is an aspect of complexity in academic writing (Halliday & Matthiessen, 2014). According to Bhatia (1993), "nominal compounds are the main carrier of information in academic scientific writing" (p. 151). Studies have also revealed that nominalizations were found to appear most frequently in academic writings. Chafe and Danielewicz (1987) have found that many nominalizations have become part of the standard scientific terminology, without which academic authors would not be able to actualize their ideas within their respected disciplines.

### *Nominalization in the Writing of Novice vs. Experienced...*

It seems that nominalization took a more noticeable part in modern science. Studies have approved the historical increase of nominalization within science domains (Halliday & Martin, 1994). According to Banks (2008), “nominalizations have increased in use historically in both physical and biological science” (p. 124). Biber and Gray (2013) also proposed that the abundant employment of nominalizations in scientific writing is mostly an incident in the 20th Century.

### **3. Related Research**

Nominalization has been investigated extensively from diverse perspectives by researchers of all linguistic interests (eg., Holtz, 2009; Kazemi, 2014; Terblanche, 2009; Wenyan, 2012). Findings from such studies revealed that nominalization appears with a higher frequency in written texts than in spoken texts (eg., Norouzi et al. 2012). Moreover, some researchers have concentrated on exploring the distribution and frequency of nominalizations in the abstract parts of papers in comparison to the research articles. The results of such studies unanimously reported a higher frequency of nominalization in abstracts which appropriately depict the informational density of the abstracts (Holtz, 2009). Other studies on nominalization found more in science related articles than social science or humanities (Holtz, 2009; Sarfo-Adu, 2015), and more deverbal nominalizations than adjective-derived nominalization (Norouzi et al. 2012).

A large body of related studies has concentrated on the comparison of texts written by native and non-native English writers of the academic communities. (Kazemi, 2014; Mahbudi et al., 2014; Naghizadeh et al., 2014; Terblanche, 2009; Wenyan, 2012). Most of the studies conducted in this domain, have reported that the native writers use more nominalizations than the non-native ones. Yet,

some have declared that they did not detect any difference between the two (eg.,Kazemi, 2014).

However, literature on discourse characteristics of experienced writers as established members of academic communities seem to be incredibly scant. This might appear to imply that English native authors, regardless of being novice or established members of the communities, are the only disciplinary figures who lay down the standards and conventions for the other members of the community. Therefore, the non-native ones, regardless of their expertise, take little part in establishing the community norms and conventions. This idea, however, can be justifiable when the aims are directed to the cross-linguistic and cross-cultural variations. Nevertheless, when register or disciplinary features are concerned, it appears more logical to adopt the established members' discourses as the criteria upon which the other ones' are assessed since they are considered as the ones who best follow the community and the disciplinary norms. Therefore, the established members of the community and the experienced users of the register should be regarded as the ones whose writings are standard and who are the gatekeepers of the community.

To the best of the researcher's knowledge, however, no studies have been conducted to work on the possible distance existing between novice and experienced authors as members of academic community with regard to the employment and distribution of nominalizations in their research papers. The present paper, with the hope of bridging the gap, aims at contributing to paving the way for the new members of academic communities to demonstrate an effective participation in related literature development. To this end, it decides to explore the possible distance existing between the Iranian graduate student writers as novice members and experienced authors as established ones in terms of employment and distribution of nominalization as an important

### *Nominalization in the Writing of Novice vs. Experienced...*

feature of scientific register. In other words, the study was designed to answer the following questions:

1. Do Iranian graduate students' research papers differ significantly from the established members' regarding the use and distribution of nominalization?
2. Do Iranian MA students' research papers differ from the established members' regarding the use and distribution of nominalization?
3. Do Iranian PhD students' research papers differ from the established members' regarding the use and distribution of nominalization?
4. Is there any significant difference between Iranian MA and PhD students' research papers regarding the use and distribution of nominalization?
5. How are the nominalization types and tokens distributed throughout the four rhetorical sections of the articles in the three samples?

