A Comparative Analysis of the Discussion Section of Business and Engineering Texts: A Preliminary Study

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Abstract

The objectives of this paper are to see and to compare the macro features of discussion section of research texts in business and engineering texts. Swales' (1990) concept is used as the framework. The data are collected through library study and analyzed qualitatively. In conclusion, firstly, business text can averagely fulfill more macro features which are suggested by Swales (1990). The first business text has six features while the second text has five features. On the other hand, the engineering texts have fewer features. The first text has six features while the second text only consists of three features. Secondly, all the macro features are manifested in certain ways.

Key Words*: business and engineering text, Swales, written discourse*

Introduction

The objectives of this research are to see and to compare the macro features of discussion section of research texts in business and engineering texts. At the moment, when we talk about writing in English, many difficulties emerge, especially among those whose L1 is not English. Gaining the ability to write naturally and accurately, following the winds of English writing senses, is not an easy mission for a scholar predominantly. The main problem is the loose track of pattern while doing the writing process and lack of mastery of genre of writing. In short, a mastery of genre of written discourse is necessarily salient in order to result qualified and standardized output of writing. This has been becoming an issue in the area of written discourse studies for years.

A number of researches have been done, especially in the area of English as Specific Purposes (ESP). In the ESP tradition, genres are often defined as structured-communicative events engaged in by specific discourse community whose members share broad communicative purposes (Swales 1990). The most influential ESP genre analysis discussion has been done by Swales (1981, 1990). Bhatia (1993) provides examples of materials to familiarize students with the promotional genre of sales and job application letters. Flowerdew (1993) proposes various exercise types to introduce students enrolled on a degree program in English for Professional Communication to the process of acquiring new genres. Other practitioners have either used Swales's CARS ('creating a research space') model, or a slight adaptation of it, to disambiguate the rhetorical structure of various types of academic report writing, specifically the introduction and discussion sections (Hopkins and Dudley-Evans 1988; Kusel 1992; Dudley-Evans 1994; Jacoby, Leech and Holten 1995).

Prototypical move structures for the discussion section of research texts and MSc dissertations are reported on in Hopkins and Dudley-Evans (1988), Swales (1990) and Dudley-Evans (1986, 1994). Swales (1990: 172-3) lists the following eight most frequent moves: background information, statement of results, (un) expected outcome, reference to previous research, explanation, exemplification, deduction and hypothesis, and recommendation, which can occur in a cyclical manner throughout the discussion section.

a. Background information
This is somewhat free-standing move that can occur at any point in the cycle. As its name implies, this move is employed by authors when they wish to strengthen their discussion by recapitulating main points, by highlighting theoretical information, or by reminding the reader of technical information.

b. Statement of result
Evidence-suggest might be the starting point. We also might expect that the stronger results will be dealt with in an early cycle and weaker results in a later one.

c. (Un) expected outcome
Here the writer comments on whether the result is unexpected or not.

d. Reference to previous research

There are two main sub-types of steps: reference for purposes of comparison with present research and references for providing support for present result.

e. Explanation
This move is particularly common when the writer suggest reasons for a surprising result, or one at odds with those reported in literature.

f. Exemplification
This part consists of examples which are most often used to support an explanation.

g. Deduction and Hypothesis
This move is used to make a claim (however qualified) about the generalizability of some or all of the reported results.

h. Recommendation
The writer advocates the need for further research or makes suggestions about possible lines of future investigation.

These eight moves accommodate a valuable framework for further study on the research text discussion sections.

Researches done focusing on this topic mostly take homogenous samples. Belanger (1982) in Swales (1990) analyzed ten discussion sections from texts in the field of neuroscience. Hukcin (1987) did his research on the field of science (biology and physics) while Peng (1987) dealt with chemical engineering texts. To make a difference, for this research a comparative study is done between business and engineering texts which are exactly from different background of studies.

