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A COMPARATIVE MOVE ANALYSIS OF ABSTRACTS IN A MULTIDISCIPLINARY CONFERENCE PROCEEDINGS: HARD SCIENCES VS SOFT SCIENCES

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Abstract

Abstract has received much attention as a genre by academics worldwide. A good abstract writing manages to attract more readers to read an article and has better opportunities for indexing and citation. Previous studies show how analyses have been done on abstracts written by native and non-native speakers of English as well as rhetorical moves that take place in abstracts. However, analyses of abstracts for crossed-disciplinary articles are rarely discussed. Thus, the present study which adapts a qualitative research design intends to study move types and patterns of abstracts in two different clusters: hard sciences and soft sciences, subsequently comparing them. 30 abstracts which had been sent to a multidisciplinary conference were collected and analysed using the Five-Move Model introduced by Hyland (2000). The areas under the field of soft sciences are Business, Education and Tourism while hard sciences included Chemistry, Biology and Forestry. The results show abstracts from hard sciences skipped some moves in the model, while abstracts from soft sciences followed nearly all moves from the model. However, it is interesting to note that the Move 5: Conclusion was often overlooked in both fields while Move 3: Method had been written fairly well by authors in both fields. Although there was only a slight difference, the data showed that authors in soft sciences were more interested to highlight their Findings (Move 4: Production), while authors in hard sciences focused more on the Move 2: Purpose move. Thus, the findings are expected to help authors especially from hard sciences cluster to become more aware of the academic convention of abstract writing and abide by the norms set in the scientific community.

Keyword: genre analysis, move analysis, hard sciences, soft sciences, multidisciplinary conference

Introduction

Conferences have since been the platform for academic and non-academic researchers to disseminate current knowledge and latest research findings. Conferences also provide opportunities for novice and expert researchers to learn from each other (De Vries & Pieters, 2007). The common practice of most conferences worldwide requires researchers to submit abstracts of their research prior to the conference presentations. The abstracts are used by conference organisers to evaluate the suitability of the topic in accordance with the conference themes of fields. The selected abstracts are usually published in the conference proceedings or selected journals by the organiser.

The importance of abstracts has been highlighted by many researchers. An author often shows his or her credibility in presenting a topic in the abstract since it is the first section that readers look for before reading the entire article or proceeding (Duan and Wei, 2021). Since writing abstracts has been widely practised and accepted by all disciplines, abstracts have been considered as a recognisable genre (Bhatia, 1993). In genre chain of conference publication (Swales, 2004) abstracts are often placed at the early stage after 'Calls for papers' (Raisanen, 2002). The genre chain of conference publication is shown in Figure 1.

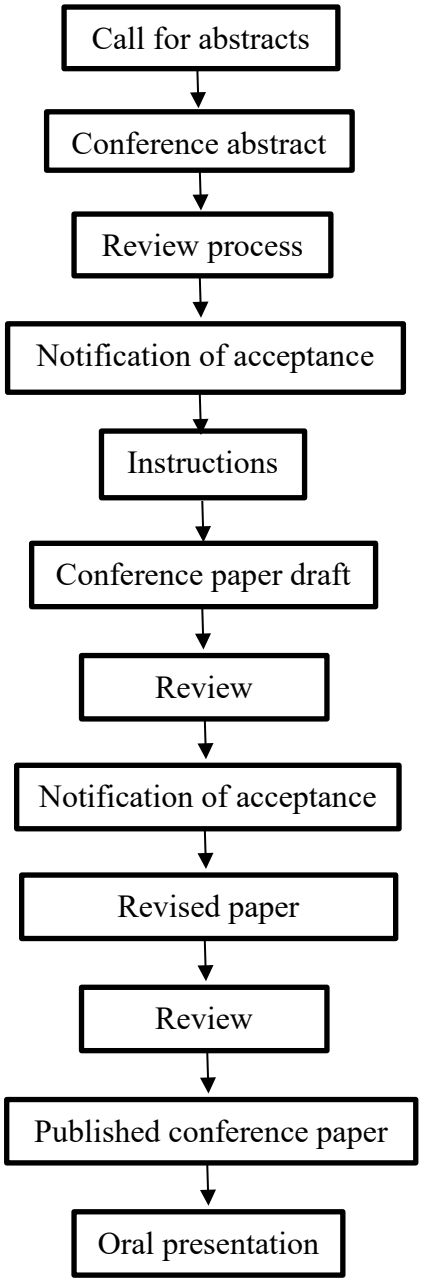

Figure 1. Genre chain of a conference publication

Genre studies put much emphasis on the communicative purposes (Swales, 1990). Therefore, a good abstract should fulfil communicative purposes that have been highlighted by the professional or scientific community. This is to ensure the quality of the abstract and later gets published in the conference proceedings or selected journals. Typically, an abstract

comprises introduction, methodology, results, and conclusion, which are usually written in a single condensed paragraph. Readers can identify the abstract at the beginning of an article since it gives an overview of the entire study.