## **4. Methodology**

### **4.1. The corpus**

As the purpose of the study is to investigate and compare the use and distribution of nominalization in English research papers written by apprentice scientific writers and their experienced counterparts, forty five research articles in the field of applied linguistics, drawn from widely read journals, were selected for investigation. Fifteen of the articles were written by experienced disciplinary experts and thirty of them by Iranian graduate students. The latter group is also composed of two subgroups—MA students and PhD candidates—to each of which fifteen articles belong. Generally, the corpus is composed of three equal sub corpora. The allocation of equal number of articles to the three groups was to guarantee balance. The articles were chosen via a random sampling out of a pool of articles drawn from journals published in 2011

through 2016. Thus, all of the articles had an independent and equal chance of being chosen. After selecting the corpus material, the researcher made some revision for the sake of methodological accuracy. That is, the corpus only composed of the body of every paper, and excluded the abstract, key words, tables, figures, references and appendices. All the direct quotations were also removed from the papers.

The applied linguistics journals from which the experienced scholars' papers were selected were of the most widely read and internationally prestigious journals and the journals from which the novice authors' articles were chosen were national and international journals of good reputation. Moreover, the corpus of this study consists of only the English research articles enjoying the standard IMRD (Introduction, Methods, Results, and Discussion) structure. The criteria for selection of journals were representativeness, reputation, and accessibility.

Moreover, as, based on a study conducted by Banks (2008), the use of nominalization has been increased during an intended period of time, the selection of journals was made in a relative short period of time (2011-2016) to minimize the possible impact of time on the findings. Table 1 demonstrates the titles of the journals used to compile the three corpora.

*Nominalization in the Writing of Novice vs. Experienced...*

**Table 1. *The Journals of Which The Three Corpora Have Been Taken***

| <b>Corpus</b>        | <b>Running words</b> | <b>Journals</b>                                   | <b>No. of articles</b> |
|----------------------|----------------------|---|------------------------|
| <b>EXP</b>           |                      | Journal of Second Language Writing                | 3                      |
|                      |                      | Journal of English for Academic Purposes          | 3                      |
|                      |                      | Journal of Pragmatics                             | 4                      |
|                      |                      | System  | 1                      |
|                      |                      | Language & Communication                          | 2                      |
|                      |                      | Applied Linguistics                               | 2                      |
| <b>Total</b>         | 87930                |   | 15                     |
| <b>MA (Iranian)</b>  | 75699                | Journal of English Language Teaching and Learning | 3                      |
|                      |                      | Issues in Language Teaching                       | 4                      |
|                      |                      | Iranian Journal of Applied Language Studies       | 3                      |
|                      |                      | The Iranian EFL Journal                           | 3                      |
|                      |                      |   | 2                      |
|                      |                      | Theory and Practice in Language Studies           | 15                     |
| <b>Total</b>         |                      |   |                        |
| <b>PhD (Iranian)</b> | 77136                | Journal of English Language Teaching and Learning | 3                      |
|                      |                      | Iranian Journal of Applied Language Studies       | 1                      |
|                      |                      | Issues in Language Teaching                       | 4                      |
|                      |                      | Applied research on English language              | 4                      |
|                      |                      |   | 3                      |
|                      |                      | The Iranian EFL Journal                           | 3                      |
| <b>Total</b>         |                      |   |                        |
| <b>Totals</b>        | 240765               |   | 45                     |

## 4.2. Data collection

All the research articles in the three corpora were thoroughly scrutinized and searched for the instances of nominalization use. All the occurrences of nominalization were identified and marked manually from the corpora to be

counted for future analysis. So as to avoid any possible mistakes in identifying and counting the target types and tokens, the three corpora were subjected to a reassessment by the researcher, which showed no conspicuous discrepancy between the two processes.

Initially, the number of the occurrences of the two types of nominalization in each text and each rhetorical section was counted. The total number of nominalization types in each sub corpus and per rhetorical sections was also calculated. Moreover, following Wenyan, (2012), the proportion of nominalization was computed through the division of the number of nominalizations by the total number of running words in the whole text multiplied by 1000 to normalize the data for proper comparison. This method has already been used by researchers for similar purposes. The total frequency of the occurrence of the nominalization calculated for the experienced writers was then compared with that for novice writers, both qualitatively and quantitatively. The number of running words in every text was obtained by Microsoft Word (MW) automatically.

