

A COMPARATIVE STUDY OF THE GENERIC STRUCTURES OF ENGLISH RESEARCH ARTICLE ABSTRACTS: MOVES AND THEIR REALIZATIONS

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Abstract

Research studies have showed that the rhetorical structures of research articles (hereafter referred to as RAs) written in English by native and non-native English speakers vary across disciplines. Based on a move-based approach, the present study compares the rhetorical structure of research article abstracts (hereafter referred to as RA abstracts) in the information and communications technology field (ICT), written by Thai or non-Thai authors, and published in leading, carefully selected, trustworthy and non-predatory international and Thai-based journals. Each of the two corpora (Thai-based and international) consisted of thirty English RA abstracts. The selected articles were analyzed using Hyland's (2000) model. It was found that the frequency of occurrence of the conclusion move was different. Present simple tense was the most frequent choice and there was a mixture of active and passive voices. It is expected that the findings will be beneficial for novice Thai researchers when writing their RA abstracts. Also, this may lead to pedagogical implications for teaching students how to write RA abstracts effectively, especially in ICT-related fields.

Keywords: abstract, move analysis, research article, ICT, trustworthy non-predatory journals

1. INTRODUCTION

In academic communities, the use of English language in research publications is of paramount importance, and scholars or researchers are encouraged to actively engage in research and to subsequently publish their work in English in order to enhance their professional status (Kanoksilapatham 2012). However, publishing research articles in English is a challenging task for inexperienced researchers, especially those for whom English is not a native language. A poor English writing skill is a major factor in the rejection of manuscripts (Juan & Tao 2013). Both rhetorical style and linguistic features are involved when writing for publication.

Therefore, researchers should be fully aware of their fundamental importance when writing articles for publication.

It has been confirmed that different sections and fields have their own preferred conventional forms or patterns in written communication (e.g. Ozturk 2007, Martínez 2003; Duszak 1994, Swales and Feak 2004). Yang & Allison (2003) insist that the patterns of organization within empirical RAs tend to be more flexible towards the end. Therefore, insightful understanding of the generic structure of RAs would help writers write their RAs more effectively and productively. Authors in any field should not only be concerned about linguistic conventions, but they should also be aware of the norms shared

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by the members of their own academic community (Bhatia 1993). In order for an RA to be accepted and published in a well-known, trustworthy and non-predatory journal, sound knowledge and use of both linguistic and rhetorical features in the written discourse is indispensable (Swales 2004). To this end, understanding how to use rhetorical structures and their grammatical realizations in the context of RAs will help authors or scholars to improve their written skills. In addition, it is important that novice authors and researchers are well informed and avoid publishing their research work in predatory journals that charge high publication fees without providing robust peer review and editorial services.

Move analysis is an analytical approach to texts, developed by Swales in 1981 which he later modified (Swales 1990, 2004). In his updated version, Swales (2004) defined a move as “discoursal or rhetorical units performing coherent communicative functions in texts” (pp.228-229). Focusing on function, Yang and Allison (2003) stated that a move is used to classify chunks of text in terms of their particular communicative intentions. Based on these definitions, a move is a semantic unit of text that is linked to the writer’s purpose. It is believed that analyzing and categorizing texts in terms of communicative purpose has the advantage of turning teachers’ and students’ attention away from the mere surface structure of the text to the socially situated use of text with a specific intention (Huttner, Smit & Mehimaue-Larcher 2009). Therefore, focusing on the discourse of communication made by writers, should not only be valuable for reading, but also for its pedagogical implications.

Academically, research articles (RAs), regardless of fields or languages, make up one genre of writing which has been extensively investigated using a move-based approach. Focusing on comparative studies, several studies have compared the rhetorical patterns of English RAs with those of RAs written in other languages, such as Polish (Duszak 1994), Slavic (Yakhontova 2006), Thai (Kanoksilapatham 2007), Chinese (Loi &

Evan, 2010), Malay (Loi et.al 2016), and French (Bonn & Swales 2007). Based on these studies, some differences were found, such as in terms of the structure of rhetorical moves, writing styles, and ways of sharing and interpreting ideas. Also, the authors of these studies consider that comparative genre studies provide great benefits to the novice and non-native writer because the structural patterns found in the studies can provide guidance to assist them in taking part in international discourse communities.

