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Moves of Electronics and Telecommunication Engineering English Research Article Abstracts Published in Thai Journals

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ABSTRACT

Writing research article (RA) abstracts in English is one of the requirements for science and technical educational researchers who need to promote their studies nationally and internationally. It is one of those challenging tasks apart from other research article sections. As English has practically become an international language, most published RAs are written in English. This places difficulties on Nonnative speaking of English (NNS) in EFL settings. The objective of this study is to identify the moves of Electronics and Telecommunication Engineering English RA abstracts published in Thai journals. Forty English abstracts were purposively selected from Electronics and Telecommunication Engineering journals published in Thailand to form a corpus. The analysis was conducted using Hyland's (2000) which included Electrical Engineering abstract moves framework. The findings of this study demonstrate that the analyzed abstracts tend to take a mismatched structure rather than the modeled framework. Although the findings reveal a difference between the actual practice and the chosen framework, this can imply that the writers in this particular discipline chose to present their work in ways that fail to conform to a universal framework. The present study suggests that its results can serve as an additional guideline for novice researchers to help them be able to write English RA abstracts properly in their field.

Keywords : Move Analysis / Discourse Analysis / Genre Analysis / RA Abstracts

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Introduction

Research articles (RAs) published in international research journals are a major means for researchers to disseminate their reports to their discourse communities (Zhang, et al., 2012). English has practically become an international language, and it cannot be denied that most published research articles are written in English. An English abstract accompanying a research article is one of the requirements from both international and national journals as well. In the context of globalization and international research collaborations, the ability to read and /or write RAs in English is crucial for academic and professional success in science and technology (Kanoksilapatham, 2015). For those people who work in universities across Thailand that aim to be promoted as senior professors, they are expected to conduct research studies, write research reports, and publish their research in the English language.

In my workplace, Rajamangala University of Technology Isan, Khon Kaen campus, Electronics and Telecommunication Engineering (ETE) is one of the first departments with its famous reputation in engineering. Before it became a department under the university administration in 2006, this program was founded as a division under Rajamangala Institute of Technology in 1988 and has a long-standing reputation since then. Because of its popularity, the program attracts students across the northeast region of Thailand. Moreover, qualified instructors with a PhD degree work in the department. The researchers in this particular discipline have to deal with the studies about design, integration, application of circuits and devices used in the transmission, devices and systems that transmit electronic or optical signals across long distance (Dulger, 2006). Much of the research in this field is written in English. To understand the move of RA English abstracts written in this particular discipline, ETE English research article abstracts are selected.

From a preliminary interview with non-native English speaking (NNES) instructors/ researchers of Electronics and Telecommunication Engineering discipline holding a PhD degree, they revealed that to make progress on their academic careers, they must conduct and write their research in English. This places much difficulty on them and emphasizes the problem realization made by NNES researchers when they write the papers to be published in English (Cheung, 2010). Interestingly, to help them overcome the disadvantages of publishing their research, identifying the move structure of RAs progressively is important. Therefore, the researchers of this present study will focus the move analysis on the Electronics and

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Telecommunication Engineering English RA abstracts published in Thai journals as guidance for further studies.

Writing abstracts is one of those endless and challenging tasks apart from other sections, i.e., Introduction, Methodology, Results, and Conclusion. An abstract is an explanation or factual summary of a much longer report, and it is meant to give the readers an exact and concise knowledge of the full article (Bhatia, 1993). In addition, the most important function of the abstract is to inform prospective readers about the exact content of the article (Arsyard, 2014). Readers will determine the value of the research by reading abstracts whether the study is useful to draw the readers' attention (Hyland, 2000; Martin, 2003). Therefore, a well-written RA abstract will promote the text attached to it more effectively (Ren & Li, 2011).

Move analyses of RA abstracts have been found numerously and published in international journals. Many of which include Bhatia (1993), Brenton (1996), and Hyland (2000) on a range of disciplines, Lorés (2004) on Linguistics, Kanoksilapatham (2009) on Biochemistry, Ren and Li (2011) on Applied Linguistics, and Saengsai and Pramoolsook (2017) on Sciences and Engineering. With this regard, abstracts have concisely been recognized as one of the most common means of communication (Kanoksilapatham, 2009).