### **4.3. Procedure**

The researcher considered Iranian graduate students who major in applied linguistics as the representatives of Iranian novice members of the related academic community and experienced applied linguists as established members for comparison. Therefore, authors' experiments have been decided to be investigated as the independent variable which has been operationalized through the number of their published articles, their reputations and academic degrees in the field. The students with at most two published articles were regarded as novice members of the community and inexperienced ones, while scholars with at least 50 published articles and holding an academic degree of

### *Nominalization in the Writing of Novice vs. Experienced...*

at least associate professor were considered as experienced writers, hence established members of the community. Some faculty members were also asked for the reputation of the experienced writers in the discipline.

After operationalizing the three groups of authors, the researcher started identifying the journals out of which the articles were to be taken according to the three criteria of representativeness, reputation and accessibility. Once the journals had been identified, all the articles the authors of which met specifications of the three operationalized groups of authors have been selected, annotated, categorized, and listed in a table. This served as the main corpus of the study from which forty five articles—fifteen for each group of writers—have been selected randomly as the sample of the study. Before performing random samples selection, each qualified article listed in each group was given a unique number. In the next step, each set of articles (fifteen articles) was randomly selected. Therefore, the samples of the study consisted of forty five full applied linguistics journal articles comprising over 240,000 words and categorized into three groups: Iranian MA students, Iranian PhD candidates, and experienced (EXP) authors' articles.

So as to access the articles electronically, they all were saved as electronic PDF files, and then converted to MW documents. The corpus only composed of the body of every paper, and excluded the abstract, key words, tables, figures, references and appendices. All the direct quotations were also removed from the papers. None of these sections were included in the final word count or in the conducted analysis. The three sub corpora compiled meet criteria of corpus comparison proposed by Moreno (2008) in that they “are similar in all of the relevant contextual factors” (p. 25) such as discipline, text form, genre, language, mode, and other dimensions. By controlling for these factors, the analysis of the present study examines possible differences that are attributable

to factors delineating expertise. In analyzing the three sub corpora, the study used Halliday's (2014) model of nominalization. According to Halliday, this model is composed of two broad categories: verbal and adjectival nominalization.

First, the three corpora were traversed and analyzed for the instances of the two main types of nominalization, i.e. verbal and adjectival nominalizations. That is, instances of nominalization were identified, extracted and counted. Searching for, identifying and counting of instances of nominalization were done manually. The total word numbers in every text were also counted by MW automatically. After obtaining the number of all the instances of nominalizations and the total number of running words in each article a normalization of the data was then calculated (number of nominalization occurrence/total number of words multiplied by 1000) for each article and each rhetorical section to be applied in statistical tests and analyses for comparison. As the total number of running words in each sub-corpora varied across the three groups of articles— with the EXP sub-corpora consisting of 87930 words, the MA one 75699 words, and that of the PhD 77136 words— a normalization of the data was necessary.

#### **4.4. Data Analysis**

Obtaining the frequency counts and adjusting them to the length of each sub-corpus, the data collected were processed using SPSS software version 22.0 to analyze the descriptive and inferential statistics. The data analysis was conducted in two phases. In one phase, the number of instances of two types of nominalization in all the three corpora and their rhetorical sections was compared with one another in order to find their degrees of scientificity and contrast their discrepancy in nominalization distribution over the corpora and

*Nominalization in the Writing of Novice vs. Experienced...*

the rhetorical sections. In the second phase, the data were analyzed through running Chi-square ( $X^2$ ) non parametric test to detect whether the difference between the three samples as well as between each two groups (EXP & PhD, EXP & MA, and MA & PhD) in terms of use of nominalization, is significant or not. The alpha value was also set at 0.05. In addition; the findings are compared and contrasted to those of other related studies conducted in similar domains.