Method

This research applies qualitative approach which means it does not involve any statistical evaluation (Booth, Colomb, & Williams 1995). The data sources are four texts—two Business and two Engineering research texts while the data are the discussion section of the research texts. The texts are:

- Syed Zamberi Ahmad & Philip J. Kitchen. 2008. "Transnational corporations from Asian developing countries: The internationalisation characteristics and business strategies of Sime Darby Berhad". In. *Int. Journal of Business Science and Applied Management,* Volume 3, Issue 2, 2008. pp. 21-36.
- Oyeniyi, Omotayo and Abiodun Abolaji Joachim. 2008. "Customer service in the retention of mobile phone users in Nigeria". In *African Journal of Business Management* Vol.2 (2), February, 2008, pp. 26-31.
- Akihiko Tsuji1, Hiroki Kanie, Hirotaka Makise, Keizo Yuasa, Masami Nagahama, and Yoshiko Matsuda. 2007. 'Engineering of a1-antitrypsin variants selective for subtilisin like proprotein convertases PACE4 and PC6: Importance of the P20 residue in stable complex formation of the serpin with proprotein convertase'. In *Protein Engineering, Design & Selection* vol. 20 no. 4. pp. 163–170.
- Y. Daren, T. Jifeng, and B. Wen. 2008. "Evolution of compression process in aero-engine thermal cycles". In. The *Open Aerospace Engineering Journal*, 2008, 1. pp. 1-7.

The writer collects the data sources purposively (only business and engineering texts), read it repeatedly, re-verify the data, identifies its macro features, investigates how those features manifested, compares them to Swales' concept (1990), then, discusses and concludes it. After all, the paper is served.

Discussion

This discussion part will be divided into two. Firstly, we will look at the macro features of each text. Then, we will see how those features manifested.

3.1. Macro Features of Discussion Section of the Research Texts/Texts
In this part, we will discuss the discussion section of the research texts found one by one, started from business texts followed by engineering. It is to identify their macro features (based on Swales, 1990).

3.1.1 Business Text
In this part, two business texts are: 'Transnational corporations from Asian developing countries: The internationalization characteristics and business strategies of Sime Darby Berhad' here after known as **Text A** and 'Customer service in the retention of mobile phone users in Nigeria' hereafter known as **Text B** will be looked at.

a. Background information

Text A

Following this view, a closer look at the development of SD as a national MNC, reveals that the company was internationalized prior to its emergence as a Malaysian conglomerate. The group became a Malaysian MNC overnight through the acquisition of a British firm operating in the country. Sime Darby was a British-controlled corporation until the company's domicile was transferred from the United Kingdom to Malaysia in 1979. In line with the New Economic Policy (NEP) to increase Malay equity, the Malaysian government, after consulting investment bankers Rothschild and through its state trading arm Pernas, bought a number of Sime shares on the London Stock Market. Through the efforts of Tradewinds (M) Sendirian Berhad, a Pernas subsidiary, Sime's equity became Malaysian-owned in 1977. Prior to its establishment as a Malaysian MNC, SD had international business in several foreign countries, and this included having offices in London Singapore to support its international trading operations. (page 30)

Text B -

b. Statement of results

Text A

The argument proposed here is that the techniques employed by the Malaysian government through its state agencies, which allowed a massive acquisition drive, signified a new era in the method of internationalization and thus went well beyond traditional theories of FDI as suggested by most scholars. (page 30)

Text B

The t-value of 0.000 level of significance is 12.997, while f = 365.985 at p = 0.000 with adjusted R2 = 0.587. (page 29)

c. (Un)expected outcomes

Text A

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Text B

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d. Reference to previous research

Text A

However, it could be argued that the company possessed significant internal and ownership advantages created by nationalisation and favourable treatment by the Malaysian government as had been noted by Dunning's OLI theory (Dunning, 1993, 1995). (page 30)

Text B

- This supports H1 that there is a relationship between the levels of perceived service level and customer satisfaction. This means that customer will be satisfied, if perceived value of service is high. This is consistent with Woodruff (1997) findings. (page 29)

- Meaning that customers are likely to continue their patronage if they are satisfied with the perceived value of service. This is important as continued patronage will lead to retention of customers. This is consistent with Anderson and Sullivan (1993) findings. (page 29)

- Favorable behavioral intention is tested on customer retention in H4. t = 7.224, f = 130.57, p = 0.000 and R2 = 0.336 which support the hypothesis. That is, customer's behavioral intentions have a strong influence on customer retention. This is consistent with Colgate and Norris (2001) findings. (page 29)

e. Explanations

Text A

Nonetheless, this theory stresses that such firms have ownership advantages prior to their establishment. (page 30)

