
GENRE VARIATION AND ITS IMPACT ON EFL STUDENTS' READING COMPREHENSION

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Abstract

Recent years have seen increased attention being given to the notion of genre in ELT. This has been especially true in the case of ESP, where researchers have been interested in genre as a tool for analysing and teaching the spoken and written language required of non-native speakers in academic and professional settings (Bruce 2008; Hyland 2007; Mysko & Gordon 2009; Swales 1990, 2011). In studies of ESL reading development, a number of studies (e.g. Cervetti *et al.* 2009; Francis & Hallam 2000; Toledo 2005) reported positive effects of genre instruction on students' understanding of text structure.

In spite of the fact that the studies conducted on the impact of genre instruction on written production of texts is well researched, little research has been conducted to investigate whether a change in text genre can affect learners' reading comprehension. This is especially important given that reading is the most needed skill in ESP contexts worldwide.

This study is the report of a research project which attempted to answer the following research question: What is the effect of genre variation on the reading comprehension of medical students? To that end a reading comprehension test was developed which consisted of two types of texts (with the same text difficulty) each in a different genre, a medical English textbook and a general English textbook. 93 students majoring in medicine took the test. A matched-pairs t-test was used to compare their performance on the two different text genres. The findings indicated that the participants were more proficient in comprehending EGP texts compared to ESP texts. This shows the relative superiority of topic familiarity over text structure familiarity in text processing. The inability of readability formulas to exactly mirror the text difficulty might be the second reason for the better performance of learners on EGP texts.

1. Introduction

The last three decades have witnessed increasing attention being given to the concept of genre. Numerous pieces of research have been conducted to explore how genre can contribute to a better understanding of linguistic theory and practice (e.g. Flowerdew 2005; Cheng 2011; Costino & Hyon 2011). Traditional definitions of genre focused on textual regularities. In traditional literary studies the genres were defined by conventions of form and content. Current genre theories place further emphasis on the social and cultural understanding of language and define it as "abstract socially recognized ways of using language" (Hyland 2002: 114). This rethinking has since informed a large number of research works mainly focusing on school and workplace writing through ethnographic research methods (e.g. Flowerdew & Dudley-Evans 2002; Bhatia 2008).

Three schools of genre convention can be distinguished, namely New Rhetoric, Australian Framework (known as the Sydney School in the US), and ESP. Each school assigns a varying amount of emphasis to textual regularities or contextual facts influencing how a text is used and why it is used the way it is.

To begin with, the New Rhetorician orientation to genre is built mainly upon “the seminal paper by Miller (1984) and is represented in the work of Bazerman (1994), Freedman and Medway (1994) and Berkenkotter and Huckin (1995)” (Hyland 2002: 114). Proponents of this approach tend to give priority to contextual variables which have the potential to influence the rhetorical structure of a text. That is why ethnography is the methodology of choice for their researchers in the process of uncovering text-external issues. The second orientation, drawing on Halliday’s Systemic Functional Linguistics, is known as the Sydney School. This genre approach stresses the social purposes genres are intended to serve and it elaborates the schematic structures devised to serve those purposes. “Genre is seen as staged goal-oriented social process, emphasizing the purposeful, interactive, and sequential character of different genres and the ways that language is systematically linked to context” (Hyland 2002: 115).

The third genre perspective, known as the ESP approach, falls somewhere between the two orientations above. The most prominent figure in this tradition is Swales. It was Swales’ 1990 seminal work, *Genre Analysis*, which is mainly considered as the pioneer of genre discussions in the field of ESP. According to Swales (1990: 58):

A genre comprises a class of communicative events, the members of which share some set of communicative purposes. These purposes are recognized by the expert members of the parent discourse community, and thereby constitute the rationale for the genre. This rationale shapes the schematic structure of the discourse and influences and constrains choice of content and style. [...] In addition to purpose, exemplars of a genre exhibit various patterns of similarity in terms of structure, style, content and intended audience. If all high probability expectations are realized, the exemplar will be viewed as prototypical by the parent discourse community.

This approach to genre places equal emphasis on both communicative purpose and the formal aspects of genre theory. Swales’ classification of different academic genres revolves around the writer’s communicative purpose.

In sum, what all these genre theories have in common is that they all draw on the fact that groups of texts can be similar or different based on certain restrictions imposed from inside or outside the text. It is worth noting that although genres are assumed to convey some consistency and stability in form, these schemes and structures can be subject to change due to variations in culture, history, and the communicative situation in which they first emerged.