## 5. Results

All occurrences of nominalization were counted and categorized under the verbal and adjectival types in the three samples of research articles. The proportions of the instances of the two types were calculated out of 1000 words in each sample in order to reach a sound idea about how much of the texts was nominalization and to be able to compare the use of nominalizations in texts of the same sizes. Table 2 demonstrates the descriptive statistics of the data collected regarding the total number of instances of nominalization with their proportion in the three groups of texts and under the two nominalization types.

**Table 2. Occurrences of Nominalization and Their Proportions Per Type and Sample**

| Nominalization Types | MA Texts    |              | PhD Texts   |              | EXP Texts    |              |
|----------------------|-------------|--------------|-------------|--------------|--------------|--------------|
|                      | F           | per 1000     | F           | per 1000     | F            | per 1000     |
| Verbal               | 7949        | 105          | 7581        | 98.3         | 10164        | 115.6        |
| Adjectival           | 1275        | 16.8         | 1449        | 18.8         | 1821         | 20.7         |
| <b>Total</b>         | <b>9224</b> | <b>121.8</b> | <b>9030</b> | <b>117.1</b> | <b>11985</b> | <b>136.3</b> |

As Table 2 demonstrates, the total number of occurrences of nominalization in the articles written by experienced scholars (11985/136.3) is more than those found in the texts written by Iranian MA (9224/121.8) and PhD (9030/117.1) students. Moreover, the number of occurrences and the

relative frequency of nominalization in MA texts in relation to PhD texts show unpredictable results with MA students using more nominalizations than PhD candidates. However, regarding the adjectival nominalization, PhD texts contained higher proportion (1449/18.8) than the MA ones (1275/16.8). The authors of all three samples have used verbal nominalization five or six times as many as the adjectival forms. In other words, it seems that the general distribution pattern of nominalization per types has been observed by the three groups of writers.

So as to find whether the writers of the three samples have followed similar patterns in using and distributing nominalizations in different rhetorical sections of the articles, all occurrences of the two types of nominalization with their relative frequencies were obtained and categorized per sections and samples in Table 3.

**Table 3. Relative frequencies of nominalizations per rhetorical section and sample (Per 1000 words)**

| Rhetorical Section  | MA   |       |       | PhD  |       |       | EXP. |       |       |
|---------------------|------|-------|-------|------|-------|-------|------|-------|-------|
|                     | Adj. | V.    | Total | Adj. | V.    | Total | Adj. | V.    | Total |
| <b>Introduction</b> | 16.8 | 112.9 | 129.7 | 22.2 | 107.3 | 129.5 | 24.1 | 120.2 | 144.3 |
| <b>Method</b>       | 10.4 | 96.8  | 107.2 | 12.4 | 70.2  | 82.6  | 17.1 | 117.3 | 134.5 |
| <b>Result</b>       | 21.4 | 90    | 111.4 | 17.6 | 92.1  | 109.5 | 19.4 | 108.9 | 128.3 |
| <b>Discussion</b>   | 17.4 | 110.3 | 127.7 | 19.5 | 110.1 | 129.6 | 21.7 | 117.7 | 139.4 |

As displayed in Table 3, the three groups of writers have demonstrated a completely different ranking pattern regarding the employment of nominalizations throughout their papers in different rhetorical sections. Introduction section appears to include the most instances of nominalizations of both types (144.3) in texts written by experienced scholars, followed by the

*Nominalization in the Writing of Novice vs. Experienced...*

discussion section (139.4) while method (134.5) and result (128.3) sections seem to be the third and the fourth respectively. In PhD texts, in contrast, discussion section with 129.6 instances of nominalization is the first most followed by introduction with 129.5. Result and method sections locate in the third and fourth places with 109.5 and 82.6 instances respectively. MA papers start with introduction as the section with the highest proportion of nominalizations (129.7 instances). Then come discussion, result, and method sections with 127.7, 111.4, and 107.2 instances respectively. However, some similarities can also be detected out of the data obtained. In other words, it seems that both introduction and discussion sections in all three groups of papers contained a higher proportion of nominalizations than the other two rhetorical sections.