Text B

The result shows a moderate positive correlation (0.506) between the variables (r = 0.506, n = 132, p < 0.01). This indicates that when customers' service is higher, customer retention is also high. Retention is achieved only when the customers believe that customer services offered are effective and high. (page 29)

f. Exemplification
Text A
- For instance, about two years after the coming home of the firm, SD acquired BF Goodrich Pilipinas in 1981, and started its tyre business with the setting up of Sime Darby International Tyre Company (SIDITCO), which also invested in rubber, coconut, cocoa and coffee plantations. (page 30).
- Joint venture with foreign partners is another alternative arrangement available for SD's participation in international expansion. (page 30)
- Managerially, there are many lessons to be drawn from the case analysis. They include the following:
a) Managers need to avoid narrow or parochial views with regard to potential MNC development. There are many and diverse routes to such.
b) Strategic initiatives – such as joint venture – are not purely dependent on cultural criteria, but on competitive circumstances, government support or lack of it, technological innovation, capitalization, and managerial skills and know-how.
c) The rationale for 'going abroad' relies on opportunism, risk aversion, and managerial motivation.
d) Strategies for entry will vary based on individual country criteria coupled with the three items mentioned above. (page 31)

Text B
- The t-value of 0.000 level of significance is 12.997, while f = 365.985 at p = 0.000 with adjusted R2 = 0.587. This supports H1 that there is a relationship between the levels of perceived service level and customer satisfaction. This means that customer will be satisfied, if perceived value of service is high. This is consistent with Woodruff (1997) findings. (page 29)
- H4 is used to test the degree of differences in the level of customer service among the service providers. A one-way between groups analysis of variance was conducted to explain the effectiveness of the level of customer service. (page 29)

g. Deduction and hypothesis
Text A
- Managerially, there are many lessons to be drawn from the case analysis. They include the following:
a) Managers need to avoid narrow or parochial views with regard to potential MNC development. There are many and diverse routes to such.
b) Strategic initiatives – such as joint venture – are not purely dependent on cultural criteria, but on competitive circumstances, government support or lack of it, technological innovation, capitalization, and managerial skills and know-how.
c) The rationale for 'going abroad' relies on opportunism, risk aversion, and managerial motivation.
d) Strategies for entry will vary based on individual country criteria coupled with the three items mentioned above. (page 31)
- Specifically, from the interviews of key executives in the comp any, three primary reasons appear to be important reasons for SD to invest abroad. The first is to take advantage of market opportunities that is, regionalizing to key markets and access growing consumer demand in the region. The second is to diversify risks. And, the third is related to motivations which invariably revolve around diversification to escape high costs, labor, and other resource constraints in Malaysia. (page 31)

Text B
- Favorable behavioral intention is tested on customer retention in H4. t = 7.224, f = 130.57, p = 0.000 and R2 = 0.336 which support the hypothesis. That is, customer's behavioral intentions have a strong influence on customer retention. (page 29)
- This is so because this study had shown that there is a strong relationship between customers' perceived service quality level and customer satisfaction. That is if customers' perceived service quality level is high satisfaction will also be high. (page 30)

h. Recommendation
Text A
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Text B
- Following the analysis done on both texts, it can be seen that not all eight moves (we mention as macro features) recommended by Swales (1990) has been followed. The first business text only fulfill six macro features: background information, statement of results, reference to previous research, explanation, exemplification, and

deduction & hypothesis. Meanwhile, the second text fulfills five features: statement of results, reference to previous research, explanation, exemplification, and deduction & hypothesis.

3.1.2. Engineering Texts

In this section the two Engineering texts are: 'Engineering of a1-antitrypsin variants selective for subtilisin like proprotein convertases PACE4 and PC6: Importance of the P20 residue in stable complex formation of the serpin with proprotein convertase' here after known as **Text C** and 'Evolution of Compression Processes in Aero-Engine Thermal Cycles' here after known as **Text D** will be looked at.