2. Reading comprehension

Research on the variables that have the potential to influence the nature of reading comprehension has been commonly divided into two categories: the research

investigating text-related variables and that studying reader-related factors. Text readability is among the first group of factors and has received considerable attention in reading literature. This is mainly rooted in the researchers' concern to adjust the text difficulty to the target reader. On the other hand, reading is usually assessed through the administration of a number of passages rather than a single text, and in such cases care needs to be exercised to make the passages equally readable. Syntax and lexis are the main areas considered in the development of readability formulas. However, regarding the myriad of variables that can affect comprehension of a certain passage, "readability formulae give only crude measures of text difficulty" (Alderson 2000: 73). Text genre is one such factor which is likely to influence meaning processing and ease of comprehension. As Toledo (2005: 1059) puts it: "The notion of genre or rhetoric schemata brings up a pragmatic dimension, and incorporates a consideration of the sociocultural conventions for the assessment of reading comprehension." The important point about genre is that it is discussed under both text-driven as well as reader-related variables.

Perhaps the most important concept with regard to the second group of factors, i.e. reader-related factors, is schema theory. According to this theory, meaning does not autonomously reside in the text; rather, the text helps readers to construct meaning from their previously acquired knowledge, i.e. background knowledge. The collection of these knowledge structures, concepts and ideas is referred to as schema. According to schema theory success in deciphering a text requires an interaction between the material in the text and the reader's background knowledge (Hadley 2003). Another notion which is worth mentioning is top-down processing in which readers rely on their experience, emanating from their acquired schemata, to decipher the text. In other words, "the starting point is within the mind of the listener/reader" (Johnson 2001: 275).

While numerous studies (e.g. Hyon 1996; Ghaith & Harkouss 2003; Brantmeier 2005) have been conducted on the impact of genre instruction on the written production of texts, there has been little research investigating whether a change in text genre can affect learners' reading comprehension (Hyon 1996; Alderson 2000). This is especially important given that reading is the most generally needed skill in ESP contexts worldwide, particularly in Iran. According to a figure gained through a number of carefully conducted research studies, nearly 80 percent of scientific and technical texts all over the world are written in English (Garfield 1983, as cited in Swales 1990). This underlines the importance of reading skills, particularly in ESP.

In studies of ESL reading development, a number of studies (e.g. Francis & Hallam 2000; Toledo 2005; Cervetti *et al.* 2009) reported positive effects of genre instruction on students' understanding of text structure. This is in line with the findings of research concerning the positive influence of formal schemata on reading comprehension. In another study Salager-Meyer (1991, as cited in Alderson 2000), showed there was an interaction between text-structure familiarity and topic familiarity. She further argued that when readers are familiar with the topic of the passage, unfamiliarity with the text structure may only marginally hinder the comprehension process.

The present study tries to find an answer to the following research question: What is the effect of genre variation on the reading comprehension of EFL students?

3. Method

3.1. *Participants*

The participants in this project were 123 first-year undergraduates (45 males and 78 females) majoring in medicine at two universities in Ardabil, Iran, namely Islamic Azad University in Ardabil and Ardabil University of Medical Sciences. They were taking their ESP Medicine course, the syllabus of which mainly focused on the use of specific medical terms as well as improving reading comprehension skills. Their classes were held three hours a week in the 2009-2010 academic year. They had already passed their English for General Purposes (EGP) course. 30 of these students took part in the validation phase of the Reading Comprehension Test (RCT) which was specially devised for this study. The remaining 93 students (30 males and 63 females) participated in the main phase of the project.

3.2. *Materials*

The RCT was composed of four passages which were in two main genres, general and medical English textbooks, based on Swales' (1990) definition (see section 1). These passages were selected from four books taught for general and medical English courses. Each text was followed by five multiple-choice test items giving a total of 20 items (see Appendix). The Flesch Reading Ease (FRE) formula was employed to calculate the text difficulty for the test passages. The FREs for EGP texts were 60 and 48.6, while for the ESP passages they were 58.5 and 47.6. Seven units of the course book by Deedari & Ziahosseiny (1989), taught during the term for all students, were randomly selected out of all 19 units of the book, irrespective of text length. The reading passages from these units ranged in text difficulty from a minimum of 47.3 to a maximum of 62.3. Mean text difficulty was computed for these seven units and came to 53.4. The selected passages for RCT had FREs within the minimum and maximum indexes mentioned above. Care was also taken to make the comprehension questions of the passages comparable in terms of referential and inferential questions.

3.3. *Procedures*

At the beginning of the first semester of the 2010-2011 academic year two classes of medical students at two universities were selected. They were going to take their ESP Medicine course. Both classes studied the same book (English for students of medicine) during the term. At the final exam session (8 January, 2011) they took the RCT.