Move analysis of abstracts has been studied for years since the introduction of move analysis by Swales (1981). Salager-Meyer (1991, 1992) studied medical English abstracts while Busch-Lauer (1995) analysed medical abstracts written in German. Other studies include abstracts in different fields such as applied linguistics (Dos Santos, 1996), psychology (Hartley & Benjamin, 1998), engineering (Maswana & Kanamaru, 2015) and information science (Montesi & Urdiciain, 2005). However, there is scant attention given to comparative move analysis of abstract proceedings of a multidisciplinary conference that involves two different clusters: hard sciences (HS) and soft sciences (SS). Hard science refers to studies in the field of science and technology (ST) such as Applied Sciences, Engineering and Mathematics while soft science comprises studies in the field of social science such as Business, Education, Language and Tourism. Even though there were attempts to compare moves in cross-disciplinary abstracts, they were more concerned about research articles published in different journals. For example, research article abstracts in mechanical Engineering, Physics, Biology, Sociology, Marketing, and Applied Linguistics (Omidian, 2018), Applied Linguistic, Applied Economics and Mechanical Engineering (Saboori & Hashemi, 2013) Applied Linguistics and Mathematics (Behnam & Golpour, 2014) as well as Social and Behavioural Science (Khany & Malmir, 2019).

In a multidisciplinary conference, organisers provide a template and guidelines for abstract writing. However, not all authors are aware of this and proceed with their own style of writing. Therefore, it is interesting to see the nature of similarities or differences in move patterns of abstracts and whether they are compliant to the commonly written abstracts in the academic community. This is because, even though conference organisers require authors to submit abstracts using the given template, some abstracts are accepted by the conferences despite not fulfilling the requirements. To shed lights on this issue, the present study intends to answer the following questions:

1. What are the obligatory and optional moves of abstracts in both clusters?
2. What are the move patterns of abstracts in both clusters?

Literature review

Move Analysis

Genre analysis has become a great interest to linguistic researchers. It has become a significant approach in analysing texts. Bhatia (1997) stated that genre analysis is the "study of situated linguistic behaviour in institutionalized academic or professional settings" (p.181). It is often used by researchers to study the structure of text or genre, and to some extent it justifies the genre structure. Fundamentally, genre analysis comprises three traditions, even though new schools of thought have since emerged. They are the North American New Rhetoric Studies, Australian Systemic Functional Linguistics (SFL) and the British Tradition of English for Specific Purposes (ESP). The most remarkable and widely used is ESP since it aims to provide appropriate language resources and skills to language learners in obtaining access to the language demands they encounter in studies or professions (Swales, 1990; Bhatia, 1993). Another factor is ESP emphasises on pedagogical implications for the practitioners or ESL learners (Brett, 1994).

The ESP tradition was introduced by Swales (1990) who claimed that genre is "a class of communicative events, characterised both by their communicative purposes and patterns of

structure, style, content and intended audience" (p.58). Swales (1990) highlighted the necessity to analyse the communicative purposes and the language features of genre in context. Thus, this tradition is inclined to study discourse units of a genre or also known as moves. Swales also believed that discourse community shapes the genre and helps to structure it. Academic genres such as abstracts for instance, are written by academicians and therefore have the ability to influence the way they are constructed.

Move analysis hitherto has been utilised in all types of genres including academic (research articles, abstracts), professional (annual reports, medical reports, legal documents) and homely (obituary, wedding invitation, self-assembly instructions). Nevertheless, academic genres have been well-received by genre analysts. This could be due to the fact that move analysis first emerged to help ESL learners in their communicative encounter (Kanoksilapatham, 2005).