a. Background information

Text C

Serpins can act as either inhibitors or substrates of proteinases (Bird et al., 1998; Silverman et al., 2001; Huntington, 2006). With inhibition (inhibitory pathway), the proteinase initially forms a non-covalent Michaelis-like complex through interactions with residues flanking the scissile bond (P1-P10). Attack of the active site serine on the scissile bond leads to formation of a covalent ester involving the active site serine of the proteinase and the backbone carbonyl of the P1 residue. Efficient serpin inhibitors form an essentially irreversible complex with the proteinase, and cleavage of the serpin by target proteinases at the reactive site loop (P1-P10) occurs slowly. In contrast, a substrate-like serpin is rapidly cleaved by the proteinase, resulting in dissociation of the complex and release of active proteinase and inactive serpin (substrate pathway). In an effort to create more selective inhibitors than a1-PDX, we prepared novel variants carrying mutations between P4 and P20. As mentioned, the nature of any serpin, whether it acts as an inhibitor or substrate of a proteinase, is dependent on the susceptibility of cleavage at the reactive site loop by the proteinase. The RRRR sequence, introduced at the P4-P1 position, was more efficiently cleaved by furin, PACE4 and PC6 than was the RVPR sequence. Further, Leu at the P20 position was replaced by Ala, Phe, Trp, Lys, Glu or Gln. (page 168)

Text D

There are many data sources about turbojet applications in the open literature as well as very limited descriptions about ramjet/scramjet applications. Due to commercial competitions or military secrets, it is no doubt that there are differences between the data adopted in this paper and the real engine attributes. We cannot guarantee the accuracy of public data. However, these data differences have little effect on the viewpoint of this paper, because this work objective is to analyze the public data and demonstrate the general trends, but not to discuss any particular design. Furthermore, these data differences may cause the imprecise determination of the terminal of those engine application ranges. (page 6)

b. Statement of results

Text C

These results and the structural data of furin suggested that Ala, Phe, Trp and Glu at the P20 position were able to interact with the S20 site better than Leu. (page 169)

Text D

Just like the range of $Ma1 = 1.5 \sim 3$ as the common range of turbojet and ramjet/scramjet applications, there must also be a common flight speed range, in which ramjet/scramjet with or without energy-bypass are developed for different applications. Furthermore, just like the range of $Ma1 < 3$ as the dominant range of turbojet applications, there must also be a specific range for the applications of ramjet with energy by pass, which can be expressed as $Ma1 > 9$ or a faster speed range. (page 6)

c. (Un)expected outcomes

Text C -

Text D

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d. Reference to previous research

Text C

- Serpins can act as either inhibitors or substrates of proteinases (Bird et al., 1998; Silverman et al., 2001; Huntington, 2006).

- Recently the crystal structures of furin and kexin, the homologue of furin in yeast, were determined (Henrich et al., 2003; Holyoak et al., 2003). (page 168)

Text D

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e. Explanations

Text C

When the S20 position of the RRRR (P4-P1) variant was mutated, the ability of a1-antitrypsin variants to form SDS-stable complexes with each SPC varied significantly. The Ala, Phe, Trp and Glu-P20mutant of the RRRR variant did not form SDS-stable complexes with furin, unlike Fig. 6. Inhibition of proteinase activity of extracellular matrix (ECM)-associated PACE4 or PC6 following expression of a1-antitrypsin variant ex vivo. (A) Western blot of laminin a-5 in the ECM fraction. The solubilized ECM fraction (20 mg protein) was subjected to 7.5% SDS-PAGE, and laminin a-5 chain was detected by Western blotting as described in Materials and methods. (B) Effect of a1-antitrypsin variants on ECM-associated PACE4 and PC6 activity. Cos-7 cells (35 mm dish) were transfected with expression plasmid for PACE4 or PC6 in the absence or presence of expression plasmid for a1-antitrypsin variant. As a negative control, Cos-7 cells were transfected with pcDNA3 vector, which had no insert (Mock). ECM-associated PACE4 and PC6 activity obtained from a 35 mm dish in the absence of a1-antitrypsin variant (Control) was 50.6 and 37.2 pmol/h, respectively. All assays were performed in triplicate. PACE4 and PC6, whereas Lys and Gln-P20 mutants formed complexes with furin, PACE4 and PC6 (Figs. 3 and 4). No inhibitory activity was found of the RRRRSA variant toward furin ex vivo or in vitro (Fig. 5). (page 168-169)

Text D

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f. Exemplification

Text C

To date, various synthetic SPC inhibitors such as peptidyl chloroalkylketones (Garten et al., 1994), the propeptide segment of SPC (Zhong et al., 1999) and polyarginine (Cameron et al., 2000) have been developed. However, PACE4- and PC6-specific inhibitors have not been reported.(page 169)

