

## An Innovative Strategy to Improve ESP Writing: the Application of Genre Analysis to Study Medical Research Articles

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**Abstract:** The paper uses genre analysis to study the structural features of medical research articles (RAs) written in English. Based on the research of Nwogu, the data, which were randomly chosen from the international medical journals, were analyzed statistically. The results indicate present day medical writers attach great importance to the internal structure of the RAs and the research background information and statistical analysis procedure have been the obligatory moves in research articles. Furthermore, the findings are significant for medical writers to improve ESP writing skills and issue paper in the international journals successfully.

**Keywords:** Innovative; Strategy; Writing; Genre analysis; Research article

### 1 Introduction

The recent two decades witness the accelerating development of biomedical researches. Research articles have been used frequently to convey and share the latest scientific research achievements in biomedical fields. Many Chinese researchers attach great importance to issue paper successfully in international journals instead of national journals in order to strengthen international communication and cooperation. However, sometimes they fail because of the dull contents and improper linguistic and structural organization of the paper. Based on Nwogu's moves and discourse functions research in medical RAs<sup>[1]</sup>, the present study will explore the internal structural features of medical research articles issued in international medical journals, which is helpful for present day writers to improve ESP writing skills and issue paper in the international journals successfully.

The first research article originated from letters between scientists for information exchange was first appearing in the first English-medium scientific journal: The Philosophical Transactions of the Royal Society of London in 1665. Swales calls it as a "prestigious genre"<sup>[2]</sup>. Most experimental research articles have the traditional IMRD format, including "introduction, methods, results and discussion" four sections. What's more, internal structures of the information in each section have been well presented. Only understanding the internal structures of the research paper, the whole organization can be perceived clearly and logically. Swales and Nwogu are two important person who use genre analysis to study the internal structure of the research articles.

**Table 1 Moves and Discourse Functions in Medical RAs Identified by Nwogu**

Move	Discourse function
1. Presenting background information	Introduction section
2. Reviewing related research	
3. Presenting new research	
4. Describing data collection procedure	Methods section
5. Describing experimental procedure	
6. Describing data-analysis procedure	
7. Indicating consistent observations	Results section
8. Indicating non-consistent observations	
9. Highlighting overall research outcome	Discussion section
10. Explaining specific research outcomes	
11. Stating research conclusions	

The concept of genre, as defined by Swales, indicates that the textural patterns are subject to change and evolution. Swales proposed a three-move schema for article introductions, namely establishing a territory, establishing a niche, occupying the niche. Furthermore, each move can be divided into several steps<sup>[3]</sup>. Swales' model has been applied extensively and Nwogu employed Swales' CARS model and examined the whole body of 15 medical RAs from five authoritative medical journals. He developed a schema of 11 moves (Table 1), eight of which (Moves 2, 3, 4, 5, 7, 9, 10 and 11) he described as "normally required" (also known as "obligatory") and three of which (Moves 1, 6 and 8) as "optional".

The “obligatory” moves constitute the limits of a genre and give a pattern of communication its identity, without which a genre would lose its integrity, while the “optional” moves are available choices authors or speakers may choose to use. Each move embodies “constituent elements” or “sub-moves” and is characterized by some distinct linguistic features<sup>[1]</sup>.

## 2 Data and Methodology

The paper uses a quantitative study to explore the move distribution of medical research articles. All the data are experimental research articles chosen randomly from authoritative international medical journals, namely The Lancet, The England journal of medicine. The articles follow the traditional IMRD format and the authors are English natives. 20 research articles have been studied, among which ten is from The Lancet (2010-2011; Vol.375-377) and ten from The English journal of medicine (2010-2011;Vol.362-364). Based on the previous studies of Nwogu, the data have been analyzed statistically.

## 3 Results

Table 2 is a vivid statistic description of the move distribution of the 20 research articles issued in the international medical journals. The result indicate ten of which (Moves 1,2, 3, 4, 5, 6,7, 9, 10 , 11) are “obligatory” and only Move 8 is “optional”. Compared to the findings of Nwogu, move 1 and move 6 have been changed from “optional” to “obligatory” moves. Move 8 is still the optional move because the use of it in data 1 is 40% and in data 2 is 50%, which is less than 50% totally. And the use of move 9 in data 1 and data 2 is 60% and 70% respectively.

**Table 2 Move Distribution of Medical Research Articles**

Move	Data 1 (The lancet )		Data2 (The new England medical journal )		Total Percentage
	Frequency	Percentage	Frequency	Percentage	
Move 1	10	100%	10	100%	100%
Move 2	10	100%	10	100%	100%
Move 3	10	100%	10	100%	100%
Move 4	10	100%	10	100%	100%
Move 5	10	100%	9	90%	95%
Move 6	10	100%	9	90%	95%
Move 7	10	100%	10	100%	100%
Move 8	4	40%	5	50%	45%
Move 9	6	60%	7	70%	65%
Move 10	10	100%	10	100%	100%
Move 11	10	100%	10	100%	100%

## 4 Discussion

### 4.1 Move 1: presenting background information

According to Nwogu, Move 1 provides background information, explaining the topic of discourse either by presenting knowledge regarded as having been true for a long period of time or by highlighting the main research problems, or both. Move 1 is changed from “optional” to “obligatory” clearly shows that today’s medical writers tend to provide more background information for the editors as well as the readers. The “obligatory” use of this move can enhances the researchers’ credibility by indicating that the reported research is based on a thorough knowledge of the subject under study, making their RAs more convincing and persuasive .