Rhetorical structures of abstracts

Abstracts consist of condensed information that gives an overview of the entire research articles, proceedings or even theses. Today, abstracts are also used in documents like patent information (Alzarieni et al., 2018). This occurs since abstracts help readers to understand the gist of long texts (Bhatia, 1993). Thus, having abstracts at the beginning of texts is intended to tease readers into reading more of the texts. In recent practices, abstracts are also useful for editors of journal articles and conference organisers. This is because the former gets to choose the right contribution according to the specific fields or themes of the journals while the latter uses abstracts to accept or reject the papers.

Rhetorical moves of abstracts have been analysed excessively by previous scholars (Bhatia, 1993; Cross & Oppenheim, 2006; Fartousi & Dumanig, 2012; Halleck & Connor, 2006; Hartley, 2004; Hyland, 2000; Santos, 1996; Swales, 1981, 1990; Swales & Feak, 2009; Yokhontova, 2002). However, due to dynamism of genre (Devitt, 2004) different studies have shown different production of the moves that suit different genres or areas of study. The models introduced by Swales (1981, 1990) and Bhatia (1993) for example, are applicable to most academic and professional genres while Santos (1996) and Yokonthova (2002) presented models that suit with abstracts in Applied Linguistics. Hyland (2000) introduced a model based on his research on abstracts in Physics, Engineering, Humanities/Social science and Biology. Despite the differences, all models have based their moves on IMRD structure (Swales, 1990).

Methods

The corpus in the present study comprised 30 abstracts, 15 of which were from hard sciences while 15 more were from soft sciences. All abstracts had been submitted to a multidisciplinary conference. The conference which is held biannually welcomes research presentations from all fields. The present study adopts a qualitative method and involves textual analysis of abstracts. It uses a rhetorical structure model of abstracts by Hyland (2000) as the analytical framework. The summary of the framework is presented in Table 1.

Table 1 Hyland's (2000) Rhetorical Structure of Abstracts

Code	Moves	Function
Move 1	Introduction	Establishes context of the paper and motivates the research or discussion.
Move 2	Purpose	Indicates purpose, thesis or hypothesis, outlines the intention behind the paper.
Move 3	Method	Provides information on design, procedures, assumptions, approach, data and other relevant information.
Move 4	Production (Results)	States main findings or results, the argument, or what was accomplished.
Move 5	Discussion	Interprets or extends results beyond scope of paper, draws inferences, points to applications or wider implications

Prior to analysis, the abstracts were organised and labelled. They were categorised as HS for Hard Sciences and SS for Soft Sciences. The abstracts were then labelled according to the category followed by a number. For instance, HS1 refers to the first abstract in the hard sciences while SS1 refers to the first abstract in the soft sciences cluster. This was done to achieve a systematic analysis and reporting of the findings.

To answer the first research question, the moves were first identified by the researchers. After the moves had been coded, a simple statistical analysis calculation was utilised to determine the move types. The present study used the cut-off percentage by Kanoksilapatham (2005) in which a move is considered obligatory if it appears at least 60% in the corpus and optional if it appears less than 60%. To answer the second research question, the sequence of the moves as they appeared in the abstracts were tabulated and compared. This was done to ease the process of calculating the move patterns.

Results and Discussion

The present study seeks to answer two questions in regard to the move patterns and move types of abstracts submitted to a multidisciplinary conference. To answer the first research question, the moves were first coded before identifying the move types. Table 2 presents the findings of the analysis.

Table 2 Move Types of Abstracts in Hard Sciences and Soft Sciences

	Hard Sciences		Soft Sciences	
Moves	**Percentage (Total)**	**Move Type**	**Percentage (Total)**	**Move Type**
1: Introduction	67% (10)	Obligatory	73% (11)	Obligatory
2: Purpose	73% (11)	Obligatory	87% (13)	Obligatory
3: Method	87% (13)	Obligatory	100% (15)	Obligatory
4: Product	67% (10)	Obligatory	93% (14)	Obligatory
5: Conclusion	27% (4)	Optional	47% (7)	Optional

The table above shows that the abstracts comprised more obligatory than optional moves. However, it should be noted that more moves appeared in Soft Sciences abstracts. The move that has been the focus in the corpus is Move 3: Method. This is in line with Santos (1996) who found method as an important aspect of abstracts. This may be the case as the Method can determine the right research design as well as the area of the study. The least frequent move is Move 5: Conclusion. Similar observation was noted by Ren and Li (2011) who found Conclusion to be left out in most abstracts. In the present study, Conclusions may have been left out by authors as the conference had allowed on-going research to be presented. Thus, no conclusion can be made from the findings.

