

## RHETORICAL STRUCTURE OF BIO-PHYSIOLOGY OF SPORTS RESEARCH ARTICLES

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### Abstract

Sports research articles present a challenge to researchers due to its evasive nature of classification. They belong to multiple scientific fields and disciplines and tend to express characteristics of both humanistic and hard core sciences. So by analyzing the written patterns and structures of sports scientific articles we are hoping to determine a universal pattern of writing in content curricula more specifically in the area of sports and sports related sciences.

### Introduction

Sports research articles present a challenge to researchers due to its evasive nature of classification. They belong to multiple scientific fields and disciplines and tend to express characteristics of both humanistic and hard core sciences. So by analyzing the written patterns and structures of sports scientific articles we are hoping to determine a universal pattern of writing in content curricula more specifically in the area of sports and sports related sciences.

Therefore we opted for the corpus of the *Bio - psychology of sport* texts (mostly based on biochemistry). Introductory anatomy and physiology courses are obligatory gaining most credits at the Faculty of Sport and Physical Education. To ensure that the results obtained from the move analysis would be generalizable to the target discourse, the top five journals in biochemistry and bio-physiology were selected. Based on the impact factor reported in the five journals in biochemistry and bio-physiology published in the United States in the year 2000 were Cell (C), Molecular Cell (MC), Molecular and Cellular Biology (MCB), Journal of Biological Chemistry (JBC), and Molecular Biology of the Cell (MBC). Twelve articles were randomly selected from each journal (e.g. C1-C12, MC1-Mc12, etc.), yielding a corpus of 60 biochemistry and bio-physiology research articles of approximately 320 000 words.

*Sport and sport related texts.* These are abbreviated as *TB1 and TB2* (Textbook 1 and Textbook 2). *TB1* - Barrie Houlihan, Dying to win- Doping in sport and the development of anti-doping policy, Council of Europe Publishing, 2002, UK Presidency of the EU, Report by Jose Lois Arnaut, 2006; Independent Sport Review, James G. Hay, The Biomechanics of Sports Techniques, 2005, Prentice Hall, Inc. *TB2* - Stephan Wassong Pierre de Coubertin's American Studies and Their Importance for the Analysis of His Early Educational Campaign. English translation by Neil King 2004 (Originally published as *Pierre de Coubertins US-amerikanische Studien und ihre Bedeutung für die Analyse seiner frühen Erziehungskampagne* © ERGON Verlag, Würzburg, Germany 2002)

### *The introduction section*

The function of Introductions is to contextualize a research study being presented in the relevant literature, claim its novelty, and present main features of the study (Swales, 1990). Based on the cut-off of a 60% occurrence rate, all moves identified in Introductions of biochemistry and sports texts are conventional.

*Move 1:* Announcing the importance of the field asserts the importance of the topic of study. Congruent with Swales' framework, Move 1 in this corpus is realized by three variations.

Step 1: Claiming the centrality of the topic assures that the article developed on the topic is worth investigating and the field is well established.

Step 2: Making topic generalizations gives overviews about the subject of the study.

Step 3: Reviewing previous research reports previous research deemed to be relevant to the topic being discussed.

*Move 2:* Preparing for the present study draws scientists' attention to weakness in the existing literature and asserts that a particular research question requires an answer.

Unlike Move 1, which is always present, Move 2 was recognized in 40 Introductions or 66.66% of the corpus. The data show that Move 2 has two variations: Step 1: Indicating a gap and Step 2: Raising a question. The realization of Move 2, Steps 1 and 2 is illustrated in the following examples:

Step 1: Indicating a gap

Step 2: Raising a question

*Move 3:* Introducing the present study consists of three steps in this biochemistry corpus.

Step 1: Stating purpose(s) is characterized by a statement of purpose(s) of the study or by an explicitly stated research question.

Step 2: Describing procedures focuses on the main features of the study being reported, and

Step 3: Presenting findings announces the principal findings of the study.

#### **The methods section**

The Methods section generally describes procedures used in the study being reported. Four moves are identified in the biochemistry corpus; two moves are conventional and the other two are optional.

*Move 4:* Describing materials covers a wide variety of materials used in biochemistry ranging from natural substances, human/animal organs or tissues, to chemicals (e.g., cell lines, antibodies, plasmids, enzymes, nucleotides, microsomes, membranes, serum, proteins, medium, strains, genes, transposons, DNAs). Move 4 can be realized as Step 1: Listing materials explicitly itemizing materials or substances used in the study, Step 2: Detailing the source of the materials identifying how these items are obtained, such as, by purchase, as a gift, etc., and Step 3: Providing the background of the materials including the description, properties, or characteristics of the materials.

Step 1: Listing materials

Step 2: Detailing the source of the materials

Step 3: Providing the background of the materials

*Move 5:* *Describing experimental procedures* indicates that biochemistry as a discipline is well established and its procedures, methods, and techniques are usually protocolized. This move has three variations or steps.