According to the popularity of RA abstract move analyses as mentioned earlier, however, there are a few studies on RA abstracts showing the results on abstracts published in Thai journals, i.e., Saengsai et al. (2016) on Scientific RA abstracts which are published only in one Thai journal. From the preliminary observation, evidence of the move analysis on RA abstracts in Electronics and Telecommunication Engineering published in Thai journals has not been revealed. To help NNES researchers write a proper abstract to get published effectively in the ETE discipline, the writers need to know the structures of English RA abstracts.

Objective of the Study

The objective of this study is to identify moves in Electronics and Telecommunication Engineering English research article abstracts published in Thai journals.

Materials and Methods

1. Selection and Corpus Management

Forty English abstracts were purposively selected from five Electronics and Telecommunication Engineering journals published in Thailand during 2012-2015. The selected

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abstracts are reliable and available to be downloaded online of peer-reviewed open access journals ranked in Tie 1 and Tie 2 by Thai Journal Citation Index Center (TCI), namely, 1) RMUTI Journals, 2) Suranaree Journal of Science and Technology, 3) Engineering Journal, 4) ECTI Journal, and 5) KKU Engineering Journal. In addition, the journals' list in this present study corresponds to the criteria of the corpus selection, following the general identification of sources from texts to be collected by Nwogu (1997) – representativeness, reputation, and accessibility. To designate a corpus, the selected abstracts were indicated as ETE1-ETE40 for ease of reference and anonymity of each abstract.

2. Analysis Methods

Following the five-move framework suggested by Hyland (2000) which analyzes the abstracts from various disciplines including the Electrical Engineering field, the framework offers an account of abstract writing that reflects the writers' negotiation with the significance of their research internationally. Unlike the abstract framework of Bhatia (1993) which corresponds to the organization of the paper itself: *Introduction-Methods-Results-Conclusion*, Hyland's (2000) framework separates the writer's purpose from the introduction because this represents a very different role to the introduction's purpose. Therefore, this five-move framework was employed to investigate the RA abstract move of the corpus. Tables 1 and 2 below are move classification of RA abstracts (Bhatia, 1993; Hyland, 2000), respectively. To identify the move, searching for organization where communicative purposes of the writers were located. The sentence-level analysis was also used as some moves can be realized by one sentence or more or even by the whole paragraph to show only one move. Therefore, a sentence or a group of them was identified into the same move until the new move was uncovered. The move classification was then validated by using the inter-rater method to ensure the reliability of the results of the study. This process was done by two researchers with PhD degrees from English Language Studies and Electronics and Telecommunication Engineering disciplines.

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Table 1 English RA Abstract Framework (Bhatia, 1993, adapted from pp.78-79)

Move	Function of move
Introducing purpose *(I)*	Outlines the objectives or goals of the experiment. This move gives a precise indication of the author's intention, thesis or hypothesis which forms the basis of the research being reported.
Describing methodology *(M)*	Provides a good indication of the experiment design, including information on data, procedures and methods. The author gives a good indication of the experimental design, including information on the data, procedures or method(s) in this move.
Summarizing results *(R)*	Offers observations and findings and suggests solutions to the problem. This is an important aspect of abstracts where the author mentions his observations and findings.
Presenting conclusions *(C)*	Interprets results and draw conclusions. This move is meant to interpret results and draw inferences. It typically includes some indication of the implication and applications of the present findings.

Table 2 English RA Abstract Framework (Hyland, 2000, adapted from p.67)

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

3. RA Abstracts Move Frequency Classification

To classify the move frequency, the abstract analysis was based on Kanoksilapatham (2005). For instance, if one move is found in all forty abstracts accounting for 100%, it is considered as 'obligatory', 60-99% is regarded as 'conventional', and below 60% is

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considered as 'optional'. However, a move that was not identified in Hyland's (2000) framework will not be determined as a new move in the corpus unless it is found at 50% or above (Nwogu, 1997). An analysis of Electronics and Telecommunication Engineering RA abstracts moves published in Thai journals was then revealed.

