
Move Structure of Introduction Sections in Research Articles from the Journal of the Myanmar Academy of Arts and Science

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Abstract

The present research aims to investigate move structure of introduction sections in selected research articles from annual research journal published by the Myanmar Academy of Arts and Science by means of Swales (1990) CARS model. The objectives are to explore the move structures that establish a territory, that establish a niche and that occupy a niche in the research article introductions. The present research focuses on Introduction sections of 50 selected research articles, 25 each from Arts and Science disciplines, from the Journal of the Myanmar Academy of Arts and Science, Volume XI, No. 1 to 10, published in 2013. For the analysis, CARS model of moves by Swales (1990) has been applied. The findings highlight that the research articles introduction from both Arts and Science disciplines show limited application of move structure claimed by Swales. Consequently, the findings shed light on the way researchers from Myanmar context structure the introduction section; which demand either to change or adapt to standard structure proposed and applied by creditable scholars and researchers. Accordingly, the present research will also highlight ways to structure research articles introduction to come up to international knowledge sharing community and to avoid problematic linguistic features.

Keywords : move structure, research article, introduction sections, the journal of the Myanmar Academy of Arts and Science

บทคัดย่อ

การวิจัยนี้มีวัตถุประสงค์เพื่อศึกษาโครงสร้างอัตถภาคของส่วนบทนำในบทความวิจัยที่เลือกจากวารสารวิจัยประจำปีซึ่งตีพิมพ์โดยสถาบันศิลปะและวิทยาศาสตร์ประเทศพม่าโดยใช้รูปแบบของ Swales' CARS model (1990) วัตถุประสงค์เพื่อศึกษาโครงสร้างอัตถภาคที่วางขอบเขตวางตำแหน่งที่เหมาะสม และวางตำแหน่งที่เหมาะสมในบทนำของบทความวิจัย วิจัยนี้เน้นไปที่ส่วนบทนำจากบทความวิจัยที่เลือกจำนวน 50 บทความ จากสาขาวิชาศิลปศาสตร์และวิทยาศาสตร์ และจากวารสารของสถาบันศิลปะและวิทยาศาสตร์ประเทศพม่า ชุดที่ 11 ฉบับที่ 1 ถึง 10 ซึ่งตีพิมพ์ในปี 2013 อย่างละ 25 บทความ การวิเคราะห์ข้อมูลใช้รูปแบบของ Swales' CARS model (1990) ผลการวิจัยพบว่าบทนำของบทความวิจัยจากทั้งสาขาวิชาศิลปศาสตร์และวิทยาศาสตร์แสดงให้เห็นถึงการนำโครงสร้างอัตถภาคไปใช้อย่างมีขีดจำกัดซึ่งอ้างโดยสเวลล์ ดังนั้น ผลการวิจัยแสดงให้เห็นถึงส่วนบทนำโครงสร้างบริบทของพม่าซึ่ง; ต้องการการเปลี่ยนแปลงหรือปรับให้เข้ากับโครงสร้างมาตรฐานอย่างไรอย่างหนึ่งซึ่งนำเสนอและนำไปใช้โดยนักวิชาการที่น่าเชื่อถือและนักวิจัยหลายท่าน ดังนั้นการวิจัยนี้ยังเน้นวิธีการจัดโครงสร้างบทนำของบทความวิจัยเพื่อไปสู่กลุ่มการแลกเปลี่ยนความรู้ระหว่างประเทศและเพื่อหลีกเลี่ยงลักษณะทางภาษาที่เป็นปัญหาอีกด้วย

คำสำคัญ : โครงสร้างอัตถภาค บทความวิจัย ส่วนบทนำ วารสารของสถาบันศิลปะและวิทยาศาสตร์ประเทศพม่า

1. Introduction

“Research” has practically become the most well-established pillar in almost all academic fields all over the world. To make progress and to explore more and more innovative and up-to-date assets and resources about related fields of study, academic staffs perform researches. Inevitably, the researches have to be written down, as the research findings have to be recorded, proven, publicised and shared. And accordingly, a great deal of research articles has been published in recent years. The number of English research articles that have been published internationally is keeping increased. As in global context, ‘expansion of research’ is one of the six core areas under focus of 30-year long-term Education Development plan in Myanmar, according to ‘Panorama of Myanmar Higher Education, (<http://www.myanmar-education.edu.mm/dhel/panorama-of-myanmar-higher-education>). Likewise in other academic fields of study, academic staffs have to do and write researches in academic field of teaching and

learning. 'Teaching' alone is not a 'must' for academic staff. 'Doing a Research' has also necessarily become a 'must' for the improvement of teaching-learning process. Therefore, doing a research is one of the most essential necessities. Consequently, 'how to write' a research paper is as crucial as 'how to do' a research. There is a procedure to follow in writing a research paper, if it is to be published as internationally accepted paper of research. Subsequently, concrete proof of a research, 'the research paper' is worth studying.

