Rhetorical Move Structures and Linguistic Realizations of Abstracts in ICT Research Articles and Master's Theses

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Abstract

Genre analysis has been used to examine the organizational structures of academic and professional writing. The objectives of this paper are to illustrate how abstracts in two different corpora were organized and realized in terms of functional meaning and also to investigate their grammatical features. Two sets of data were collected and analyzed using Hyland's (2000) model. Differences were found in the frequency of occurrence of Introduction and Conclusion moves. Voice usage in the two corpora was clearly different. The findings provide insightful knowledge of rhetorical patterns and the use of lexico-grammatical features in each move in the abstracts. It is expected that the findings will assist novice writers or graduate students, particularly those in the field of information and communication technology in organizing their academic abstracts.

Keywords: Abstract / ICT / Move analysis / Research article / Rhetorical organization

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Introduction

English has become an international language which is used in nearly all fields. In the education context, English is considered to be the main language for teaching and learning at an international level. It is a fact that non-native English speaking graduate students in nearly all fields face a formidable task when writing their academic papers in English. Although they may be excellent in respect of their content in their particular fields, conveying their thoughts in an appropriate academic form is a very difficult task. Obviously, native English speakers have a great advantage as they acquire the language naturally while non-native writers need to make considerable efforts to use the appropriate academic language. Non-native and inexperienced writers are not only likely to face a situation in which they need to use the appropriate academic language for their discourse community, but they also have to be adept at using the conventional rhetorical styles. The accepted and international linguistic norms are often different from that of their mother tongues. This may be one of the reasons why non-native speakers experience greater difficulties when writing in English (Hyland, 2016). As Ren and Li (2011) stated, an effective and productive way to assist novice writers or graduate students to cope with the challenges in academic writing might be to make knowledge of academic writing explicit to them through genre analysis. It has been suggested that graduate students should be assisted in coping with understanding the content and integrating language skills and academic knowledge building (Al-Zubaidi, 2012).

Rhetorical features which are accepted by the members of an academic community are embedded in their academic works. Members of any discourse

community need a specialized literacy that consists of the ability to use discipline-specific rhetorical and linguistic conventions to serve their purposes (Duszak, 1994; Tas, 2008; Tardy, 2005; Zhu, 2004). It can be said that when writing academic papers, more insights are needed into what makes a given style appropriate and functional in a given discoursal environment. This is because academic writing is affected by the conventions of the particular disciplines (Kamler & Thomson, 2006). In order to cope with the difficulty of writing in the English language, studying genre analysis is one of the best ways to help inexperienced writers in developing their academic writing skills effectively.

There has been a growing interest in analyzing the generic structure of academic papers, particularly in research articles (RAs), theses, and essays. However, like research articles, graduate theses are one of the genres of most interest. Much attention has been paid to the rhetorical structure of English theses. Research studies either focus on certain linguistic features (Becker & Chiware, 2015; Nguyen, 2015; Ozdemira & Longob, 2014) or explore the rhetorical structures of certain chapters, such as the abstract (Ren & Li, 2011), the introduction (Bunton, 2002; Samraj, 2008; Shirani & Chalak, 2016), the literature review (Kwan, 2006), the method (Nguyen & Pramoolsook, 2015), and the conclusion (Bunton, 2005; Nguyen & Pramoolsook, 2016). However, the present study only focuses on the abstracts of research articles and theses in the field of information and communication technology.

As confirmed by several studies (Ahmed, 2015; Huang, 2009; Pho, 2010; Ren & Li, 2011), the abstract is an important section for academic works which is used to summarize the whole of the contents, thus it must be easily

comprehensible to the readers. Not only should it be concise, but it should also fulfill the content requirements (Ahmed, 2015). Since it is a crucial part of a paper, non-native and inexperienced writers are unaware or show scant attention to the rhetorical conventions of abstracts (Hyland, 2000). On the other hand, compared to the RA abstract which has been widely analyzed in the literature, the thesis abstract has received relatively little attention although it is equally important. Therefore, it should not be ignored. Ren and Li (2011) state that this section is important since it is one of the first key section to be viewed by examiners. Therefore, a thesis abstract should also be organized appropriately and correctly in terms of rhetorical structure and linguistic features.