Several studies have analyzed individual sections of RAs, with abstracts being one section, which has been widely identified using move-based analysis. This is due to the fact that most international journals regardless of language, require an abstract to be submitted along with the original research. Furthermore, many journals published in languages other than English require the submission of an English version of the abstract (Lorés 2004, Ventola 1994). This makes abstracts of great interest to researchers. Thus, they have become an equally important genre in their own right, and they are viewed as a compulsory genre which must be included in nearly all types of research works. By its function, an abstract is an indispensable research section of a journal article and is used to capture the essence of the whole article. However, to cross the formidable barriers of writing for publication, the authors should be aware that beyond the language usage, cultural variation is embedded in the structure of abstracts (Taylor & Chen 1991).

A number of research studies, regardless of discipline have focused on the abstract section, for example, in the field of biology (Samraj 2005), related-sciences (Hwang, Nguyen & Su 2017), linguistics (Wei & Liu 2015), multiple scientific disciplines (Kanoksilapatham 2009), literature (Tankó 2017), applied linguistics (Tseng, 2011, Suntara & Usaha 2013), ICT (Maswana & Cheng 2017); agriculture (Zang 2012), medicine (Anderson & Maclean 1997, Salager-Meyer 1992); psychology (Hartley 2003); and engineering, physics, marketing,

sociology and humanities (Hyland 2004). Results from these research studies have provided great benefits for various fields.

Some research studies show interesting results on the move structure of abstracts. For example, Al-Khasawneh (2017) analyzed 20 abstracts in applied linguistics. He found that there were some differences in the employment of the introduction and conclusion moves. Native speakers tended to end the abstracts with a conclusion, more often than their non-native counterparts. Hwang, et.al (2017) reported that compared to native English writers, Vietnamese writers tended to leave out background information regarding their research studies, more than native English speakers. When presenting the research (Move 2), Iranian writers preferred to announce their research purpose, while native English speakers presented the main feature of their research (Abarghooeinezhad & Simin (2015). In their study, Xiao and Coa (2013) found that native speakers displayed active involvement and commitment in presenting their ideas, and they used intensifying devices, more than Chinese writers. In contrast, Chinese writers showed stronger conceptual elaboration, and used a passive style of writing. Based on their research findings, Wie and Liu (2015) found three different points. First, abstracts written by native speakers were more complete in structure than those written by Chinese writers. Secondly, Chinese writers tended to combine the method move with the introduction move. The last point identified, was that Chinese writers present their results in a descriptive way, while their counterparts tended to emphasize the important points of the findings. Also, they found that in the introduction move, native speakers preferred to provide specific references and comment on previous research studies. In the discussion move native speakers preferred explanation or evaluation of the results, while Chinese writers ignored these styles. These are research studies focusing on abstracts written by native and non-native English speakers. It is clear that to be accepted by an international audience, non-native speakers need to be

aware of the writing conventions used as a standard for international journals or by Anglophone society.

Besides rhetorical structure analysis, grammatical features in RA abstracts, like tense and voice, are also topics which have been increasingly focused on. This is because they provide much insight into the written genre (Cooley & Lewkowicz 2003, Tu & Wang 2013, Zang, Thuc, & Pramoolsook 2012). Particularly, the use of tense in abstracts is one of the issues in genre-based analysis. As pointed out by Cooley & Lewkowicz (2003), the present tense is used in abstracts to present a summary of the article, while the past tense is used in summarizing the research. The background, aim, and conclusion moves are presented with the present tense while the method and results moves are written using the past tense (Tseng 2011, Zang et al. 2012). Salager-Meyer (1992) found that the present perfect tense, the past simple, and the present simple were used for different purposes. She pointed out that the verb tense chosen for the abstract should be based on the section of the text to which each sentence corresponds. For example, the present tense should be used for presenting introductory statements describing current understanding of the issue, while the present perfect tense should be employed for references to previous research, and descriptions of the methods and results should be referred to in the past tense. The use of voice forms is also interesting because the active voice is used nearly twice as much as the passive voice (Zang et al. 2012). However, it was found that the active and passive voices employed nearly the same degree of usage in the move for presenting results (Abarghooeinezhad & Simin (2015). Compared with native English speakers, Bonn and Swales (2007) found that French abstracts used the passive voice less often than in the abstracts of native speakers. They assumed that this result was affected by the particular writing styles of Francophones and Anglophones.