There are general structures of research paper that have been claimed according to the nature of field of study or standard of particular board or publishing details. These can generally be termed as institutional or local or national standard. However, for the research article to be published internationally there has a standard or structure to follow, which may be slightly or completely different from any other claimed structures. Out of many accredited structures, the most proven and well-established structure to follow in academic research writing is that of Swales (1990).

To gain international acceptance in publishing, it is therefore needed that the research paper must have to be written in English following the global-class structure. In Myanmar, a great deal of research has been accomplished and published. According to 'Enhancing quality to prepare higher education of Myanmar in 21st century' presented by Professor Dr Soe Win in 'Global education dialogues – TheEast Asia series (Vietnam)' held in December 2013, it has been recorded that, from 2003 to 2013, 4370 research articles have been published under the Ministry of Education. The number comprises many researches in different fields of study published by Department, each University and Myanmar Academy of Arts and Science. Despite a great deal of published articles, it is needed to pay attention to writing and publishing research articles in internationally recognized structure. And despite the importance of writing up a research systematically, few researchers have studied the research articles published in Myanmar. According to researcher's knowledge, there is no reported study of published research articles to date of 2013. There are some researches that investigated some unpublished dissertations of Arts and Science disciplines, but not published research articles. Hence, in teaching-learning context of Arts and Science universities in Myanmar, additional studies on writing structure of published research articles are still needed. Published research articles are more approachable step-stones to come up to international standard and to share and publicise innovative research findings

to the international teaching-learning context.

The aim of this research therefore is to investigate the move structure of published research articles. The research focuses on the introduction section of research articles in the Journal of the Myanmar Academy of Arts and Science published yearly in Myanmar. The move structure of introduction has been studied in terms of the CARS (Create a Research Space) model proposed by Swales (1990). The research papers are supposed to follow the IMRD (Introduction-Method-Result-Discussion) format proposed by Bruce (1983). And among these four sections, Introduction and Discussion sections are more universal and less content and context related while Method and Result sections are not. In this research, the introduction sections of the research articles are exclusively studied. The present study analysed 25 research articles from Science disciplines and 25 from Arts disciplines. The research articles are selected from the Journal of Myanmar Academy of Arts and Science, published under Ministry of Education, Myanmar. All of the arts and science research articles are selected with particular focus on teaching and learning disciplines. The reasons behind choosing research articles in research journal rather than theses or dissertations are that they are published and research articles are the most approachable forms which publicise innovative research findings. Moreover, to come up to international level, research writing has to be in form of published research articles with format and structure of global context.

2. Research Objectives

This research has three objectives:

- To explore the move structures that establish a territory
- To examine the move structures that establish a niche
- To analyse the move structures that occupy a niche

3. Research Methodology

3.1. Materials

Research articles from the Journal of Myanmar Academy of Arts and Science are the materials that are used to fulfil the aim of the study. In selecting research

articles, the researcher adopts the framework used by Mirahayuni (2002).

The selection of materials was governed by four considerations according to the adopted framework: the field of study, the text types, the availability of material, and the feasibility of carrying out the analysis.

Firstly, when it comes to 'the field of study', one can choose either a single discipline or different disciplines. If the research articles are selected from one and only discipline, for example, only research articles from English language and language teaching, the findings will not be representative and accredited for generalisation. In other words, the result cannot be applicable to other fields of study and it will not be possible to represent the structure of found in research articles from the journal of the Myanmar Academy of Arts and Science. Hence, selecting only one field of study can bring negative and arguable consequences. Alternatively, the research articles from different fields of study can be selected to solve the problem. It can thus serve to be representative and it would be more expedient in generalisation. Including all the research articles from different field of study, however, can be challenging to the researcher when it comes to field-specific or context-specific writing conventions. Nevertheless, investigating research writings from different fields of study has no known negative consequences as in the first. Accordingly, in the present research paper, published research articles from different fields of study in Arts and Sciences disciplines have been studied.

