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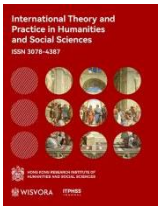

Impact of Genre and Familiarity on Reading Choices in College English for Students with Learning Challenges

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Abstract

Purpose: With the continuous improvement of higher education penetration in China, college students group scale is also expanding, at the same time, lag behind, unable to adapt to the teaching situation of the learning student group is more and more large. This study examines how text genre and topic familiarity influence reading choices among college English students facing learning challenges.

Approach: A total of 26 participants participated in this study (boys: n=9,18.85 ± 1.35 years old), Eyelink 1000plus device was used, participants freely scanned the articles on the screen and answered the corresponding questions to ensure that they had a comprehensive understanding of the content of the article. Four indexes of fixation duration, fixation counts, average fixation duration and average pupil size were analyzed.

Results: The findings indicate that: 1) Students with learning challenges exhibit superior performance on expository texts compared to narrative and argumentative ones, with significantly reduced fixation duration and count on expository texts versus the other genres ($p < 0.05$); 2) These students demonstrate enhanced reading efficiency on English texts with known topics compared to those with unknown topics, characterized by notably lower fixation duration and frequency ($p < 0.001$).

Conclusion: In light of these results, we propose the adoption of differentiated instruction, proceeding incrementally within the English curriculum to select suitable reading materials for students with learning challenges, aiming to enhance their reading proficiency and ameliorate their academic standing.

1. Introduction

Learning Difficulty (LD), initially conceptualized by American educator Kirk, denotes individuals whose atypical behavioral and psychological traits stem from neurological

dysfunction rather than intellectual or environmental factors, leading to deficits in one or more academic domains(Kirk & Bateman, 1962). Subsequently, he introduced the term Learning Disability (LD), distinct from Learning Difficulty, to describe children with typical sensory functions and no significant cognitive impairments. These children exhibit behavioral and psychological differences from their peers, often struggling to adapt to school environments or to benefit from standard instructional approaches(Kirk & W., 1975). In subsequent research on students with subpar academic performance, international scholars have also categorized such students as "Underachievers". Some researchers regard Underachievers as "capable students who do not meet expectations" (Reis & Mccoach, 2016). Domestic researchers define students with learning difficulties as those who exhibit suboptimal performance in specific subjects, low rankings, and poor psychological and behavioral traits. These students do not have cognitive deficits and their intellectual capacity is comparable to that of their peers (Ma, 2021).

Reading involves extracting information from materials, and reading comprehension is the cognitive process of deriving meaning from text and enhancing learning capabilities (Snow, 2002). Language comprehension has consistently been a focal area in cognitive psychology, with a surge in research on English discourse reading in recent years. Psycholinguists largely agree that the comprehension of discourse involves intricate cognitive processing. It necessitates that readers discern the author's intent and contextual knowledge of the discourse, integrating their own prior knowledge and experiences to fully process and comprehend the text (Li, 2013).

Schema Theory elucidates how readers leverage pre-existing knowledge to comprehend and assimilate textual content (Goodman & Kenneth, 1967). In the context of Schema Theory, reading entails the alignment of preconceived schemes with incoming information. The schemes operative during reading are categorized into three types: linguistic, content, and formal schemes. Linguistic schemes encompass the learner's grasp of language conventions, grammar, and syntax, as well as their application in reading, indicative of varying levels of reading proficiency (Wang et al, 2005). Content schemes represent the learner's holistic comprehension of discourse, predicated on personal experience, including familiarity with the article's contextual background. These schemes reflect the extent of the learner's pre-existing knowledge and experiential richness. Formal schemes pertain to the reader's comprehension and command of the article's structure, encompassing aspects such as genre, textual form, and organizational arrangement. This includes an understanding of the article's genre and its structural format (Zhong & Xie, 2020). The interplay among the genre of the article, its organizational structure, and the reader's familiarity with background knowledge culminates in diverse reading performances among individuals(Bernhardt, 1983).