As mentioned above, both rhetorical moves and their linguistic realizations in

terms of tense and voice usage, are of considerable importance and play vital roles in the writing of RA abstracts. Moreover, it is a problem for non-native speakers when writing in English, as it is not their native language (Ren & Li 2011). This study, therefore, focuses on a comparison of generic structure and grammatical realizations of RA abstracts by ascertaining whether Thai authors produce their abstracts in a similar or different way from those RA abstracts written by non-Thai authors who published their papers in indexed and international journals. Also, to my knowledge, discourse-analysis of rhetorical moves of RA abstracts written by Thai writers and compared with those RAs published in well-known journals has been relatively sparse.

Two research questions were raised, as follows:

1) What are the generic structures of English ICT research article abstracts published in Thailand-based and international journals?

2) What grammatical features in terms of tense and voice are used to realize each move in the two corpora?

The findings from this genre-based approach will provide novice researchers, especially those who are working in ICT-related fields, with some knowledge of the use of genre in RA abstracts. With an awareness of rhetorical moves and linguistic realizations, it is believed that writers can shape their abstracts to conform to the conventional patterns used in their respective fields effectively.

2. METHODS

2.1 Data Collection

In the educational area, information and communication technology (ICT) is also of growing importance. It is recognized as one of the fastest-growing technological disciplines and it is considered as having a strong disciplinary nature (Maswana & Cheng 2017). Some research studies have focused on using ICT to support teaching and

learning. For example, Klimova (2011) studied the potential use of ICT as a tool to assist students' in writing formal English tasks, supporting their English writing skills. Hismanoklu (2011) conducted research on ICT integration into coursebooks and the use of multimedia resources in classrooms. However, research studies analyzing the RA genre in this discipline are rare. An analytical, genre based study was found in Maswana and Cheng's (2017) study, whereby the abstract section of RAs in the field of ICT, was analyzed. Their findings showed that the articles tended to use explicit expressions and emphasize the significance of the research, policy recommendations, and future work. Thus, it can be said that the ICT field is an area of particular interest for pedagogy and yet it is also an under-explored area. It is expected that the findings of this research will help novice Thai authors to some extent, especially those working within this field, and who face difficulties in composing their English abstracts for publishing in indexed journals.

2.2 Corpus Compilation

Two corpora were compiled for the analysis: an international corpus and a Thai corpus. Each corpus contained 30 English RA abstracts selected from three carefully selected journals. The journals in the international corpus, with their impact factor given in brackets, were the *Journal of Computer-mediated Communication* (4.113), *MIS Quarterly* (7.268), and *The Internet and Higher Education* (4.238). The criteria for selection of the journals was based on the ranking of journals in the Journal Citation Reports (2016) published by the Institute for Scientific Information (ISI), which is a world-leading database. ISI journals cover a broad range of subject categories including ICT journals each selected by medium to high citation indexes. To ensure that the selected journals were trustworthy and from the world's leading scholarly journals, the author also checked them against the Beall's list of predatory journals and publishers

(<http://beallslist.weebly.com>). The articles selected are written by non-Thai authors. It can therefore be said that the criteria for journal selection is representative and includes reputation and accessibility online.

On the other hand, the Thai corpus consisted of 30 RA abstracts in the ICT field written in English. Due to the limitation of abstracts in the ICT field written by a single author and published in referred journals, three abstracts included non-Thai authors as the co-authors and they were not the corresponding authors. The first authors of all abstracts were Thai and they were also as corresponding authors. The selected articles were taken from three peer reviewed journals published in Thailand, comprising of the “*International Journal of the Computer, the Internet and Management*”, “*Journal of Thai interdisciplinary research*”, and “*Walailak Journal of Science and Technology*”. These selected journals are indexed in Scopus and/or the ASEAN Citation Index (ACI). They are also listed as Tier 1 or Tier 2 in the Thai national database “Thai-Journal Citation Index Centre (TCI)” and can be accessed from the website (http://www.kmutt.ac.th/jif/public_html/list%20journal.php?branch=S) It is noted that ISI and the Tier 1 and 2 journals indexed in TCI are on the journal-adopted list of the Office of the Higher Education Commission (OHEC), Ministry of Education, Thailand.