Secondly, the text type is research articles in English. The choice of this text type is due to its continuing importance as a medium for academic communication (Mirahayuni, 2002). And, out of all other research writings such as dissertations or theses, research articles are used as materials for analysis, as they are published and they are the simply accepted blueprint for knowledge sharing in international academic platform. Moreover, although there are academic research articles written and published in Myanmar language, only English research articles by Myanmar researchers are selected and analysed. The reason is that academic research writing written in internationally and academically prestigious language, English, is the standardised form for academic communication and knowledge sharing worldwide.

Thirdly, in terms of the availability of materials, research articles written and published in Myanmar comes up to 4370, according to the database in 'Enhancing quality to prepare higher education of Myanmar in 21st century' presented by Profes-

Dr Soe Win in 'Global education dialogues – The East Asia series (Vietnam)' held in December 2013. The database comprises research articles published by Department, each University and Myanmar Academy of Arts and Sciences, under Ministry of Education, dated from 2003 to 2013. From this large amount of available materials, research articles from the Journal of Myanmar Academy of Arts and Science will be selectively studied. Research articles written in Myanmar language will be deserted to be in accordance with the focus of the study.

Finally, the research has to balance feasibility and generalisation. As Mirahayuni's (2002) characterises, the present analysis is an almost wholly manual analysis, a large corpus would not be feasible. According to Silverman (1993), cited in (Mirahayuni, 2002), in qualitative research, analysis of only small numbers of texts is aimed at understanding the categories and how these are used in concrete activities. Hence, the present study is limited to 50 research articles in total; 25 from Science discipline and 25 from Arts disciplines, selected from the Journal of Myanmar Academy of Arts and Science, Vol XI, No. 1 to 10 published in 2013.

The research articles have been studied in term of their move structure analysis, using the framework of CARS model by Swales (1990). The materials used in the present study are labelled in the following way. Selected research articles will be labelled as RA; hence RA stands for Research Articles. The 50 selected research articles from science and arts disciplines will be labelled separately. Selected research articles from Science disciplines will be labelled as SRA-1 to SRA-25 and as for those from Arts disciplines, the label will be ARA-1 to 25. Research articles from Science disciplines will be studied first as they appear in earlier number of selected volume; No. 1 to No. 6, while research articles from Arts disciplines comes in No.7 to No.10. J-MAAS, Vol XI, No. 7 will be excluded from the present research as it composed of RAs in Myanmar language, but not in the target language. The list of the materials used in this research paper is presented in appendix.

According to Mirahayuni (2002), move structure analysis assumes that texts belonging to the same genre will show some uniformity across cultures, because they are the product of an international discourse community whose purpose is to achieve the same goals. However, it is also the case that different cultures may variously influence writing production strategies. Any systematic differences that occur between different texts may be due to the values and beliefs in the culture that influence

the writers in their choice of writing strategies. Accordingly, there is a well-known and proven move structure to follow. And thus, the present study analysed the move structure of the research articles as main focus.

3.2. Research Instruments

The data regarding with the genre analysis of research articles from Arts and Science disciplines have been collected in terms of three moves model, namely CARS by Swales (1990). Swales' CARS model consists of three 'Moves', with a 'Move' being defined as a semantic unit which is related to the writer's purposes (McKinlay, 1984, in Swales, 1990) cited in Mirahayuni (2002). Swales seems to consider 'move' to be a functional notion, as it is defined according to the task the units of text have to perform in the text. That is, these parts of a text carry particular functions in relation to the overall goals of the research articles. There are three obligatory moves in the Introduction section: Establishing a territory, establishing a niche and Occupying the niche. Each move is specified into 'steps'. Some steps within one move are obligatory, some optional and some are alternatives of each other. The differences in the degree of obligatoriness indicate that, while this account of English RA macro-structure recognises the typical pattern, it allows for variation within the text types.

The three moves in the Introduction section represent the strategies taken by the researchers to establish their research claims within the wider research community.

Move I includes three steps: Centrality claim (I-1), Topic generalisation (I-2) and Review of previous studies (I-3), which may occur together or alternatively. Move I-1, Centrality claim, is made to "claim interest or importance, to refer to the classic, favourite or central character of an issue, or other investigation in the area" (Swales, 1990a:144). This step is typically, although not inevitably, introduction initial. Move I-2, Making a topic generalisation, presents a more neutral, general statement than Move I-1. This move provides the readers with some orientation to well-established knowledge in the study area, rather than introducing the topic of study itself. Swales does not specify the lexicogrammatical realisations of this step, and thus its identification in the text is content-based and intuitive (Mirahayuni, 2002). Although the signals given for this step are not obvious linguistically in Swales' original model, Pennington's (2005) adapted move model is used here for the analysis. Move I-3, Reviewing items from previous research, is considered as the only obligatory step in this move, displaying

three related features: (a) specification of the previous finding, (b) attribution to the research workers and (c) a stance towards the findings themselves (Swales, 1990). These features are manifested in three integrated referencing features: integral/non-integral citations, reporting/non-reporting reference and tense choice.