Based on Swales' (1990, 2004) notion, genre refers to a class of communicative purposes, which is shared and recognized by the members of discourse community. Research article and thesis are also considered as important academic genres. In the research world, genres form intertextual relationships with other genres. In other words, published articles can both precede and follow theses, and further, articles can be combined into theses. With the notion of recontextualization of genres in a genre network (Swales, 2004), there is a close relationship between a postgraduate thesis and its associated research articles. Generally, after completing their research, graduate students must prepare their RA for publication and/or make a presentation at a conference. These are the necessary requirements for obtaining a degree certificate and completing the study programme. This regulation applies to most graduate programs throughout the world. In Thailand, it is essential for Ph.D. students irrespective of their fields to publish at

least one RA in an international journal before receiving a degree. In other contexts, for example, students in Turkey must publish at least one research article in order to qualify for an assistant professorship in ELT (Tas, 2008). For inexperienced non-native writers, transferring their knowledge into a thesis is considered to be challenging, but writing a RA to match the discourse conventions and to be accepted by an indexed journal is much harder for them (Bitchener & Basturkmen, 2006; Canagarajah, 1996). This is because no matter how thorough their knowledge, without the mastery of the genre conventions and discourse knowledge, it will be very difficult for them to have their RA published by an indexed journal. It can be said that with all other things being equal, non-native writers are at a decided disadvantage compared to native English writers when writing for publication (Flowerdew, 2000; Misak et al., 2005). Therefore, with insightful analysis of both RA and thesis abstracts, the results may provide a clearer picture of how abstracts of these two genres are organized in terms of rhetorical move structures and linguistic organizations.

Research studies which focusing on thesis abstracts are rare. Attention has been more focused on the rhetorical structure of RAs. This might be due to the size of the readership. That is, abstracts of theses are mainly read by examiners, which is much more limited than the readership of RA abstracts. However, the writing of a thesis abstract should not be ignored since the postgraduate thesis abstract is still one of the first things which summarizes the whole contents of a research study. Numerous theses or dissertations are cited in books or RAs. Therefore, being aware of the genre specific discoursal features of abstracts of both theses and RAs is a necessity for being accepted

by the discourse community. It can be said that discourse members of all fields should take consideration on this issue.

Move analysis is an analytical approach for text identification (Swales, 1990, 2004) and has been used to analyze different types of genres such as research article, thesis, essay. Based on Swales' notion, a move is "discoursal or rhetorical units performing coherent communicative functions in texts" (Swales, 2004, pp. 228-229). A move is defined by Yang and Allison (2003) as a text frame which is used to classify chunks of text in terms of their particular communicative intentions. In learning and teaching contexts, focusing on communicative functions of the texts can be an effective way to turn teachers' and students' attention away from the surface structures of text to the socially situated use of texts with specific intentions (Hüttner et al., 2009). Thus it can be seen that such an approach is valuable for both reading and writing. In addition, a knowledge of rhetorical organization can be used to strengthen communication and to broaden knowledge in academic fields (Kanoksilapatham, 2012).

Besides rhetorical move structure, studies of linguistic features in RA abstracts have provided much insight into the genre (Zhang et al., 2012). The lexico-grammatical constructions such as voice, verb tense, nominalization, that-complement clauses are widely studied. For example, Cooley and Lewkowicz (2003) reported that the present tense was used in abstracts to present a summary of the article, while the past tense was used in summarizing the research. Tseng (2011) and Zhang et al. (2012) found that the present tense was used in Background, Aim, and Conclusion moves while past tense was employed in Method and Results moves. The use of voice is also

interesting for genre study. Zhang et al. (2012) found that the active voice was used twice as often as the passive voice in agricultural abstracts written by Vietnamese writers. Also, Bonn and Swales (2007) found that French abstracts contained the passive voice less often than the abstracts of native speakers.

Consequently, the aims of the present study focus on analyzing the rhetorical move structure and grammatical features of abstracts of the two genres (master's theses and RAs) in the field of information and communication technology (ICT). The first aim was to investigate how the abstracts of the two genres are constructed. The second one was to identify three grammatical aspects, namely tense, voice and that-complement clauses. The findings will bring an increased awareness of the discoursal features and language usage in the writing of thesis abstracts and RA abstracts.