2.3 Data Analysis

2.3.1 Framework

The analysis was grounded by Hyland’s (2000) model. This is because it has been empirically developed and applied in various disciplines, for example, Zhang et al. (2012) in agriculture, and Suntara and Usaha (2013) in applied linguistics. Also, Hyland’s model contains five main moves beginning with the introduction, and followed by the purpose, method, product, and conclusion. Although

Santos’ (1996) model is similar to Hyland’s, it was developed from an analysis of 94 abstracts derived from only a single field of applied linguistics while Hyland’s model was developed from an analysis of 800 abstracts across 8 fields from both hard and soft sciences and it has been widely used as a framework in several research studies (e.g. Al-Khasawneh 2017, Li & Pramoolsook 2015). Another important point is that Hyland’s model contains an introduction move, which was found to be important as it is used for establishing a territory or occupying a niche. However, the introduction move was not mentioned in Bhatia’s (1993) model. Also, Swales’ framework of IMRD pattern was not applied in the present study as it does not contain the purpose move. Stating the research aim is necessary and it should be stated clearly and separately. Therefore, Hyland’s (2000) model as shown in Table 1 was determined to be the most appropriate framework for the present study.

2.3.2 Assuring Reliability and Validity

Identification of moves and steps based on function can be criticized for its subjectivity. Inter-rater reliability is one of the ways to eliminate this concern (Crookes 1986). To ensure the reliability of the move analysis, another coder who has expertise in move-based research, was employed. To obtain agreement, move units from the coders needed to be identical in terms of move(s), their position in the discourse, and sequence of the moves. There was a discussion between coders when they disagreed. Besides inter-rater reliability, which was examined through the use of the coders, intra-rater reliability was also implemented (Mahzari & Maftoon 2007). To this end, a sample of twenty (ten from each corpus) was extracted out of the two sets of corpora and was re-analyzed by the researcher two months after the first rating. The cut-off points for move classification were based on Kanoksilapatham (2005)’s

Table 1. Hyland’s (2000) move model

Move	Function
Introduction	Establishes context of the paper and motivation behind the research or discussion.
Purpose	Indicates the 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.

criteria, which classifies the frequency of occurrence of each move ranging from obligatory, to conventional, to optional (i.e. 100%, 60%-99%, and less than 60% of the corpora, respectively).

2.3.3 Analysis Procedure

The first stage of the move-based analysis was to codify each abstract. All RA abstracts from both corpora were assigned separately as In1-In30 for the international corpus and Th1-Th30 for the Thai corpus. Although classifying the moves using our understanding of the content of the text is the key concept of move analysis, relying on linguistic features employed in the moves which correspond to the communicative function of each move facilitates the identification process. By using these approaches, we can strengthen the analysis process. The next important step was to record the frequency of occurrence, to determine the potential obligatory, conventional, or optional nature of each move. The frequencies of the moves were compared. In addition to move identification, tense usage and voice were observed and noted. Example 1 shows the categorization of both moves and grammatical features (italics signal a move, bold signals tense usage and underlining signals voice).

Example 1:

<Introduction Move> Interruption of work by e-mail and other communication technologies *has become widespread and ubiquitous*. However, our understanding of

how such interruptions influence individual performance **is limited**. ... (I22)

3. RESULTS AND DISCUSSION

As mentioned in the previous section, the present study aims to assist novice or non-native writers who are trying to publish their papers in international journals, especially ICT writers. One of the tasks they face is to write as convincingly and informatively as possible and importantly with specific space and word limitations by using the correct grammatical word choices. These ideal styles are extremely challenging for them. Therefore, the results on the rhetorical structures of both corpora should provide a clear picture of the abstract genre and provide practical guidance for them when generating their abstracts. If some differences or similarities are found, they will offer a signpost to make the writer aware of them.