Although the descriptive statistics of the obtained data has clarified, to some extent, the differences and similarities between and among the three samples regarding the use and distribution of nominalizations, Chi-square tests were run to help make sound conclusion about the discrepancies observed between the texts. Table 4 illustrates the results of the Chi-square tests checking the significance of the differences of the data obtained from the three samples.

*Table 4. The Results of Chi-Square For the Three Samples Regarding the Frequency of Nominalizations*

|              | Experience |            |          | Test Statistics |    |             |
|--------------|------------|------------|----------|-----------------|----|-------------|
|              | Observed N | Expected N | Residual | Chi-square      | df | Asimp. sig. |
| <b>MA</b>    | 3246       | 3333.3     | -87.3    | 42.754          | 2  | .000        |
| <b>PhD</b>   | 3121       | 3333.3     | -212.3   |                 |    |             |
| <b>EXP</b>   | 3633       | 3333.3     | 299.7    |                 |    |             |
| <b>Total</b> | 10000      |            |          |                 |    |             |

The results presented in Table 4 confirm that the differences detected among the samples regarding the proportion of nominalization are significant ( $\chi^2 = 42.754, p < .05$ ). This, however, does not mean that the differences between every pair of samples are significant as well. Consequently, Chi-square statistical test was also run for each pair to explore if the differences observed in descriptive statistics are significant. Table 5, Table 6, and Table 7 are demonstrating the results of running the Chi-square tests on the data obtained from the samples to check whether significant differences exist between MA and EXP, PhD and EXP, and MA and PhD texts respectively.

**Table 5. The Results of Chi-Square for The MA and EXP Samples Regarding the Frequency of Nominalizations**

|              | Experience |            |          | Test Statistics |    |             |
|--------------|------------|------------|----------|-----------------|----|-------------|
|              | Observed N | Expected N | Residual | Chi-square      | df | Asimp. sig. |
| <b>MA</b>    | 3246       | 3439.5     | -193.5   | 21.772          | 1  | .000        |
| <b>EXP</b>   | 3633       | 3439.5     | 193.5    |                 |    |             |
| <b>Total</b> | 6879       |            |          |                 |    |             |

The illustrated outcomes of Chi-square test in Table 5 indicate that the two groups of MA and EXP research articles are significantly different in involving nominalization ( $\chi^2 = 21.772, p < .05$ ). In other words, the established authors have used nominalizations in their research papers in significantly higher proportions than the MA novice student writers.

*Nominalization in the Writing of Novice vs. Experienced...*

*Table 6. The Results of Chi-Square for the Phd and EXP Samples Regarding the Frequency of Nominalizations*

|              | Experience    |               |          | Test Statistics |    |                |
|--------------|---------------|---------------|----------|-----------------|----|----------------|
|              | Observed<br>N | Expected<br>N | Residual | Chi-<br>square  | df | Asimp.<br>sig. |
| <b>PhD</b>   | 3121          | 3377.0        | -256.0   | 38.813          | 1  | .000           |
| <b>EXP</b>   | 3633          | 3377.0        | 256.0    |                 |    |                |
| <b>Total</b> | 6754          |               |          |                 |    |                |

In the same way, Table 6 indicates that the difference between the PhD apprentice writers and their experienced counterparts regarding the willing to use nominalization in their scientific papers are significant ( $\chi^2 = 38.813, p < .05$ ). Combining the results of Table 5 and Table 6, it can be concluded that the experienced writers as established members of the academic communities use significantly more nominalizations in their research papers than the Iranian graduate students as novice members.

However, the results of running Chi-square test on MA and PhD samples displayed in Table 7 indicate that although MA student writers have used more nominalizations in their writing than PhD candidates, this difference is not significant ( $\chi^2 = 2.454, p > .05$ ). This is an indication of the fact that the two groups of Iranian novice members of academic community of applied linguistics use nominalizations with relatively similar proportions in their writings.