Methodology

1. The Focused Field

The information and communication technology (ICT) field has been selected for the present study. ICT is an interdisciplinary field which is connected to many other fields. It is recognized as one of the fastest-growing technological disciplines and considered as being of a strong disciplinary nature (Maswana & Cheng, 2017). ICT covers the new multimedia technologies, including computer software, CD-ROMs, mobile phones, television, films, the internet as well as internet-based project work, chats, blogs, wikis, podcasts, and e-mails (Andrews, 2000). It is a field which heavily influences education. Although there were some research studies (e.g. Klimova, 2011; Hismanoklu, 2011) concerning the application of ICT to pedagogy, the study of a move-based analysis is an under-

explored area. An outstanding genre-based analysis study was carried out by Maswana and Cheng (2017). They analyzed research articles in the field of ICT. Their findings show that RAs tend to have explicit expressions and emphasize the significance of the research, policy guidance, and possible research areas in the future. Furthermore, this field is one of the graduate programs offered in the university where the researcher is working. The students in this program face considerable problems when writing their abstracts. Therefore, the findings from the present study could assist them to some extent in writing their abstracts accurately and confidently and allow them to present their research to the wider communities both in the forms of presentation and publication.

2. Corpus Compilation

In order to analyze the rhetorical patterns of abstracts in ICT theses and research articles, two corpora were systematically compiled. They are the RA corpus and the Thesis corpus. The first corpus consists of 10 RA abstracts taken from leading journals. The titles and their impact factor (in brackets) are the *"Journal of Computer-mediated Communication (4.113)"* and the *"The Internet and Higher Education (4.238)"*. The Thesis corpus consists of 10 English master's thesis abstracts written during the years 2012-2017 from Rajamangala University of Technology Isan, Nakhon Ratchasima, Thailand. The selection of these theses is expected to reflect current practices in thesis writing by ICT students. The selected program is a recently launched program in the university, therefore the theses are limited in number. In fact, there were only 10 completed theses available. To this end, it was found that although analyzing a small scale of corpora, the findings of these comparative studies (Al-Khasawneh, 2017; Hirano, 2009; Ozturk, 2007) showed significant findings,

which provide valuable insights into the fields of the studies. Therefore, it is expected that the results from the analysis of these theses could to some extent represent the typical structures of abstract writing practice by ICT graduate students. The similarities or differences found between the two sets of data should yield some insightful understanding of the generic structure of these two types of abstracts.

3. Framework for Move Analysis

Hyland's (2000) model was used as the framework for the analysis. This model has been empirically used for move analysis in various disciplines, such as agriculture (Zhang et al., 2012), applied linguistics (Suntara &Usaha, 2013), business (Li & Pramoolsook, 2015), and the cross-disciplines of applied linguistics, mathematics, and chemistry (Darabad, 2016). This selected model contains five moves, namely, Introduction, Purpose, Method, Product, and Conclusion. Hyland's (2000) model was derived from the analysis of 800 abstracts across 8 disciplines. The Introduction move and Purpose move in Hyland's (2000) model fully cover the communicative function of the text units, while these two moves are not stated clearly in the models developed by Bhatia (1993) and Swales (1990). Therefore, Hyland's (2000) model as illustrated in Table 1 is the most suitable model for the present study.

Table 1 Hyland's (2000) Move Model

Move	Function
Introduction	Establishes context of the paper and motivates the research or discussion.
Purpose	Indicates purpose, thesis or hypothesis, outlines the intention behind the paper.
Method	Provides information on design, procedures, assumptions, approach, data, etc.
Product	States main findings or results, the argument, or what was accomplished.
Conclusion	Interprets or extends results beyond scope of paper, draws inferences, points to applications or wider implications.

4. Assuring Reliability and Validity

The analysis was based on the content or function of the text segments. However, identification of moves based on function can be criticized for its subjectivity. Therefore, inter-rater reliability as suggested by Crookes, 1986 was employed to eliminate this concern. Another coder who had expertise in move-based research was invited to help. Discussions were held when there were some disagreements on move coding. A frequency was used to classify the degree of move occurrence in the abstracts. The range of the frequency or the cut-off points were applied. That is, the present study used the move classification developed by Kanoksilapatham (2005), which classifies the frequency of occurrence of each move ranging from obligatory, conventional, and optional (i.e. 100%, 60%-99%, and less than 60% of the corpora, respectively).

5. Move Analysis Procedure

All the collected abstracts in the field of ICT from both corpora were assigned as RA1-RA10 for the RA corpus and TH1-TH10 for the Thesis corpus. The function of the text boundary was the key point for coding. However, the coding also considered the linguistic signaling words used in the moves. This is because they correspond to the communicative function of each move and facilitate the identification process. The frequency of occurrence was recorded and then assigned according to the frequency criteria (obligatory, conventional, or optional). In addition, three lexico-grammatical features (tense, voice, and that-complement clause) were observed and noted.