3.1 Rhetorical Moves in the Two Corpora

This section presents the results of the move analysis to find the answer to research question number 1. Some salient points concerning the rhetorical moves used to realize abstracts are described together with representative examples taken from the datasets. At the end of each example, the RA number from which the example is taken is shown in parentheses, for example, (Th1) refers to RA number 1 from the Thai corpus and (In1) to RA number 1 from the international corpus. Table 2 illustrates the

frequency of occurrence of each move among the abstracts in each corpora.

As shown in Table 2, all five moves in Hyland's (2000) model appeared in both datasets indicating the comprehensiveness of the model. However, some similarities and differences were found. The similarities are that the conclusion move was the least frequent move for both datasets. However, the most frequent move of the two sets of data was different. The International corpus showed a strong usage of the production move (93%), while the introduction move (83%) was most prevalent in the Thai corpus.

The frequency of occurrence of the four moves were relatively high and they were classified as conventional moves, while only the conclusion move was determined to be an optional move. The results are consistent with previous studies, which found that the product move was the dominant move in the abstracts in nearly all fields of studies (Li & Pramoolsook 2015, Suntara & Usaha 2013, Zhang et al. 2012). This infers that presenting results is the most essential part of the abstracts and it should be used as the conventional form for most well-known abstracts. However, the ways to present the results were interesting. Comparing text lengths for describing the introduction and production moves, in the Thai corpus, the authors were likely to provide brief results. They were likely to give more details about

the background information. Thai authors presented their results comparatively briefly as shown in Example 2.

Example 2:

<**Introduction**>The emergence of Twitter in Thailand has given millions of users a platform to express and share their opinions about products and services, among other subjects, and so Twitter is considered to be a rich source of information for companies to understand their customers by extracting and analyzing sentiment from Tweets. This offers companies a fast and effective way to monitor public opinions on their brands, products, services, etc. However, sentiment analysis performed on Thai Tweets has challenges brought about by language-related issues, such as the difference in writing systems between Thai and English, short-length messages, slang words, and word usage variation. <**Purpose**>This research paper focuses on Tweet classification and on solving data sparsity issues. <**Method**>We propose a mixed method of supervised learning techniques and lexicon-based techniques to filter Thai opinions and to then classify them into positive, negative, or neutral sentiments. The proposed method includes a number of pre-processing steps before the text is fed to the classifier. <**Product**>Experimental results showed that the proposed method overcame previous

Table 2. Frequency of moves found in the abstracts of the two corpora

Move	International Corpus (N=30)	Thai Corpus (N=30)
Introduction (I)	19 (63%)	25 (83%)
Purpose (P)	22 (73%)	22 (73%)
Method (M)	26 (87%)	24 (80%)
Product (Pr)	28 (93%)	22 (73%)
Conclusion (C)	16 (53%)	6 (20%)

limitations from other studies and was very effective in most cases. The average accuracy was 84.80 %, with 82.42 % precision, 83.88 % recall, and 82.97 % F-measure. (Th21)

Obviously, the frequency of the Conclusion move in both sets of data were completely different. The function of the Conclusion move is to interpret or extend results beyond the scope of the paper, draw inferences, point to applications or wider implications. Although this move was optional in both sets of data, there are some points that should be mentioned. It appeared in 53% of abstracts in the International corpus. This occurrence was over two times higher than that of the Thai corpus (20%). This suggests that the authors from the International corpus tended to end their abstracts with interpretation or inference to results beyond the scope of the study being conducted more often than the Thai authors. If we look closely at the style of presentation for the conclusion move, international authors tended to discuss their research by evaluating the findings and linking the reported research back to the research field as a whole. Thai authors, who had a lower frequency of usage in this respect, opted to draw practical implications for their disciplines when a conclusion was used, as presented in Example 3. In an analysis of ICT research articles, Maswana and Cheng (2017) found that the conclusion move was only used in 5 out of the 16 abstracts. Thus, it was an optional move as with the present study. Focusing on non-native English speakers, Abarghoeeinezhad and Simin (2015) noticed, in their study, that Iranian authors tended to leave their abstracts with vague ending, as if they were unable to convince their readership of how to acknowledge their research findings, which is different from native-English speakers or experienced writers who know how to link their work to the field in general. In the present study, Thai authors show themselves as reluctant to relate their achievements to the general field. There may be another reason which affects the style of Thai authors. The conclusion move was found to be only 40 percent in Al-Khasawneh's (2017) study. He