Move II functions to show limitations and any gaps in understanding left by previous studies. It may take one or more of the four steps: (a) Move II-1A Counter claiming, (b) Move II-1B Indicating a gap, (c) Move II-1C Question-raising, and (d) Move II-1D Continuing a tradition. Move III consists of three steps: (a) Move III-1A Outlining purposes or Move III-1B Announcing present research, (b) Move III-2 Announcing principal findings, and (c) Move III-3 Indicating RA structure. Of these, only Move III-1 is considered obligatory.

3.3 Data Collection

The occurrences of three moves in research articles from Arts and Science disciplines have been scrutinised through the following stages. Firstly, 25 research articles from both disciplines are selected in partially random order, keeping best paper award winning paper in priority. Then the selected articles are analysed in terms of linguistic markers that signified the three moves, so as to figure out the objectives of the research.

3.4. Data Analysis

The occurrences of moves in the introduction sections of research articles are then analysed according to their occurrence percentage. The cyclic occurrences are counted separately as recurring of moves and steps is supposed to take place.

4. Research Results

In the introduction section of research articles from Arts disciplines, the researcher make the most frequent use of the two alternative steps of the obligatory Step 1. With the use of the obligatory alternatives, outlining purposes or announcing present research, the researchers occupy the niche rather than announcing principal findings, or indicating the structure of the research article.

According to the collected data, the occurrences of moves, with the manifestation of obligatory and optional steps are marked in most of the introduction sections of research articles by the

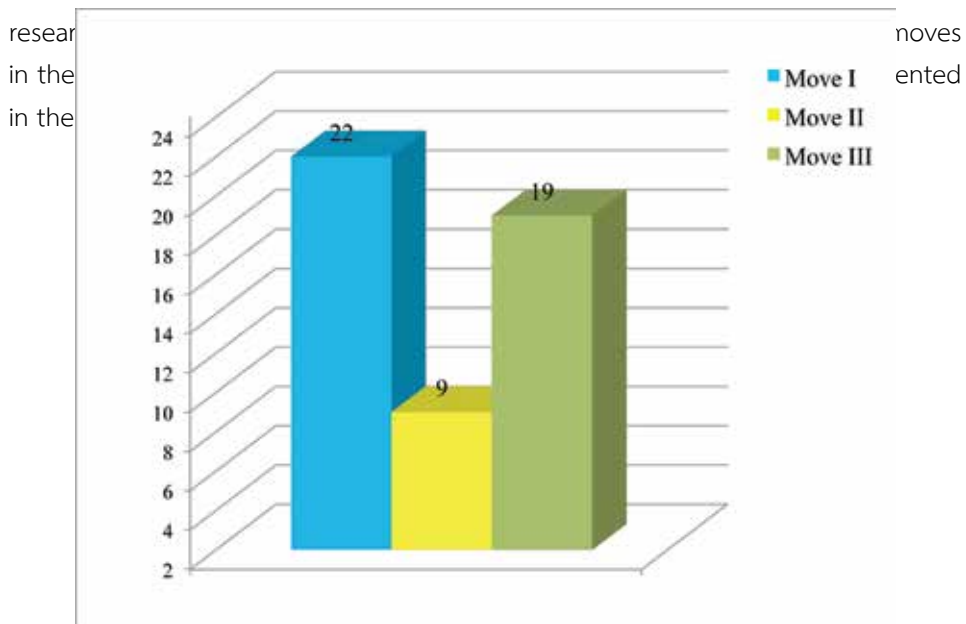


Figure (1) : Move Analysis in Science Discipline

As it can be seen in the above figure, the most frequently applied move in the introduction sections of analysed research articles from Science discipline is Move I, establishing a territory. With the application of Move I, the researcher establishes the territory of his or her study by orienting the reader to well-established knowledge. The second most frequently found move is Move III, occupying a niche. With the function of Move III, the researchers turn the niche established in Move II into the research space that justifies the present article. Nevertheless, there is no great gap between the numbers of the occurrence of Move I and Move III. When it comes to the use of Move II, it can be said that the use of Move II is fairly insignificant. The researchers from Science discipline are not likely to establish the niche by pointing to missing information from previous studies. Taking everything into account, in the introduction sections of research articles from Science discipline, the application of Move I and Move III is relatively significant whereas Move II is not.