In answering the second research question, all move patterns were tabulated as they appeared in the abstracts. The comparison of move patterns between the two clusters is presented in Table 3 below.

Table 3 Move Patterns of Abstracts in Hard Sciences and Soft Sciences

Hard Sciences		Soft Sciences	
Pattern	**Frequency**	**Pattern**	**Frequency**
I-P-M-Pr	6	I-P-M-Pr-C	4
I-P-C	2	I-P-M-Pr	4
M-Pr	2	P-M-Pr	3
M	2	I-M-Pr-C	2
I-P-M-C	1	I-M	1
I-P-M-Pr-C	1	P-M-Pr-C	1
P-M-Pr	1		

**I=Introduction, P=Purpose, M=Method, Pr=Product (Results), C=Conclusion*

As can be seen, only five abstracts or 17% of the abstracts followed the actual move sequence which is I-P-M-Pr-C. This is not surprising as Hyland (2000) also found less than 5% of the abstracts were written according to the sequence. Abstracts in soft sciences were inclined to adhere to all moves. An example of the abstract (SS4) is shown below:

(Move 1) In Malaysia, English is taught as a compulsory second language in all public schools. However, when students move from schools to tertiary institutions where the medium of instruction is English, there is bound to be a feeling of anxiety. (Move 2) Thus, this study was conducted to investigate the anxiety levels of tertiary students in an institution where English is the medium of instruction. (Move 3) This descriptive study involved 376 students from three branch campuses and data were collected using a mixed-method research design through the use of a questionnaire and semi-structured interviews. (Move 4) The findings of the study revealed that a majority of the students indicated that they possessed a moderate level of anxiety. Nonetheless, they took little initiative to work on their limitations and a majority indicated that they were not autonomous language learners. (Move 5) The findings imply that tertiary language learners must be helped to equip themselves with skills, so that they can learn on their own.

The move patterns found in abstracts of soft sciences mostly had four moves and only 1 abstract was found to be written using two moves. This is very much different from the abstracts in hard sciences since more move patterns were found in this cluster. Additionally, two abstracts were found to only consist of one move which is Move 3: Method. An example of the abstract (HS5) is presented below:

Samples of Rafflesia cantleyi and bark of host from Tetrastigma tuberculatum were collected from selected locations in Royal Belum, Perak, Malaysia. Both parts were extracted successively by using hexane, dichloromethane and methanol. The highest percent of extraction was displayed by methanolic extract for both Rafflesia cantleyi and Tetrastigma tuberculatum, 4.04 % and 3.2 % respectively. An antioxidant activity test was carried out using ferric thiocyanate (FTC) and the result showed that the percentage of inhibition and antioxidant activity of methanolic extract of Tetrastigma tuberculatum was 36.65 %, which is higher as compared to methanolic extract of Rafflesia cantleyi, 30.38 %. Meanwhile Folin-Ciocalteu test was used for the determination of total phenolic content and the methanolic extract of Tetrastigma tuberculatum exhibits the highest phenolic content (59.5 mg catechin/g DW) compared to other solvents used. For phenolic compound identification, catechin was used as the reference standard and the samples were analyzed by using high performance liquid chromatography (HPLC).

Conclusion

The present study compared the move types and move patterns of abstracts submitted to a multidisciplinary conference. The abstracts were divided into two clusters: hard sciences and soft sciences. The analysis was guided by a model proposed by Hyland (2000). Some similarities were noted in the findings. Firstly, Move 5: Conclusion move was often overlooked in both fields. This may be due to the practice of conference committee which had accepted abstracts of on-going research. Secondly, Move 3: Method was found to be the focus in both clusters. However, the findings showed that abstracts in the hard sciences often skipped some moves while abstracts in soft sciences followed most of the moves. Further, soft sciences abstracts put emphasis on Move 4: Product which informs readers the results of the study.

Abstracts in hard sciences however, prioritised Move 2: Purpose that tells readers the aims of the study.

The findings from the present study are intended to raise awareness among authors and researchers especially from the hard sciences cluster on the implications of complying to the academic conventions of abstract writing. Application of effective practices in abstract writing increases opportunities for paper acceptance and publication in journals and conference proceedings, as well as citations in future studies. Hence, it would greatly benefit academic researchers and authors to carefully observe and follow abstract templates and guidelines provided by organizing committees of conferences.

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Conflict of interests

The Authors declare that there is no conflict of interest.

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