Text D

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g. Deduction and hypothesis

Text C

Our findings provide useful insights in the further development of therapeutic agents for the treatment of diseases caused by PACE4 overexpression. (page 169)

Text D

Just like the range of $Ma1 = 1.5 \sim 3$ as the common range of turbojet and ramjet/scramjet applications, there must also be a common flight speed range, in which ramjet/scramjet with or without energy-bypass are developed for different applications. Furthermore, just like the range of $Ma1 < 3$ as the dominant range of turbojet applications, there must also be a specific range for the applications of ramjet with energy by pass, which can be expressed as $Ma1 > 9$ or a faster speed range. (page 6)

h. Recommendation

Text C

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Text D

Following the analysis done on both journals, it can be seen that not all eight moves (macro features) recommended by Swales (1990) have been followed. The first engineering text (Text C) only fulfills six macro features; they are background information, statement of results, reference to previous research, explanation, exemplification, and deduction & hypothesis. Meanwhile, the second text (Text D) only fulfills four features; they are background of information, statement of results, and deduction & hypothesis.

Table 1. The Macro Feature/Moves of the Texts

Moves / Text	a	b	c	d	e	f	g	h
A	√	√	-	√	√	√	√	-
B	-	√	-	√	√	√	√	-
C	√	√	-	√	√	√	√	-
D	√	√	-	-	-	-	√	-

3.2. The Manifestation of Macro Features in the Texts

This part will identify the manifestation of macro features in both business and engineering texts. The explanations will be divided into two sections.

3.2.1. Business Text

Text A

In this text, background information is manifested by serving history and developments of SM and MCM through periods (page 30). Then, statement of results is manifested by stating an argument (page 30). Furthermore, reference of the previous research is manifested by mentioning a quotation by a scholar who has done quite similar research before (Dunning, 1993, 1995) (page 30). Explanations are manifested by relating the theories and the findings (page 30). Moreover, exemplification part is manifested by giving some examples, cases, and additional explanations (page 30). Lastly, deduction & hypothesis is manifested by claiming about the generalizability of some or all of the reported results. (page 31).

Text B

In this text, statement of the results is manifested by calculating the results (page 29). Furthermore, reference of the previous research is manifested by providing last research to support for present result. (page 29). Explanations are manifested by relating the theories and the findings (page 29). Moreover, exemplification part is manifested by giving some examples to support explanations (page 30). Lastly, deduction & hypothesis is manifested by claiming about the generalizability of some or all of the reported results. (page 30).

3.2.2 Engineering Text

Text C

In this text, background of information is manifested by highlighting theoretical information (page 168). Then, statement of the results is manifested by stating that one result and data are better than another (page 168). Furthermore, reference of the previous research is manifested by mentioning a quotation by a scholar who has done quite similar research before (page 168). Explanations are manifested by relating the theories and the findings. It is also mentioned that some of findings are not related to some theories (page 168-169). Moreover, exemplification part is manifested by giving additional information about one study which is not reported yet (page 169). Lastly, deduction & hypothesis is manifested by claiming about the usefulness of the result of the research. (page 169).

Text D

In this text, background of information is manifested by reminding the readers about some previous researches have been done before (page 6). Then, statement of the results is manifested by stating the strength of the result of the research (page 6). Lastly, deduction & hypothesis is manifested by claiming about the generalizability of some or all of the reported results. (page6).

Conclusion

After comparing the macro feature of the discussion section of business and engineering texts and seeing how they are manifested, a conclusion has been made. Firstly, business text can averagely fulfill more macro features which are suggested by Swales (1990). The first business text has six features while the second text has five features. On the other hand, the engineering texts have fewer features. The first text has six features while the second text only consists of three features. Secondly, all the macro features are manifested in certain ways. Background information is manifested by theoretical information and other additional features; statement of results is manifested by stating an argument; reference of the previous research is manifested by mentioning a quotation by a scholar who has done quite similar research before; explanations are manifested by relating the theories and the findings; exemplification part is manifested by giving some examples, cases, and additional explanations; and deduction & hypothesis are manifested by claiming about the generalizability of some or all of the reported results.

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