The occurrence of all three moves in the introduction sections of research articles from Arts discipline is accessible in the succeeding figure.

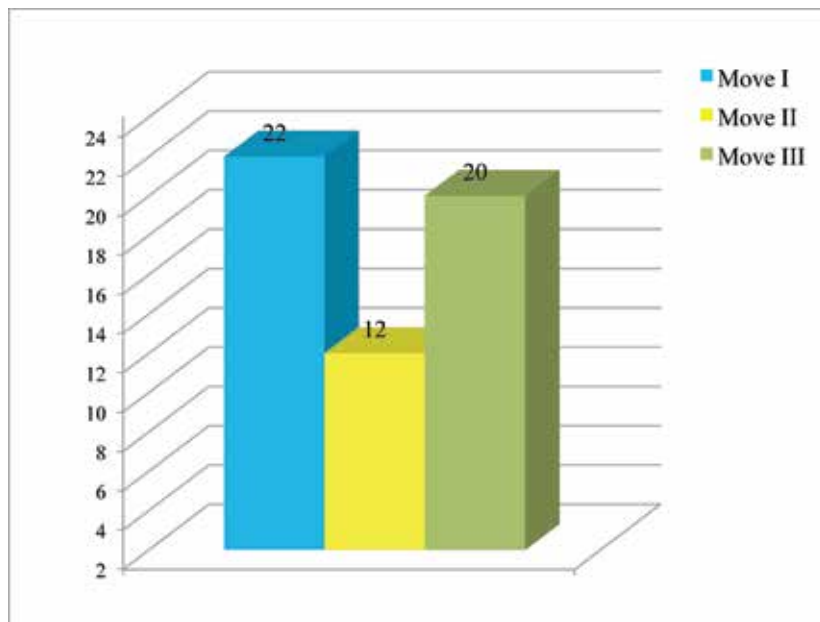


Figure (2) : Move Analysis in Arts Discipline

As it can clearly be seen in the directly above figure, in the introduction sections of analysed research articles from Arts discipline, the move that is most recurrently took place is Move I, establishing a territory. By establishing the territory, the researcher orientates the reader to well-established knowledge. The occurrence of Move III has no great different in number from the occurrence of Move I. With the comparatively significant use of Move III ; the researchers establish the research space that justifies the present research article. As in the introduction sections of research articles from Science discipline, the researchers from Arts discipline, show less significant use of Move II. Researchers tend not to point the missing points in the previous studies when they have to establish the niche in the introduction sections of their research articles. All in all, the research articles from Arts discipline too use Move I and Move III and show less significant use of Move II, as in research articles from Science discipline.

5. Discussion

The introduction sections of published research articles from Science and Arts disciplines have been analysed in the present study. The applied theoretical framework for the present study has been that of Swales(1990) genre analysis model: Creating a Research Space, hence, CARS model. Published research articles, written in English, from Science and Arts disciplines are singled out randomly from the Journal of the Myanmar Academy of Arts and Science, Vol XI, No.1 to No.10 published in 2013. The Journal of Myanmar of Myanmar Academy of Arts and Science, Vol XI, No.7 has been excluded from the analysis as it has been comprised of research articles which decoding language is not English, but Myanmar. Analysed article introductions are from the research articles randomly selected from 23 different fields of study. Research articles from Science disciplines are selected from 10 different fields of study and those from Arts disciplines are from 13 different fields of study. From ten different fields of study that comprised Science discipline, one research article from Marine Science; two research articles each from Industrial Chemistry, Mathematics, Computer Studies and Geography; three research articles each from Chemistry, Physics, Zoology and Geology; and four research articles from Botany have been studied. As for Arts discipline, one research article each from English, Library and Information Studies, Archaeology and Law; two research articles each from Foreign (Languages), Oriental Studies, International Relation, Anthropology, Philosophy and Education; three research articles each from History, Psychology and Economics; have been studied.

From the analysis of Move I - Establishing a territory, the opening move of the CARS model, in research articles form Science discipline, it has been found out that most of the research articles show trace of Move I in the introduction section. Establishing a territory is considered as an obligation of the researcher to the academic discourse community on the relevance of the reported research to issues and propositions agreed upon by the members of that community. Nonetheless, some of the researchers from Science discipline have missed the mark in acting it out. The introduction sections of some of the research articles with no trace of Move I are found out to be relatively short in length. Accordingly, it can be said that it is challenging for researcher to apply all the obligatory moves in, for instance, three-sentence long introduction section.