Results and Discussion

As the main aims stated above, the results of the present study are expected to assist inexperienced non-native writers or graduate students to write their research abstracts for theses and research articles, especially those who are in the field of ICT. This section includes the results concerning the rhetorical move structures and lexico-grammatical features. Some interesting points are raised and discussed.

1. Move Structures

The results presented in this subsection concern the rhetorical moves. It is noted that the realizations of certain moves or features are exemplified, and the reference sources are provided after each example. Thus, RA1 refers to research article number 1 from the RA corpus and TH1 to thesis number 1 from the Thesis corpus. The frequency of occurrence of the abstracts in both datasets is illustrated in Table 2.

Table 2 Frequency of Occurrence of Moves in Each Corpus

Move	RA (N=10)	TH (N=10)
Introduction (I)	3 (30%)	4 (40%)
Purpose (P)	9 (90%)	10 (100%)
Method (M)	9 (90%)	9 (90%)
Product (Pr)	10 (100%)	10 (100%)
Conclusion (C)	6 (60%)	1 (10%)

Table 2 shows that all five moves in Hyland's (2000) model were used in the present study. There were similarities and differences in the occurrence of the moves. Four moves (Introduction, Purpose, Method and Product) were found to a similar degree in both datasets. However, the most noticeable difference was in the use of the Conclusion move. In the RA corpus, the Product move was obligatory, while the Purpose, Method, and Conclusion moves were conventional, and the Introduction move was considered optional, accounting for less than 60 percent of the total. On the other hand, the Purpose and Product moves were obligatory moves in the Thesis corpus, followed by the Method move which was conventional. The optional moves were the Introduction and Conclusion. These results are similar to those found in previous studies (Hyland, 2000; Huang, 2009; Li & Pramoolsook, 2015; Pho, 2008; Suntara & Usaha, 2013; Ren & Li, 2011; Zhang et al., 2012). The Product move was a frequent move. In the present study, the Product move had a high frequency of occurrence. This means that authors from both sets of corpora give great importance to the presentation of their results.

One particularly interesting point was found in the Conclusion move. Its frequency in the RA corpus was 6 times higher than in the Theses corpus. It

clearly showed that only one Thesis abstract included this move. However, in Hyland's (2000) study, this move appeared to be preferred by authors in biology and marketing at only 21 percent. The function of the Conclusion move is to emphasize the value or the importance of the study and to show how it relates to the wider community. The Conclusion move allowed the authors to consolidate their findings in the discipline (Ren & Li, 2011). This is due to the fact that the authors need to appropriate audience for their work amongst a large number of other similar publications. They tried to show that their studies would be beneficial and useful for their target readers. Unlike the graduate students in the Thesis corpus, they face less competitive pressures than the RA authors do. That is, their main aim is to match the criteria set by their institutes and gain acceptance by their thesis committees. In addition, drawing a conclusion by stating the significance of their work, making inferences and/or generalizations needs creative thought and rhetorical skills. The language constraints may provide another reason for the absence of this move. However, the inference made here is from the findings derived from a small corpus, while larger scale studies would yield a clearer picture of this assumption. The high usage of the Conclusion move in the RA corpus may be useful for writing classes to encourage non-native graduate students into thinking carefully when writing their RA abstracts.

2. **Move Pattern**

The details concerning move structures of the two sets of data are presented in Table 3. Specifically, only the three most frequent structures are showed and discussed. It is believed that the preferred structures derived from

the analysis could be as a guidance or practical direction for inexperienced writers to develop their abstracts effectively and confidently.

Table 3 Frequent Move Patterns found in the two Datasets.

No.	Organization pattern	RA corpus	TH corpus	Frequency
1	I-P-M-Pr	-	5	5
2	P-M-Pr-C	3	-	3
3	P-M-Pr	1	1	2

Table 3 displays the move patterns found in the present study. It was found that the preferred pattern used by authors in the RA corpus was the "Purpose-Method-Product-Conclusion", while the Thesis corpus preferred the "Introduction-Purpose-Method-Product" pattern. The most frequent pattern which was found in Hyland (2000) was the "Purpose-Method-Product", however, only one abstract from each corpus was presented in this form. This suggests that the deviations and differences from the norm may vary according to the particular discipline. This may cause from the nature of the field. That is, the ICT field is a dynamic and diverse field. As confirmed in a study conducted by Maswana and Cheng (2017), there was no conventional pattern of RAs in ICT field as it is an interdisciplinary field. The RAs were written in the form of highlighting the significance of the research, policy recommendations or application of the findings to the related fields. This may confirm the less use of preferred structure of Purpose-Method-Product in the present study.