believed that the lack of this move in abstracts composed by non-native speakers is presumably the result of the writers' lack of English language knowledge or weakness in expressing themselves in the language. These language constraints may hinder them when conveying their thoughts in written form. This is similar to the present study in which 25 percent of the Thai abstracts showed grammar and punctuation problems resulting from inadequate grammatical knowledge as revealed in Example 4. This clearly shows, that it is not only a difference of disciplines, but writers' linguistic background also plays an important role in writing.

Example 3

.... <Conclusion> This analytical model *could be used* for various tasks, including predicting future user activities, monitoring traffic patterns of networks, and forecasting the distribution of content. (Th22)

Example 4

The objective of this research*: 1) To compare the ability of spelling of prathomsuksa 2 students between pre-test and post-test that study by cooperative CIRC technique integrated with exercise, 2) ... (Th2) (* No main verb)

With regard to the introduction move, Thai authors outnumbered international authors in their use of this move. The high frequency of occurrence found in the Thai corpus can be explained by the fact that the authors preferred to situate their studies in the literature. The ICT field is a dynamic and interdisciplinary field (Maswana & Cheng 2017), especially in Thailand, and this field is considered young, fully integrated and to be developing dramatically. With the rapid pace of technological change in ICT research areas, authors need to explain the unfamiliar background of their studies as much as possible, wherever it is related to their studies. The methods of presenting the introduction move are interesting. It was found that international authors indicated gaps in the previous studies, thus showing the need for

the current contribution. Some negative devices (relatively little, only a small, no prior study) and contradiction connectors (however, despite, but, although) were employed as shown in

Example 5.

The methods used to establish a niche are also of interest. There were comments on specific gaps in the existing literature, references to limited (or nonexistent) research, or the insufficiency of research in a particular area of study. As can be seen from the items listed in Example 5, items 1, 2, 4, 5, and 8 show how abstracts in the international corpus tended to evaluate and comment on the previous literature. However, in the Thai abstracts three of them merely state the absence of such a study in their context. This evidence supports previous studies (e.g. Hirano 2009, Kanoksilapatham 2007) who reported that when establishing a niche, non-native authors tended to mention the lack of inadequate research on the research areas being investigated. Presumably, argumentative skills, critical comments, and evaluation of other works are seen as unduly harsh in some cultures, such as Thai culture.

Example 5

International corpus:

- 1) *However*, most research has focused on small samples or has used variables that are expensive to measure, which limits its generalizability. (In8)
- 2) *However*, many projects are failing to embed OOE within the institution. (In9)
- 3) *Although* research has explored the use ..., there has been little emphasis on ... *Even* less is known about its role in the ... (In16)
- 4) *Although* incivility is an increasing ..., explanations for this phenomenon sometimes overlook the ... (In19)
- 5) *Although* habituation is a ..., past studies have only examined this problem cross-sectionally. Further, past studies have not examined how (In21)

6) *However*, our understanding of ... is limited. (In22)

7) *Although* some traditional call centers might ..., since there has been *little* theoretical or empirical investigation of this... (In26)

8) While deceptive communication has been studied for decades, some areas are **not well understood**. (In28)

Thai corpus:

- 1) *However* there was a prominent lack of research on Also, there were *lack of* research studies and academic papers presented about ... (Th1)
- 2) *Although*, SCRUM, XP and ... are a few of the popular methods today, there is *no* one particular method that is consistent with (Th8)
- 3) Numerous methodologies and systems have been proposed and ... *However*, there is still a *lack of* ... The concept of .. solves the traditional problem of tight coupling, *but* does not address the... (Th24)

3.2 Grammatical Features

The following results concerning the distribution of tense and voice usage are presented to answer to the second research question.