From the analysis of Move I, it has been found out that Step 3, reviewing items of previous research, is the most commonly applied step. Most of the researchers establish the territory with the review of items from previous research, which is the obligatory step of the introductory move. In this step, the researcher reviews one or more items reasoned to be relevant to that establishment. The researcher needs to relate what has been found or claimed with who has found it or claimed. It has been pointed out that reference to the state of previous research is the distinguishing feature between Step 3 and the previous two steps. Therefore, Step 3 is undemanding to locate when it compares to the other two steps. As for Step 1 and Step 2, the linguistic signals that mark the steps can sometimes be missing, overlapped or ambiguous to represent the application of step.

The second most commonly applied step of Move I is Step 1, centrality claim. Centrality claim is “appeal to the discourse community whereby members are asked to accept that the research about to be reported is part of a lively, significant or well-established research area”. The writer states that the topic of research is useful, relevant, important, or worth investigating since it forms part of a lively, significant or well-established research area. What is remarkable in analysis of Step 1 is that the most functioning linguistic indicator herein, by researchers from Science discipline, is the word ‘important’. Instead of alternatively using some other synonyms, the centrality of the research is claimed mostly by using the word ‘important’. From this simple use of everyday word, it can be said that the important of present research is claimed to the audience more straightforwardly. In the application of Move I, the least frequently manifested step is Step 2, making topic generalization. It consists of statements concerning the current state of knowledge, consensus, practice or descriptions of phenomena. Move I-2 is said to be regarded as an alternative to Move I-1, but with a more neutral kind of statement. Move I-2 can take a variety of forms and is thus mainly identified based on the content of the statements. As for researchers from Science discipline, they tend not to make topic generalization in their introduction sections. The manifestation is insignificant to a certain extent, with regard to the other two steps. Nevertheless, the insignificant usage gap of Step 2 is filled up by the ample use of Step 1, as these two are said to be served as alternative steps. When all is said and done, as Step 1 of Move I is operated well, the research articles introduction sections from Science discipline link the research topic to be investigated with what has been established in

the wider research area and with a more general state of knowledge. Moreover, with the function of obligatory Step 3, reviewing items of previous researches, most of the researchers from different fields of study of Science discipline make their research to be fully well-established.

In the analysis of the opening move of the CARS model - Move I, establishing a territory in research articles from Arts discipline, it has been likewise found out that most of the research articles show trace of Move I in the introduction section. This move is specified into three separate steps: claiming centrality, making topic generalisation and reviewing items of previous research. In step wise, the application of Step 1 is fairly substantial and well-distributed. Nonetheless, as for the use of Step 3, it is not fairly distributed. Although the total number of occurrence is high, it is mainly because few of the researches have relatively great number of occurrence. And as for Step 2, the number of occurrence is as a matter of fact irrelevant as in Science discipline. All in all, what is remarkable is that although the number of occurrence of step in Arts discipline is high, the occurrence is not fairly distributed. In the analysis of research articles from Arts discipline, contrasting Science discipline, the use of Step 1 is more frequent than that of Step 3. Hence, it can be said that the researchers from Arts discipline tend to establish the territory of their research by claiming its centrality. The researchers claim the centrality by linking their current research topic with what has been established in the wider research area. All in all, in the introduction sections of analysed research articles from Arts discipline, although the usage gap of Step 2 is filled up with alternative Step 1, the use of obligatory Step 3 is slightly less frequent than the optional Step 1.

When it comes to the reflection of the application of Move II, in the research articles introduction from Science discipline, it is found out to be relatively insignificant. In Move II, Establishing a niche, the researchers establish the specific topic of study by pointing to missing information from previous studies. This strategy is categorised into four alternative steps: Counter-claiming, Indicating a gap, Question-raising, or Continuing a tradition. The steps in this move are more readily identifiable as they are usually formally signalled either with vocabulary items expressing the particular step or with sentence connectors. From the analysis, it has been found that most of the research articles have zero occurrence of Move II in the introduction section. And, when its application is marked, the number of occurrence of four alternative steps is

either one or two times individually in each of the analysed research articles.

In encompassing Move II, the researchers simply use Step 1A, Step 1B and Step 1D and as for Step 1C, there is no single occurrence in all of the introduction sections of the analysed research articles. Consequently, it can be said that in establishing a niche, the researchers from Science discipline continue a tradition, from some other particular contexts, in their own, rather than counter-claiming or indicating a gap. Moreover, researchers from Science discipline never raise question in establishing the niche.