The analysis showed that Thai graduate students structure their abstracts linearly. Also, the certain patterns were embedded in the structures of the RA authors. This means that there were combinations of two moves together,

namely Purpose + Method moves and Method + Product moves in a single sentence (see Examples 1 and 2). It can be seen that the Method move was merged into the other moves. The nature of this pattern suggests that the authors did not focus much on the methodology used in the study or the method used was already well-known in the field. The readers may be familiar with the background, so the abstracts can be shortened by combining with other moves. However, Kafes (2012) found that the Method move in education abstracts was stated concisely and separately in the structure of abstracts. On further consideration, the mixed pattern might result from the limited and controlled space set by the journals.

Example 1: *Purpose* + Method

1) Hence, *the goal of this study was to examine the motivating factors of learners who successfully completed a MOOC in nanotechnology and nanosensors,* while comparing between university-affiliated students (N =114) and general participants (N =194). (RA2)

Example 2: Method + *Product*

2) Using experience sampling, *we show that anticipated interaction varies across social media.* (RA6)

3. Grammatical Features

This subsection contains the details concerning the grammatical features concerning tenses, voices, and That-complement clauses employed in the moves. This will correspond to the second aim of the present study. This is because they are viewed as important categories reflecting the written genre (Cooley & Lewkowicz 2003; Tu & Wang 2013).

3.1 Tenses

Table 4 The Use of Tense in Moves

Move Types	I		P		M		Pr		C	
	RA	TH	RA	TH	RA	TH	RA	TH	RA	
Total Number of Abstracts Containing Move Types	3	4	9	10	9	9	10	10	6	
Past tense		3	1	6	4	6	5	6		
Present tense	3	3	8	7	7	5	7	6	6	
Present perfect tense		1					1			

Table 4 shows the tense usage. The present simple tense was the most frequently used tense in most moves, followed by the past tense and the present perfect tense was the least frequent occurring in only one abstract from each corpus. The use of the present simple tense, especially in the Method and Product moves implies that the authors consider that the information about the methodology and results is likely to be true and can be contextualized with current research issues. These findings are consistent with the results of previous research studies. These studies confirm the high use of the present simple tense in abstracts (Alhuqbani, 2013; Al-Shujairi et al., 2016; Esfandiari, 2014; Suntara & Usaha, 2013). In some studies (Alhuqbani, 2013; Tseng, 2011; Zhang et al., 2012), the Method and Product moves are presented in the past form, but in the present study both tenses were found in both datasets. Zhang et al. (2012) found that the present tense is not used at all in the Method move in Vietnamese agricultural RA abstracts. From these findings, it can be seen that there are disciplinary variations in the writing of abstracts, especially

with regard to the methodology move. A noticeable difference in the use of tense is in the Purpose move, namely, the past tense in the Thesis corpus is used more frequently than in the RA corpus. According to Swales and Feak (2004), the purpose move can be in either the present or the past tense. However, there is an increasing trend to use the present simple tense to make your research objectives more fresher and newer. This shows a significant difference in the two different genres.

3.2 Voices

Table 5 The Use of Voice in Moves

Move Types	I		P		M		Pr		C	
	RA	TH	RA	TH	RA	TH	RA	TH	RA	
Total Number of Abstracts Containing Move Types	3	4	9	10	9	9	10	10	6	
Active voice	2	2	9	10	8	2	8	4	5	
Passive voice		2				7		6	1	
Active + Passive voice					1		2			

As shown in Table 5, the most noticeable difference in the use of voice is in the Method and Product moves. That is, the active voice is used more frequently in the RA corpus, while the passive voice is employed more often in the Thesis corpus. Generally, texts are easier to understand when they are in the active voice (Lorés, 2004; Swales, 1990). However, the use of the passive voice shows a more impersonal tone and it is considered as more formal. In some research studies, the passive voice is the preferred choice for authors to describe methodology and the presentation of the results (Hanidar, 2016; Tu &

Wang, 2013). This means that the focus is on the action being performed, not the agent. This distinction provides a signpost for graduate students to realize how to organize their RA abstracts as a requirement for their graduation. Examples of voice usage are presented in Example 3 (Method move) and Example 4 (Product move).