4. Inter-rater Reliability

This analysis method was done collaboratively by two coders. It is the extent to which a measuring method yields the same repeated results on repeated trials. In this process, the simple method of reporting inter-reliability, 'Percent Agreement' proposed by Frisby (2017) was used to ensure the reliability of abstracts in Scientific RAs published only in one journal published in Thailand. The criterion between two coders who code the same units is concerned with whether they agreed to the precise samples assigned to a given variable. Raters should be individual with some linguistic sophistication. Following Kanoksiplatham (2005), the researcher from English Language Studies invited the other researcher from the Electronics and Telecommunication Engineering discipline to help confirm the reliability and validity of RA abstracts' move results. The findings from the two coders were then compared and discussed to reach 100% agreements.

Results and Discussion

The analysis of the present study reveals that 40 abstracts have the average word count of the corpus of 155 words, pointing out that the ETE journal publishers might likely limit the words of abstracts for the writers, and the number is less than the standard length at 200 words approximately suggested by Hyland (2000). Undoubtedly, all abstracts are located at the first part of the corpus. This indicates that the writers who want to publish their work in research articles, they have to prepare the related contents to this requirement section capably. Moreover, sixteen abstracts are written by Thais and 24 abstracts are written by writers from other countries in Asian. This emphasizes the importance of writing abstracts in English to promote knowledge around the globe. In terms of the move analysis, many of the Electronics and Telecommunication Engineering English RA abstracts are written by using a four-move structure (60%), which appears in 24 of 40 abstracts. The four most frequent moves are written differently in dissimilar sequences of the *Introduction, Purpose, Methodology, Products* (IPMPr) from 14 abstracts. The *Purpose, Methodology, Products, Conclusion* (PMPrC) sequence from 8 abstracts, and the *Purpose, Methodology, Introduction, Products* (PMIPr) from 2 abstracts. Surprisingly, only four abstracts (10%) contain five moves as presented in the

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Hyland's (2000) framework. The result of four most frequent moves corresponds to the study in Hyland (2000) and Saengsai & Pramoolsook (2017), revealing that the four-move structure is a principle move for Engineering RA abstracts of the studies. Although 24 abstracts of the present study are written in different sequences of a four-move structure, *Purpose* (P), *Methodology* (M), *Products* (Pr), and *Introduction* (I) Moves are found more than 60% of the corpus. These four dominant moves of IPMPr in the corpus can probably be the case in the Electronics and Telecommunication Engineering English RA abstracts published in Thai journals. For the frequency classification of I,P,M,Pr moves, *Purpose* (P) is obligatory (100%), *Methodology* (M), *Products* (Pr), and *Introduction* (I) are conventional (90%, 80%, 70%), severally. However, the *Conclusion* (C) is optional as it is the only move found less than 60%. The results of this study demonstrate that the abstracts analyzed tend to take a four-move structure rather than following the five-move framework. Most of them begin the abstract with the *Introduction* (I) move. This can stress that the writers of the corpus establishing context of the paper and motivating the research of discussion as the first part of the section, then indicating purposes in their research, following with providing the information on design, procedures as well as closing the RA abstracts with the *Product* (Pr) move to point to applications for further studies. For example:

I Move: "Long term evolution (LTE) technology is the most likely candidate for the next generation of mobile wireless communication. One drawback of LTE is interference from neighboring cells, so called inter-cell interference..... (ET10)

Pr Move: "The obtained results show that the soft FFR technique including beam forming is the best choice for LTE systems. (ET10)

I Move: "Logic macro programming paradigms for wireless sensor networks (WSNs) are rule-based abstractions for programming a network as a whole..... (ET24)

Pr Move: "Our analysis reveals several important aspects that should be considered when designing such systems. (ET24)

As mentioned earlier, the four-move structure (60%) were written as the main sequence in the ETE corpus of this present study, however, only four abstracts strictly resemble the model. Even though the findings show differences between the actual practice and the selected framework, this can be indicated that the Electronics and Telecommunication Engineering researchers prefer to present their work in ways that fail to comply with a universal framework (Saengsai et.al, 2016; Saengsai & Pramoolsook, 2017). Table 3 below shows the findings on the moves of the English RA abstracts in ETE published in Thai journals of the present study.