In the introduction sections of research articles from Arts discipline, the application of Move II is relatively insignificant as in Science discipline. In most of the introduction sections, there has zero occurrence of Move II. Three out of four alternative steps have been found out to be applied in the analysed research articles from Arts discipline. The number of occurrence of each step is not more than two times, except for the occurrence of Step 1B which occurs four times in one of the research articles. And there is no trace of Step 1C in the introduction sections of research articles from Arts discipline. In the application of Move II, the findings from Arts discipline show no great difference from Science discipline.

In Move III, Occupying the niche, the researchers “turn the niche established in Move II into the research space that justifies the present article”. This move consists of three steps: 1A : outlining purposes and 1B : announcing present research, Step 2 : announcing principal findings, and Step 3 : indicating the structure of the research article. The obligatory element in this move is Move III-1. In this move, the researchers reveal their solution to help fill the gap, answer the specific question or continue a research tradition that has been presented in Move 2. Concerning the presentation of Move III, all of the three steps have been found out to be applied in the introduction sections of research articles from Science discipline. In occupying the niche, it has been found out that the researchers either outline the purposes or announce present research. With the function of obligatory Step 1A, stating the main purpose or aim of the study, the writer introduces his/her solution to the problem described in Move 2. And with Step 1B, the alternative of Step 1A, the researcher describes the aims in terms of what the research sets out to ‘do’ or accomplish. On the other hand, the researchers from Science discipline almost never use Step 2. In this step, the researcher considers the results to be the most important aspect of the research and therefore

reports these as part of the introduction. The same thing is happened to be found in the application of Step 3. The researchers from Science discipline have no tendency to indicate the structure of the paper. In fact, in some of the introduction sections of research articles, the organization of the paper is found out to be mentioned, yet the researchers do not make proper use of linguistic markers that can mark the application of this step. Consequently, the occurrence of Step 3 is hardly ever seen as a result of the absence of linguistic signals.

With regard to the application of Move III in Arts discipline, the findings show remarkable resemblance to those of Science discipline. With the most frequent use of the two alternative steps of the obligatory Step 1, the researcher outlines purposes or announces present research in the introduction section, rather announce the principal findings or indicate the structure of his research article.

Taking everything into account, it can be said that the research articles from Science and Arts discipline show limited application of move structure claimed by Swales (1990). Moreover, the findings herein give light on the structure of research article introductions from Science and Arts discipline, in the context of Myanmar. Though there is no related study of research article introductions in Myanmar context so far, the findings are agreeable with some other research findings, for instance - Jogthong (2001), Akhmad (1997) cited in Mirahayuni (2002).

6. Conclusion

In the present study, 'Move Structure of Introduction Sections in Research Articles from the Journal of The Myanmar Academy of Arts and Science', the introduction sections of published research articles from Science and Arts disciplines have been analysed. The applied theoretical framework for the present study has been that of Swales (1990) genre analysis model: Creating a Research Space, hence, CARS model. Published research articles, written in English, from Science and Arts disciplines are singled out randomly from the Journal of the Myanmar Academy of Arts and Science, Vol XI, No.1 to No.10 published in 2013. The Journal of Myanmar of Myanmar Academy of Arts and Science, Vol XI, No.7 has been excluded from the analysis as it has been comprised of research articles which decoding language is not English, but Myanmar. The data to be analysed is comprised of 50 research articles, 25 each from

Science and Arts disciplines. Analysed 50 article introductions are from the research articles randomly selected from 23 different fields of study. Research articles from Science disciplines are selected from 10 different fields of study and those from Arts disciplines are from 13 different fields of study. From ten different fields of study that comprised Science discipline, one research article from Marine Science; two research articles each from Industrial Chemistry, Mathematics, Computer Studies and Geography; three research articles each from Chemistry, Physics, Zoology and Geology; and four research articles from Botany have been studied. As for Arts discipline, one research article each from English, Library and Information Studies, Archaeology and Law; two research articles each from Foreign (Languages), Oriental Studies, International Relation, Anthropology, Philosophy and Education; three research articles each from History, Psychology and Economics; have been studied.