Example 3

1) We **test** the model with data from a 2-wave panel survey conducted with an adult population in 2013 in Chile. (RA7)

2) Suffix Tree Clustering (STC) technique **is used** as a tool to find the relationship between course descriptions and definition of careers. (TH2)

Example 4

1) Our results **demonstrate** that incidental exposure to counter-attitudinal information drives stronger partisans to more actively seek out like-minded political content, which subsequently encourages political information sharing on social media. (RA9)

2) There are many other points that **were revealed** by the respondents with the average ($\bar{x}$) from 3.53 (S.D. =0.96) to… (TH5)

As showed in Examples 3 and 4, item 1 of each Example demonstrated the use of active voice, while item 2 presented the employment of passive voice. However, the thematic style of authorial voice or stance expressions (Flowerdew, 2001; Pho, 2010) in presenting the information might affect the voice usage. Authorial stance was one of the major problems for non-native writers (Flowerdew, 2001). This may be the reason behind the great use of passive voice to describe the Method and Product moves in the Thesis corpus.

3.3 That-complement clauses

Table 6 The Use of That-complement Clause in Moves

Move Types	I		P		M		Pr		C	
	RA	TH	RA	TH	RA	TH	RA	TH	RA	
Total Number of Abstracts Containing Move Types	3	4	9	10	9	9	10	10	6	
That-complement clauses	1	1	1	-	2	3	7	7	1	

That-complement clauses were found in all five moves with different purposes. With regard to the Product move, the findings are similar to that of previous research studies (Pho, 2010; Suntara & Usaha, 2013). That is, the That-complement structure contains an opening noun (e.g. result, finding, research) plus reporting verb (e.g. show, suggest, reveal, demonstrate) such as "*The results suggest that*" and "*Our results demonstrate that*". The use of the "that-complement clause" can be explained in terms of how the writers try to situate themselves from the subject role to an objective position (Parkinson, 2013). The use of "that" is to reflect the promotional aspects of the abstracts genre in order to attract readers' attention so that they continue reading the paper (Hyland & Tse, 2005). This indicates that the authors consider their research findings are useful and applicable to the field. In addition, the authors can use a "that-complement clause" to signal the readers that the results are about to be presented or evaluated as shown in Example 5.

Example 5

*Our **results demonstrate that** incidental exposure to counter-attitudinal information drives stronger partisans to more actively seek out like-minded political content, which subsequently encourages political information sharing on social media.* (RA 9)

***The results** of this case study **revealed that** the average transporting distance decreased 7.61 percent...* (TH1)

Conclusion

Based on the analysis of the two sets of data, the major findings can be summarized. In the RA corpus, the obligatory move was the Product move, while Purpose, Method, and Conclusion moves were conventional. The Introduction move was optional. In the Thesis corpus, Purpose and Product moves were obligatory, while the Method move was conventional. The Introduction and Conclusion moves were optional. The preferred move structure of the RA corpus was "Introduction-Method-Product-Conclusion", while "Introduction-Purpose-Method-Product" was the favored pattern used in the Thesis corpus. The most frequently used tense was the present simple. Although the past tense was the second most frequently used tense, there was a difference in usage between the two corpora. The use of the past tense in the Thesis corpus was higher than in the RA corpus in all occurrences, especially in the Purpose move, which greatly outnumbered usage in the other moves. The active voice was used frequently in the RA corpus while the authors in the Thesis corpus opted to present their Method and Product moves in the passive form.

Despite the small scale of the corpora used in the present study, it is believed that the findings could be generalized to some extent to the ICT field, particularly with regard to those graduate students pursuing graduate degrees. Some pedagogical implications may be drawn from this study. L2 teachers may use the genre-based approach in the teaching of writing to raise students' awareness of the most appropriate methods of abstract writing. If writers are familiar with the structural and linguistic features of abstracts it will greatly assist them in writing their research papers effectively. They will gradually become sensitive to the obligatory or conventional moves and can successfully shape their abstracts according to internationally accepted conventions. However, since this study is drawn from a small set of corpora, it is difficult to generalize the results to all cases. A larger corpora would show a clearer picture of the rhetorical and grammatical features of abstracts in the ICT field.

Acknowledgements

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