Table 3 Moves of English RA abstracts in Electronics and Telecommunication Engineering Published in Thai Journals

Journals / Move type	RMUTI Journal								Suranaree Journal of Science and Technology								Engineering Journal								ECTI Journal								KKU Engineering Journal								Total
	ETE 1	ETE 2	ETE 3	ETE 4	ETE 5	ETE 6	ETE 7	ETE 8	ETE 9	ETE 10	ETE 11	ETE 12	ETE 13	ETE 14	ETE 15	ETE 16	ETE 17	ETE 18	ETE 19	ETE 20	ETE 21	ETE 22	ETE 23	ETE 24	ETE 25	ETE 25	ETE 27	ETE 28	ETE 29	ETE 30	ETE 31	ETE 32	ETE 33	ETE 34	ETE 35	ETE 36	ETE 37	ETE 38	ETE 39	ETE 40	
I	+	-	+	-	+	+	+	+	+	+	+	+	-	-	+	-	-	+	+	+	+	-	+	-	+	+	+	+	+	+	+	+	-	-	+	-	-	+	+	+	28(70%)
P	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	40(100 %)
M	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	-	+	+	36(90%)
Pr	+	+	+	+	+	+	-	+	+	-	-	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	-	+	+	-	-	+	+	+	+	+	+	-	+	+	32(80%)
C	-	+	-	-	+	-	-	-	-	-	-	-	+	-	-	+	+	-	+	-	-	+	-	-	+	-	-	-	-	-	-	-	+	-	-	+	+	-	+	-	12(30%)
Number of Move Types	4	4	4	3	5	4	3	4	4	2	3	4	4	3	4	4	4	2	5	4	4	4	4	3	5	4	3	4	4	2	3	4	4	3	4	4	4	2	5	4	

Note. *I = Introduction / P = Purpose / M = Methodology / Pr = Products / C = Conclusion*

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Conclusion

Writing RA abstracts in English is one of those challenging tasks apart from other research article sections. The main aim of this present study is to identify moves in Electronics and Telecommunication Engineering English RA abstracts published in Thai journals. A five-move framework proposed by Hyland (2000) was employed to investigate the English RA abstracts in this corpus. The results revealed that the abstracts are written by using a four-move structure (60%) in dissimilar sequences of I-P-M-Pr, P-M-Pr-C, and P-M-I-P-R, respectively. However, only four abstracts resemble the model of I-P-M-Pr-C. It can be concluded that the analyzed abstracts tend to take a mismatched structure rather than conforming the framework. Following Kanoksilapatham (2005), the *Purpose* Move is found as obligatory (100%). *Methodology*, *Products, and Introduction* Moves are conventional (90%, 80%, 70%), respectively. However, the *Conclusion* is the only move occurred lower than 60%. In this present study, the writers from this particular discipline mostly selected a four-move structure to be written in their English RA abstracts to get published in Thai journals. The result of this resembles the study in Hyland (2000) and Saengsai & Pramoolsook (2017), showing that the four-move structure is a principle move for Engineering RA abstracts. However, the sequence of move employed by the ETE writers is distinct from those mentioned. Therefore, the I-P-M-Pr as the most favored move sequence can possibly be the circumstance of ETE English RA abstracts. This can point of that the writers of this field mostly begin the abstracts with the *Introduction* move to establish context of the paper and motivate the research to be conducted, then finally end the section with the *Product* move to state main findings and make arguments to what was achieved. As revealed by many of them from Electronics and Telecommunication Engineering field, to make progress in their professional careers they have to conduct and write the research in English. However, they are facing difficulties in their English research writing. This can be similar to the situation of Asian novice writers as well (Bunton, 2002; Paltridge & Starfield, 2007; Min et al. 2013; Saengsai & Pramoolsook, 2017).

Recommendation for Further Studies

The results of this present study can initiatively be a guideline for the ETE researchers to write English RA abstracts properly. However, it has its limitation in that the present study can only be generalized to Electronics and Telecommunication Engineering English RA abstracts published in five Thai journals only. Therefore, more ETE journals published nationally and internationally should be analyzed. In terms of pedagogical implications, knowledge on writing English RA abstracts is crucial to raise awareness for EAP researchers in ways that abstracts are organized and

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to express their certain purposes. Clear genre writing instructions with formal training by a university on the moves helps shape NNS writer's knowledge of writing the research in their particular discipline. For clearer picture of how the writers pen their abstracts, analyzing the similar study from more journals apart from the corpus of this present study should be conducted. Moreover, for better insights and qualitative data on writing process and perspectives from the abstract section, it is suggested that discourse-based interviews and linguistics features analyses from a wide range of disciplines should be conducted. This would give more interesting results.

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