3.2.1 Tenses

The use of tense in both corpora was not strikingly different. Table 3 shows that the present simple tense was the most frequently used tense in most moves while the past tense was the second most frequent tense found in both corpora. The tense with the least usage was the present perfect tense which only appeared in 18 abstracts (only 9 from each corpus). The present simple tense was used in all moves, while the past tense was used heavily in the method and product moves. The present perfect tense was mostly found in the introduction move. In previous research

Table 3. The use of grammatical constructions in moves

Move Types	I		P		M		Pr		C	
	In	Th	In	Th	In	Th	In	Th	In	Th
Total Number of Abstracts Containing Move Types	19	25	22	22	26	24	28	22	16	6
Past tense	1	3	4	6	15	14	14	14	-	-
Present tense	15	21	18	16	17	13	18	15	16	6
Present perfect tense	8	5	-	-	-	1	1	3	-	-
Active voice	15	16	22	21	18	12	19	15	14	4
Passive voice	-	-	-	-	3	5	1	3	1	-
Active + Passive voices	4	9	-	1	5	7	8	4	1	2

findings, the present simple tense was also the preferred move in their corpora (Alhuqbani 2013, Suntara & Usaha 2013). The use of verb tense was different from the study conducted by Tseng (2011). In Tseng's study, the method and product moves were presented in the past form, but in the present study use of the present tense was comparatively high. In a hard science study conducted by Alhuqbani (2013), both method and product moves of abstracts from the field of medicine, were presented in the past tense, accounting for 100 %. Also, the results of the present study were completely different from a study carried out by Zhang et al. (2012). They found that the present tense was 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 in the methodology move. However, the regulations of each journal and the authors' awareness of tense usage might be other factors accounting for these differences.

3.2.2. Voice

As shown in Table 3, active voice was the preferred choice used in both datasets. The second most frequent was a mixture of active and passive voices and the passive voice occurred least. Some differences were found in the mixing of voice in the International and Thai corpus. In the Thai corpus, there was

mixing of two voices in the introduction move, while in the international corpus it took place in the product move. As in the research findings of Zhang et al. (2012), the use of the active voice was especially high in the method and product moves. In contrast, the passive form was frequently used to present the research procedure and report the findings in the RA abstracts (Tu & Wang 2013). This means that the authors shifted the focus from the subject to the object. However, in the present study, the use of only the passive voice in the method or product moves was less frequent, but a mixture of passive and active forms predominated (See Examples 6 and 7). It can be inferred from this that most authors tend to develop their abstracts in a direct rather than an impersonal way.

Example 6

This study *tested* the temporal association between Online communities *were constructed* by a post-sharing network of 1,644 Facebook page... (In17) (Method move)

Example 7

The results *showed* that the scores of... *are very high*. And, the English instructors *were extremely satisfied* by the game. ... (Th17) (Product move)

4. CONCLUSION

The main aims of the present study were to investigate the generic structures of English RA abstracts published in Thai-based and international journals using Hyland's (2000) framework and to identify the uses of tense and voice. It was found that four moves (introduction, purpose, method, and product) were the most conventional moves in the two datasets. There were no obligatory moves in either corpus. The highest frequency of occurrence in the international corpus was for the product move, while in the Thai corpus it was for the introduction move. The conclusion move was the least frequent in both corpora. The present simple tense in an active form was the preferred option used to present each move in both sets of data. The second most frequent was the active form of the past tense followed by the present perfect tense. A mixture of active and passive voices was also the preferred choice in the introduction, method and product moves. In the Thai corpus grammar and punctuation problems were represented in twenty-five percent of the RA abstracts.

It is believed that these findings can be used as guidelines for teaching the writing of English RA abstracts to students pursuing their masters' and doctoral degrees, especially non-native ICT graduate students. Based on the findings, the product move and present simple tense are essential and preferred forms, and active voice is much more favorable than passive voice. It is suggested that writers should consider these characteristics when developing their RA abstracts. However, this present study has some limitations and they should be taken into consideration when conducting comparative studies. Firstly, the analysis was carried out with only 30 RA abstracts from each corpus. A larger corpora would provide a clearer picture of the generic structures of the abstracts in the ICT field. Secondly, only the abstract section was analyzed. This may limit the generalization of the findings. Thirdly, the authors' background in terms of English proficiency, writing and publishing RAs, and the involvement of co-

authors, should also be taken into consideration.

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