The information contained in move 1 can be anecdotal and didactive, presenting sequential account of events. Moreover, the distinct linguistic features of move 1 are the predominant use of present tense verb forms and the use of locatives and temporal adverbials as sentence elements. For example:

Despite current treatments, rates of hospital admissions for heart failure have improved little during the past three decades. In the USA, between 1996 and 2006, hospital discharges for heart failure rose from 877 000 to 1 106 000.2 Among beneficiaries of Medicare, 27% of discharged patients with heart failure were readmitted to hospital within 30 days.

### 4.2 Move 6: describing data-analysis procedure

Move 6 describing data-analysis procedures, occurs in the research reports involving statistical or

quantitative approaches to the analysis of data. It is from optional to obligatory move. Furthermore, the present medical writers use a more detailed description of the data-analysis procedures, such as the length of the part, using more flow charts.

The change of this move from “optional” to “obligatory” indicates that present-day medical RA writers are more aware of the importance of describing data-analysis procedures in reporting their research. They pay more attention to approaches and techniques to attract the interest of professional readers and to suggest that the methods employed are appropriate for the research design or are widely accepted. Moreover, the change to a more elaborate presentation of the data-analysis procedures may serve to strengthen the dependability, accuracy and aptness of the findings to be reported subsequently in the Results section, to stifle potential criticisms, to avoid expected challenges to their research designs and to ward off possible doubts about both the results and their related interpretations<sup>[4]</sup>. The present day medical writers use more detailed description of the data-analysis procedure can be related to the growing complexity of the methods and the newly developed statistics tools used in biomedical research. The distinct linguistic features of move 6 are the predominant use of past tense verb forms and passive voice. Moreover, Move 6 is characterized by the use of defining terminologies, such as define, classify. For example:

The two primary safety endpoints were device-related or system-related complications (DSRC) defined as an adverse event that was definitely or possibly related to the wireless pressure sensor or external electronics, and was treated with invasive means other than intramuscular administration of drugs or a right-heart catheterisation; and pressure-sensor failure defined as an inability to obtain readings.

#### **4.3 Move 8: indicating non-consistent observations**

Move 8 usually presents non-consistent or negative results which do not conform to the expected outcomes. Nwogu defined Move 8 as a highly “flexible” move and he ascribed the low level occurrence of this move to the fact that research articles did not always reflect all results in the research, but only those which the researchers considered important and necessary for their purposes. However, the lower frequency of this move in the data strongly suggests that present day medical RA writers tend to believe that reporting only positive consistent results may help to have their papers accepted. Therefore, they avoid using Move 8. The distinct linguistic features of move 8 are the use of negative verb phrases and negative qualifiers. For example:

Although more favorable results for HFOV were noted in smaller than in larger trials, the results of the meta-analyses did not change significantly when small trials were excluded. Furthermore, results did not differ when the HIFI trial<sup>9</sup> was included or excluded.

#### **4.4 Move 9: highlighting overall research outcome**

Move 9, a short move usually with one complex sentence presenting the overall research result, is to confirm or refute the attainment of the main research objective. The lower frequency of occurrence of Move 9 in data 1 and data 2 may be explained by the fact that present-day medical RA writers tend to adopt a more direct approach to presenting their research results. Instead of highlighting overall research outcome, they prefer to begin their discussion by directly explaining specific outcomes. The infrequent or rare use of Move 9 may also indicate that present-day medical writers may prefer to use induction rather than deduction to develop their discussion. By applying the inductive method, writers may first state the specific findings and then derive some principles from these particular findings (inducing the overall outcome), thus unfolding their discussion in a way they might think more logical and convincing<sup>[4]</sup>. A distinct linguistic feature of move 9 is the predominant use of present tense verb forms. Move 9 is also characterized by the use of words like suggest, offer, etc. For example:

Our results therefore suggest that rescue beclomethasone can lower the risk of exacerbations and treatment failures, but to a lesser degree than does daily beclomethasone.

## **5 Conclusion**

The paper uses genre analysis to study the structural features of the research articles issued in two international medical journals. The findings indicate the internal structure of the research articles are closely associated, which contribute to the integrated organization of the whole passage. Furthermore, background information and data analysis procedure, which are changed from “optional” to “obligatory”, are presented scientifically and accurately compared to the past. Generally speaking, the structural and linguistic format of English medical research articles are arranged in a regular and systematic order. Therefore, in the future, the medical writers should not only consider the innovation and practicability of

the research, but also pay more attention to the structural and linguistic features of the articles, which will help them improve writing skills and issue paper successfully in international medical journals.

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