3.4. *Design and analyses*

In order to determine the causes for differences that already existed among the participants' reading comprehension ability as a result of genre variation, this study employed a causal-comparative research method which was ex-post-facto in nature (the researchers had no control over the events). Text genre was the independent variable and reading comprehension was the dependent variable of the study. Since the same book was taught for both classes the textbook variable was controlled.

A matched-pairs t-test was used to compare the performance of the students on both text genres. The effect size was calculated using eta squared (η^2).

4. Results

Table 1 presents the descriptive statistics for mean student performances (mean test scores) on the two genres across texts with different readability indexes.

| | | | N | M | SD |
|------------------------|-----|-----------|----|------|-------|
| Genre | EGP | Easy | 93 | 3.58 | 0.771 |
| | | Difficult | 93 | 3.18 | 1.103 |
| | ESP | Easy | 93 | 2.00 | 1.437 |
| | | Difficult | 93 | 3.30 | 1.081 |
| N: Number | | | | | |
| M: Mean | | | | | |
| SD: Standard Deviation | | | | | |

Table 1. Descriptive statistics for EGP and ESP texts

To compare the performances of students on EGP and ESP passages, a matched-pairs t-test was employed. Table 2 below gives the summary of t-test procedure.

| | t | df | Sig. |
|--------------------|-------|----|------|
| EGP vs. ESP | 7.479 | 92 | .000 |

Table 2. T-test for genre-induced differences in performance

Table 2 shows that the test scores of the students on EGP and ESP passages are different at 0.01 probability level. Adding up mean test scores of all students in Table 1 shows that the performance of students on EGP texts was better than that on ESP texts ($3.58+3.18=6.76 > 2.00+3.30=5.30$).

Eta squared (η^2) was calculated for the effect size which came to 0.37. This index shows the strength of association between two variables of text genre and reading comprehension which is 37% in this case. This indicates that the two independent and dependent variables of the study are related.

5. Conclusion

This study was an attempt to explore the effect of two different genres (general versus medical English textbooks) on the reading comprehension of EFL students. The findings indicated that readers were significantly more proficient in comprehending EGP texts compared to ESP texts. This is partly in line with Salager-Meyer's (1991, as cited in Alderson 2000) finding concerning the relative superiority of topic familiarity over text structure familiarity in text processing. In other words, when learners are acquainted with the topic at issue, they have fewer obstacles in extracting meaning out of a passage. With regard to the present study it might be claimed that since the

students had previous experience with EGP passages while passing their general English course at university and during their high school education, their performance was markedly better in EGP texts in comparison with that in ESP passages.

The inability of readability formulas to exactly mirror text difficulty might be the second reason for the better performance of learners on EGP texts. As Alderson (2000) puts it, readability indices do not seem to be reliable because they focus on a very limited number of factors such as lexis and syntax to gauge the passage difficulty and fail to consider many other elements involved, including text genre. In fact, these formulas restrict their computations to sentence level and do not go beyond to consider discourse factors and ultimately text genre. In the present research, although the text difficulty of both passages was the same, there might be some other determining factors at work which make EGP passages easier to understand, at least for the learners of this study.

Finally, some other areas for further research are recommended below. First, this study could be conducted with students belonging to different proficiency levels to explore the moderating effect of proficiency level on reading comprehension. Second, similar studies could be performed to examine the differing influence of gender along with genre variation on reading comprehension. As another line of research the performance of students studying other academic disciplines such as Engineering, Social Sciences, Arts, etc. could be compared with their performance on EGP texts.

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Appendix

Passage one (FRE=60)

Thomas Alva Edison lit up the world with his invention of the electric light. Without him, the world might still be a dark place. However, the electric light was not his only invention. He also invented the phonograph, the motion picture camera, and over 1,200 other things. About every two weeks he created something new.

Thomas A. Edison was born in Milan, Ohio, on February 11, 1847. His family moved to Port Huron, Michigan, when he was seven years old. Surprisingly, he attended school for only two months. His mother, a former teacher, taught him a few things, but Thomas was mostly self-educated. His natural curiosity led him to start experimenting at a young age with electrical and mechanical things at home.

When he was 12 years old, he got his first job. He became a newsboy on a train that ran between Port Huron and Detroit. He set up a laboratory in a baggage care of the train so that he could continue his experiments in his spare time. Unfortunately, his first work experience did not end well. Thomas was fired when he accidentally set fire to the floor of the baggage car.