Step 1: Documenting established procedures recounts an experimental process that is already established by previous researchers. As a result of the standardization of experimental procedure, simple reference to the specific name of the method or procedure used to conduct research is adequate. Occasionally, certain procedures are unique or unorthodox for a particular study.

Step 2: Detailing procedures is used to provide detailed description of the procedures to enable future research replication. Move 5 can also be realized by

Step 3: Providing the background of the procedures, providing justification for the choice of technique or procedure, and comments or observations made during the experiment (Step 3).

*Move 6:* *Detailing equipment* provides detailed information regarding the setting of the apparatus used for a particular task in an experiment, the information crucial for future research replication. Commonly used apparatuses in biochemistry include microscopes, cameras, spectrophotometers, etc. Only six of 60 research articles or 10% of the corpus contained this move.

*Move 7:* *Describing statistical procedures* is used in only eight of 60 research articles or 13.33% of the corpus.

#### **The results section**

The Results section is generally perceived to describe the findings in an ostensibly objective manner. However, as will be shown later, the Results sections of biochemistry research articles investigated in this study do not seem to conform to such typical nomenclature. The four moves comprising the Results section of this corpus are conventional.

*Move 8:* Stating procedures explains why and how the data of the study have been produced. This move occurs frequently in 95% of the corpus and can be realized by various steps.

Step 1: Describing aims and purposes states aim(s) or purpose(s) of the study.

Step 2: Stating research questions explicitly states research questions.

Step 3: Making hypotheses presents hypothetical statements.

Step 4 Listing procedures or methodological techniques details the procedures methodological techniques employed in the data production.

*Move 9: Justifying procedures or methodology* provides the rationale for the scientists' decision to use particular experimental methods, procedures, or techniques. This move can be expressed by

Step 1: Citing established knowledge of the procedure and

Step 2: Referring to previous research. Both steps either cite the established findings or refer to the findings of the previous research that have an impact on the choice of procedures.

*Move 10: Stating results highlights the results obtained from the study.* Move 10 can be realized by two steps:

Step 1: Substantiating results and

Step 2: Invalidating results.

Step 1 indicates the validity of the finding; the scientists are making an appeal to the scientific community that their results should be a part of the consensual knowledge of the field. Step 2 highlights a difference between the result of the current study and that of previous studies, suggesting to the scientific community that the scientists are contributing something novel that might be worth further investigation.

*Move 11: Stating comments on the results* presents the scientists' subjective comments, which are not absolutely established by the data; it occurs in 91% of the articles. Move 11 is realized variously as

Step 1: Explaining the results,

Step 2: Making generalizations or interpretations of the results,

Step 3: Evaluating the current findings with those from previous studies or with regard to the hypotheses,

Step 4: Stating limitations, and

Step 5: Summarizing.

### **The discussion section**

The Discussion section contextualizes the reported study and relates it to previous work in the field, reflecting a sense of membership in the larger scientific community. Four moves are identified in the Discussion section. The first three moves are conventional, whereas the last one is optional.

*Move 12: Contextualizing the study* occurs in 90% of the corpus, providing a detailed description of the study.

*Move 12* is realized by two steps.

Step 1: Describing established knowledge situates the study being reported in the interest of the discourse community.

Step 2: Presenting generalizations, claims, deductions, or research gaps allows the scientists to go beyond the results and place their work under the scrutiny of the discourse community.

*Move 13: Consolidating results* conventionally highlights the strengths of the study and defends their research successes. This move is realized as one step or a combination of steps:

Step 1: Restating methodology,

Step 2: Stating selected findings,

Step 3: Referring to previous literature,

Step 4: Explaining differences in findings,

Step 5: Making overt claims or generalizations, and

Step 6: Exemplifying.

### **Conclusions**

These steps and moves were found congruent with the moves proposed by Swales for other scientific fields but there are some specific features which are characteristic just for sports texts whether they belong to sports literature or sports textbooks and reference literature.

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## **A COMPARATIVE STUDY OF THE ROMANIAN ARTISTIC GYMNASTICS RESULTS DURING THE LAST WORLD CHAMPIONSHIPS**

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### **Abstract**

The aim of this paper was to conduct a comparative study on the evolution of the high performance results achieved by the Romanian artistic gymnastics male and female teams, during the last two editions of the World Championships, taking into consideration that this would also identify their preparation stage for the London Olympic Games in 2012.

I started this research with a general view of the Romanian gymnasts' participation in World Championships along the years, in order to better identify their progress.

By doing this comparison between our teams' participation at the two international competitions, we can see that Romanian gymnastics passes through a period of moderate performances, as the boys are concerned, but true especially for the girls, due to generation changes in the new national junior teams.

### **Introduction**

The Romanian school of artistic gymnastics represents a landmark for the great performance that brought us many satisfactions throughout time. (Bibire M, Dobrescu, T., 2008, p. 7)