*Table 7. The results of Chi-square for the MA and PhD samples regarding the frequency of nominalizations*

|              | Experience |            |          | Test Statistics |    |             |
|--------------|------------|------------|----------|-----------------|----|-------------|
|              | Observed N | Expected N | Residual | Chi-square      | df | Asimp. sig. |
| <b>MA</b>    | 3246       | 3183.5     | 62.5     | 2.454           | 1  | .117        |
| <b>PhD</b>   | 3121       | 3183.5     | -62.5    |                 |    |             |
| <b>Total</b> | 6367       |            |          |                 |    |             |

## 6. Discussion and Conclusion

This study set out with the aim of exploring the possible distance between established and novice members of academic communities regarding their use and deployment of nominalization as one important feature of scientific register in their writing since it was hypothesized that established members of academic communities are acting as gatekeepers who check newcomers for being scientifically qualified as new members of the community. Generally, the study aimed at detecting the degree of scientificity of research articles written by graduate students who decided to join an academic community and of their acceptability on the part of the established ones. This was conducted by identifying the realizations of nominalization in a corpus of applied linguistics research articles written in English by international experienced authors and Iranian graduate student writers.

The frequency counts reveal the importance of nominalization to the students' writings in this genre, with 6410 cases in about fifty thousand words, or one instance every eight words. However, the results indicate that the relative frequency of nominalization used in EXP texts is significantly higher

### *Nominalization in the Writing of Novice vs. Experienced...*

than that used in novice texts confirming the existence of distance between the two groups of texts in terms of nominalization employment and hence scientificity of the texts. Therefore, for research articles written by novice authors, this could be possibly considered as one determining factor for not being accepted and published on the part of high ranking and prestigious journals which are managed by the established members of the disciplinary community as gatekeepers. This finding is in line with To, Lê, and Lê (2013) in that it also proves that the good and proficient users of English demonstrated higher ability in applying nominalization in their texts. It also supports the findings of the study conducted by Mahbudi et al. (2014) in that the Iranian scientific writers are less willing to use nominalization in their discourse. Yet, as the nationality is not regarded as a variable in the present study, its results does not contradict the studies which detected no significant differences between Iranian and Native authors' texts in terms of nominalization use (eg.,Kazemi, 2014; Naghizadeh et al., 2014).

Furthermore, the findings indicate that although minor variations were detected between MA and PhD students regarding nominalization use and distribution the differences are not significant. Accordingly, so as to be able to take a firm stance towards the issue it could be investigated it in specific study with larger samples in future studies.

The finding also reveals that the nominalization distribution and its deployment across different rhetorical sections of the articles in three groups of samples are not the same. In each group of the texts a relatively different ranking order regarding the proportion of nominalization in each section was detected. However, all three groups displayed a similarly more emphasis in involving nominalization in their introduction and discussion parts which approves that introduction and discussion sections involve more scientific

propositions and statements than the other two sections and require more complex, abstract and dense arguments. That is to say, all three groups of writers were aware that the levels of scientificity of different rhetorical sections of the articles are not the same. This is a good indicator that they all followed and wrote within the conventions of the framework of the register that specify the degree of scientificity of the discourse. This idea is also confirmed by the ways the two types of nominalization have been used in the three samples of the study. With regard to the types of nominalization investigated in the present research naming verbal and adjectival, all three groups of authors have used them with the same ranking order. In other words, verbal nominalizations appear to be used an average of five or six times more than adjectival nominalization throughout all samples and the rhetorical sections. These findings are supported by Kazemi (2014) and To et al. (2013) who found that verbal nominalizations were several times more frequent than the adjectival ones in their corpora. However the relative proportions in different studies differ which may be an illustration of the variations in the studies designs and perhaps of the authors' various disciplinary qualifications in terms of the register conventions.

As a whole, the use of nominalization with lower proportions in PhD/MA papers is potentially influenced by a number of factors which may originate from different sources:

1. Graduate student writers specifically in Iranian EFL situation do not possibly master the different grammatical features of the language as well as their experienced counterparts. This might result in the fact that these learners are not as proficient and competent in English as the established members of the disciplinary community hence would not be able to manage nominalization properly in their texts.