Thomas then worked for five years as a telegraph operator, but he continued to spend much of his time on the job conducting experiments. He got his first patent in 1868 for a vote recorder run by electricity. However, the vote recorder was not a success. In 1870, he sold another invention, a stock-ticker, for \$40,000. A stock-ticker is a machine that automatically prints stock prices on a tape. He was then able to build his first shop in Newark, New Jersey.

Thomas Edison was totally deaf in one ear and hard of hearing in the other, but thought of his deafness as a blessing in many ways. It kept conversations short, so that he could have more time for work. He called himself a "two-shift man" because he worked 16 out of every 24 hours. Sometimes he worked so intensely that his wife had to remind him to sleep and eat.

Thomas Edison died at the age of 84 on October 18, 1931, at his estate in West Orange, New Jersey. He left numerous inventions that improved the quality of life all over the world.

1. In his life, Thomas Edison did things in this order:
 - a. became a telegraph operator, a newsboy, and then got his first patent.
 - b. became a newsboy, got his first patent, and then became a telegraph operator.
 - c. got a patent, became a telegraph operator, and then became a newsboy.
 - d. became a newsboy, a telegraph operator, and then got a patent.
2. In paragraph 3 line 17 the word 'car' means

 - a. automobile.
 - b. coach.
 - c. machine.
 - d. vehicle.

3. Edison considered his deafness

 - a. a disadvantage.
 - b. a blessing.
 - c. something from a priest.
 - d. a necessity.

4. Of all the inventions, the was probably the most important for civilization.
 - a. vote recorder
 - b. stock ticker
 - c. light bulb
 - d. motion picture camera
5. The main idea of this passage is that

 - a. Thomas Edison was always interested in science and inventions, and he invented many important things.

- b. Thomas Edison could not keep a job.
- c. Thomas Edison worked day and night on his experiments.
- d. Deaf people make good inventors because they can focus without the distraction of spoken conversation.

Passage two (FRE=58.5)

The human skin can suffer from a number of diseases although the face is relatively immune. Constant exposure to air and sun protects the face from a lot of infections that are due to organisms that love dark and damp areas, such as between the toes. But for men, any diseases on the face can affect shaving.

The one face rash which is very common is acne. The complaint is far more common among youths than any other age group, especially young men. Unless a male patient has a desire to grow a beard, I advise him to continue shaving but rather sketchily, skating around the worst spots. He should use a good, unscented soap, or a medicated one.

Eczema of the face is much less common than acne. Again, keep on shaving, but avoid the worst areas as far as possible. Fortunately, eczema rarely lasts for anything like as long as acne.

Impetigo, another skin infection, seems to prefer the face to any other parts of the body surface. Germs affect isolated areas of the face but do not spread outwards from the main areas. Sufferers should seek medical advice since it is very often rapidly cleared up by the appropriate antibiotic drug.

Since the majority of men do not have the time to go to the barber, and therefore do their own shaving, barber's rash is now a rarity. Even among the few who still attend hairdressing salons, the latter are now almost invariably carefully maintained and have a high standard of hygiene.

Whatever the skin condition from which the face may suffer, the patient must always keep to his own towel. Also, the razor must be thoroughly cleaned after every shave, (though actual scalding is said to blunt the edge). Very occasionally a patient who uses an electric razor gets an allergic rash due to the chrome or nickel in the razor. But it is possible to identify the metal responsible and take precautions.

Finally, use pleasantly warm water for shaving when you have any skin trouble on the face, and don't follow the shaving by after-shaving lotion until the rash is better. There are plenty of shaving products for men that are available, such as skin soothers or moisturisers, so, if you are not suffering from any infections, there is no reason why you cannot have a close shave and maintain healthy skin.

6. The main idea of the passage is how to
 - a. manage face skin troubles
 - b. shave in cases of having skin infections
 - c. follow hygienic rules in barber-shops
 - d. treat skin problems in the best way
7. 'Skating around' in line 8 means
 - a. shaving
 - b. cleaning
 - c. avoiding
 - d. rubbing
8. How many different face infections are mentioned in this passage?
 - a. Three
 - b. Four
 - c. Five
 - d. Six
9. 'Keep to' in line 22 means
 - a. share
 - b. carry
 - c. buy
 - d. use
10. The writer is probably
 - a. in favor of attending hairdressing salons

- b. not in favor of attending hairdressing salons
- c. in favor of a close shave
- d. not in favor of a close shave

Passage three (FRE=48.6)

At the very top of a rocky, wind-whipped ridge above this sprawling ski resort west of Yellowstone National Park stands a towering grove of ancient whitebark pine trees. They are one of the few living things that thrive in the harshness at such altitudes, and they produce a large nut that is rich in fat and critical to wildlife.