No significant differences have been identified in the research articles across two disciplines regarding the move structure in the present study. Moreover, although it can be said that the research articles from Arts and Science disciplines follow the move structure in the introduction sections, that does not necessarily mean that the researchers make use of every obligatory step. Hence, the researchers need to entail adaptation of every single obligatory step to function the move in their research article introductions. Only then, it would be of great help in assisting researchers to achieve publication at the international level. Although there embody culturally-specific and field-specific disciplinary practices, the research articles should also meet the standard of global structure. Simply being in internationally accepted language alone is not the standardization in the international knowledge sharing platform, researchers from Myanmar context need to be furnished with all the standardization measures for global context. For that purposes in mind, the present study pictures the current frame of research article introduction sections from a particular dimension. And hence, this study by complementing the moves analysis, tries to provide some common ground features of research articles from Myanmar context and how it is supposed to organise for the global audience in international knowledge sharing. This in turn would provide for novice and second language researchers to understand and/or produce research articles successfully not only for local but also for global acceptance. Because, in order to gain a place at internationally renowned academic context, the publication of research articles have to be not only the package of innovative research findings,

but also have to be packed in internationally accepted structure.

7. Recommendations

Accordingly, the findings from the present study hope to be beneficial for novice researchers in helping them to meet the expectations of academia, and for researchers from non-English-speaking backgrounds who pursue of the understanding of discourse in academic publications. Moreover, based on the fact that novice and non-native English researchers are likely to encounter difficulties in structuring Introduction section, the findings testified here try to provide pedagogical input. Thus the present contribution is expected to aid in providing guidelines for students to practice the use of consistent and logical organizational framework claimed to be applied in the global context. Even if grammatical mistakes are said to be ironed out by a language editor, researchers himself is responsible in structuring his research for smooth sharing his message to the audience in global village.

The present research has its own limitation as it is conducted on the data set of 50 introductory sections simply. Nonetheless, it is hoped to be of fundamental importance in serving as a stepping stone to conduct similar further researches on the way researchers from Myanmar context structure their research articles, taking more data into account at the same time and prove supplementary findings to the present study. Moreover, it is expected that with the aid of more similar further studies, more contributions could be made to be of great help in pedagogical input for novice researchers and strengthen input for the researchers from different fields study from Arts and Science disciplines.

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Professional Development of Mathematics teacher through Lesson Study in Savannakhet Teacher Training College

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Abstract

Continuing Professional Development (CPD) of in-service teachers training program in Laos is one of the focuses of the government to improve a quality of classroom teaching and performance of students, so the effective teachers can be enhancing professional development in actual classroom practice. In this paper we present a case study of fourteen mathematics teachers in Savannakhet Teacher Training College (STTC) in Laos working in a Lesson Study (LS) team that prepared for improve teaching and learning mathematics. The Lesson Study process included preparing, observing, and reflecting the teaching in mathematics class. The data clearly showed that the collaborative environment throughout the Lesson Study enabled the teachers to increase their content knowledge and pedagogical knowledge in teaching mathematics, the student learning outcome also improved by the process of Lesson Study.

Keywords : Professional development, Lesson Study, Pedagogical knowledge

บทคัดย่อ

การพัฒนาวิชาชีพต่อเนื่อง (CPD) ของโปรแกรมการฝึกอบรมครูผู้สอนในประเทศลาวเป็นหนึ่งในเป้าหมายของรัฐบาลในการปรับปรุงคุณภาพการเรียนการสอนในชั้นเรียนและประสิทธิภาพของนักเรียน ดังนั้นครูผู้สอนที่มีประสิทธิภาพจะช่วยเสริมสร้างการพัฒนาวิชาชีพในทางปฏิบัติที่เกิดขึ้นจริงในชั้นเรียน วิจัยนี้นำเสนอกรณีศึกษาของครุคณิตศาสตร์ในวิทยาลัยครูสะหวันนะเขต (STTC) ในประเทศลาวที่ทำงานในทีมวิจัยบทเรียนซึ่งเตรียมความพร้อมในการปรับปรุงการสอนและการเรียนวิชาคณิตศาสตร์ กระบวนการวิจัยบทเรียนประกอบด้วยการเตรียมความพร้อม การสังเกตการณ์ และการสะท้อนให้เห็นการเรียนการสอนในชั้นเรียนวิชาคณิตศาสตร์ ข้อมูลแสดงให้เห็นอย่างชัดเจนว่าสภาพแวดล้อมการทำงานร่วมกันตลอดการวิจัยบทเรียนช่วยให้ครูเพิ่มองค์ความรู้ด้านเนื้อหาและองค์ความรู้ด้านวิธีการสอนในการสอนคณิตศาสตร์ นอกจากนี้ผลการเรียนรู้ของนักเรียนยังมีการพัฒนาขึ้นด้วยกระบวนการวิจัยบทเรียนอีกด้วย

คำสำคัญ : การพัฒนาวิชาชีพ การวิจัยบทเรียน ความรู้ด้านวิธีการสอน