*Nominalization in the Writing of Novice vs. Experienced...*

2. Although they have read different academic and scientific materials throughout their studies or as their course requirements, this does not necessarily lead to writing with the same properties and characteristics as the texts they have read since reading comprehension demands different mental processes from writing. In other words, being proficient academic readers does not necessarily guarantee competent scientific writers. Therefore, they need to be consciously aware of some academic language features such as nominalization through explicit instruction.
3. They might not be completely aware of the differences between spoken and written language. As a result, their writing would contain some features of spoken discourse. For instance, spoken language accommodates more clauses, redundancy, and repetition than written one which is characterized by packed information as well as lexically dense sentences materialized through more nominalizations. This is, to some extent, evident in their writings (a) which seem to be also less lexically dense and less informative. This confirms Wang (2008) who found spoken language features of relatively the same kinds in his students' writings.
  - a. *It is important for learners to have good lexical skills in order to produce sentences and to understand them correctly. (MA Text 10)*  
Using nominalization sources, the author would be able to produce a more formal sentence like b below.
  - b. *Having good lexical knowledge is of vital importance to the learners in producing and understanding sentences correctly. (Revised version)*
4. Transference from the mother tongue might be at work as well. As a consequence, contrastive analysis studies may contribute to the awareness of the graduate students through comparing the languages and contrasting the possibly different processes of nominalization in them. This would result in

magnifying the nominalization processes in the two languages and enabling the novice authors in exploiting them properly in their scientific writing.

5. Another possible reason for the fewer use of nominalization on the part of MA and PhD student writers can be the fact that as they themselves prefer less dense and less complex texts to read due to their level of proficiency, they deliberately tend to write texts with lower degree of complexity and density hence using fewer nominalizations in their texts.
6. Since the pragmatic aspects of language are learnt later, the novice writers might not be pragmatically as competent as experienced ones to be able to produce writings with similar and required degree of formality. Formality is one specific pragmatic feature of writing in general and scientific writing in particular which can be realized via different linguistic features of which nominalization is of prominent importance.

Generally, it can be concluded that the MA and PhD students may not be sufficiently aware of the grammatical complexity of scientific language and how the language contributes to packing meanings and information in sentences. Therefore, studies such as the present research could provide them with important insight into how apprentice academic writers across languages and regardless of their nationalities, yet within the identical disciplinary community, utilize nominalization in their texts.

The importance of this study can be regarded from different perspectives. First, it may have a remarkable contribution to the Iranian graduate students' awareness of the importance of nominalization in scientific discourse. Furthermore, it helps them as apprentice members of scientific communities to adapt themselves faster to the standard ways of using and deploying different types of nominalization in their forthcoming communications with the other members. This would pave the way for them to be regarded as accepted and

### *Nominalization in the Writing of Novice vs. Experienced...*

qualified by the established members who act as the gate keepers of the disciplinary community.

Second, the findings of the current study might also have implications for EAP teachers in including nominalization instruction when developing lesson plans for their writing courses with graduate students. Besides, they can use the findings in order to identify different weights given to two types of nominalization in different rhetorical sections of research articles for the purpose of presenting an appropriate pattern of use in their classes.

Third, the study may be of interest to EAP material developers to make use of the findings in preparation of the materials and the textbooks which best depict the proper use and distribution of nominalization in scientific register since textbooks are acting as road maps for most EAP teachers and learners. Moreover, material developers can include effective exercises so as to increase learners' competence in employing different ways of packing meaning and information via grammatical metaphor to produce dense, complex, abstract, and formal discourse as typical form of scientific register.

Finally, in their future research working on the linguistic features affected mostly by the conventions of academic communities, researchers can use the design of the current study which adopts a new perspective at viewing the academic members as novice/experienced authors as an alternative for the foreign/native ones. However, it is noteworthy that in selecting the corpus for such studies, it is nearly impossible to use the same groups of journals in order to sample both groups of writers as, unlike established authors, novice writers are not almost published in most prestigious journals. The present study is also suffered from the same limitation.

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