There is mounting concern among biologists and other researchers, however, that global climate change may be creating conditions in and around the park that are inhospitable for the tree. If climate warming is the real, long-term phenomenon that many experts think it is, scientists believe it could set off a series of changes that could kill 90 percent or more of the whitebark pine trees and possibly compromise the future of the threatened grizzly bear.

The whitebark pine produces cones with pea-size nuts that bears eat in the fall. "Of all the vegetable foods in the ecosystem, whitebark pine is probably the most important," said Chuck Schwartz, leader of the Interagency Grizzly Bear Study Team, a federal agency responsible for protection of the bear. "They are critical to the fall fattening process to get the bears through the winter."

11. The word 'inhospitable' in line 7 means
 - a. dangerous
 - b. welcoming
 - c. far-reaching
 - d. inviting
12. The main idea of this passage is that
 - a. whitebark pines can live at high altitudes
 - b. grizzly bears eat whitebark pine nuts
 - c. global warming may be a real problem, but no one knows for sure
 - d. global warming is affecting whitebark pines and grizzlies
13. Grizzly bears need to eat whitebark pine nuts because the nuts
 - a. are the only food available in the park
 - b. help the bears fatten up for the winter
 - c. contain an important kind of protein
 - d. are hard for other animals to open
14. Chuck Schwartz's job is to
 - a. manage Yellowstone National Park
 - b. protect grizzly bears
 - c. protect pine trees.
 - d. save pine trees from bear damage
15. Scientists believe that global warming is affecting grizzly bears by...
 - a. making their coats less warm
 - b. causing them to have fewer cubs
 - c. increasing the number of animals that can kill them
 - d. harming the trees that produce their major food

Passage four (FRE=47.6)

Surgery has always been one of the most effective ways to remove cancers. By the removal of localized growths, the patient may be completely cured. Approaches to treatment may be varied, and may not, in some cases, even include surgery. X-ray or radium treatment is employed successfully in many types of pelvic cancer. Chemical therapy includes hormone treatments of breast and prostate cancer, and also drug management of the leukemias, blood cancers. Often a combination of surgery, X-ray, and drugs is used.

Among the substances being applied in studies of cancer treatment is a product in various forms known as aminopterin and teropterin. A substance called folic acid has the power to stimulate the growth of blood cells. The substance called aminopterin opposes folic acid. Therefore, it has been used in an attempt to control rapid growth of cells, and there seems to be evidence that in some instances it does delay growth because patients may say that they feel better and suffer less pain. In addition, aminopterin has been applied with some success in attacking leukemia.

The use of radioactive isotopes is the most exciting of the recent approaches to the treatment. Since these chemicals are likely to go directly to one tissue of the body, they concentrate in that organ and destroy abnormal tissues there. Cancer of the thyroid has been successfully treated by using radioactive iodine. Iron, sodium, potassium, chlorine, bromine, calcium, strontium, sulphur, carbon, and hydrogen have all been subjected to experiments in controlling growths in various parts of the body. Radioactive phosphorus has also been applied externally to warts, moles, and other growths on the surface of the body, and in some instances with apparent success.

The nitrogen mustard chemicals, developed for the use in warfare, have been helpful in destroying cancer cells of the blood. These drugs are used effectively in Hodgkin's disease, chronic leukemia, and in other forms of blood tumors.

Much remains to be learned about cancer, and much will depend on the cooperation of patients in promptly reporting to their doctor any suspicious signs. Regular yearly checkups aid in early detection of cancers.

16. One of the most effective ways of cancer treatment is
 - a. the removal of localized growth
 - b. the exposure to X-ray
 - c. chemical therapy
 - d. drug management
17. Aminopterin is one of the substances applied to
 - a. stimulate the growth of blood cells
 - b. develop folic acid
 - c. control rapid growth of blood cells
 - d. develop leukemia
18. Radioactive isotopes is a recent approach to
 - a. concentrate cancer in one tissue of the body
 - b. the treatment of blood cells
 - c. control the growth of radioactive iodine
 - d. the treatment of the thyroid
19. The nitrogen mustard chemicals are helpful in
 - a. destroying the affected cells in pelvic cancer
 - b. the treatment of growths on the surface of the body
 - c. chronic leukemia and other forms of blood tumors
 - d. attacking folic acid in the blood
20. Cancer can be prevented and treated successfully by
 - a. regular yearly checkups
 - b. increasing the intake of folic acid
 - c. learning more about cancer
 - d. consuming mustard