Research has demonstrated that the complexity of text significantly influences an individual's comprehension, with increased difficulty prompting a more attentive approach to achieve a profound understanding of the material (Wang, 2005). The density of novel vocabulary impacts the efficacy of incidental vocabulary acquisition; an optimal density of unfamiliar words within a text facilitates more effective learning of target words (Shi & Zhou, 2023). Studies have shown that articles with more explicit themes lead to greater comprehension and reading efficiency (Zhang et al, 2019). Conversely, other research indicates that lower topic familiarity can enhance the depth of reading processing due to the activation of novel schemas during recall (Gu & Chen, 2020). The levels-of-processing theory posits that deeper cognitive processing correlates with longer retention of information (Liu, 2011). The genre and structure of a text serve as the foundation for comprehension (Mohamedi-Amaruch,Rico-Martin, 2020). Argumentative texts, compared to expository texts, pose a greater challenge to reading processing, manifesting in increased fixation times and cognitive load (Ceylan & Baydık, 2018). Narrative generally

includes the background, theme, characters and plot, focusing on the description of someone or something;the expository article is mainly a kind of information about a specific subject, generally discusses only facts and does not include personal feelings and positions(Raymond et al., 2021);While argumentative essays are mostly used to elaborate a certain argument, and support this argument through discussion. This kind of text mostly contains individual subject judgment and position, and in the process of reading, individuals need to use more reasoning and judgment ability.

Students display a marked preference for reading content with varying degrees of familiarity, with familiar topics more effectively stimulating their motivation and interest (Shakourzadeh & Izadpanah, 2020). This suggests that selecting learning materials that resonate with students' existing knowledge and creating appropriate curricula can significantly enhance their interest and academic performance. Eye-tracking technology, with its capability to track reading processes in real time, has become a vital technical tool in the field of reading research.

Reading primarily involves eye movements that facilitate the efficient extraction of environmental information and its transmission to the brain for cognitive processing. Consequently, utilizing eye-tracking technology, researchers can acquire eye-movement data from subjects as they process textual information during reading in a more natural yet scientifically controlled environment (Yan et al., 2013), This allows for correlating the collected eye-movement data with the subjects' cognitive reading processes (Rayner, 1995). This approach not only enhances the ecological validity of research on English discourse but also contributes to the advancement of schema theory in reading(Burton & Daneman, 2007). It provides a scientific basis for exploring the reading characteristics of learners and selecting suitable and effective reading materials for students with reading difficulties.

2. Experimental design

2.1 Participants

30 subjects participated in this experiment, because of the nine-points calibration, and some invalid data had been removed, finally, 26 undergraduate students(boy=14; M_{age}±SD=18.85±1.35) participated in this experiment, all native Chinese, right-hand, and had normal vision or corrected vision. This experiment was approved by the Ethics Committee (approval number No.2022085), and all subjects signed the informed consent form before the start of the experiment. G * Power 3.1 was used to calculate the lowest sample size of 18(α =0.05,1- β =0.80, and effect size f=0.25)(Faul et al., 2007). Participants participating in the formal experiment exhibit suboptimal performance in specific subjects, low rankings, and poor psychological and behavioral traits, but they do not have cognitive deficits, such as reading difficulties, learning difficulties and ADHD, their intellectual capacity is comparable to that of their peers.

By issuing the self-compiled Basic Information Questionnaire, to collect the information of the subjects.The scores of the final English exam were arranged in descending order. According to the normal distribution principle of the students, the top 27% were defined as the group of excellent students, and the last 27% were defined as the group of students with learning challenge.The difference *t*-test of the English final exam scores of the participants showed that the English final exam scores of excellent students and students with learning challenge were significantly different, and the data results are shown in Table 1.

Table1 Differential *t*-test Results on English Scores

	M±SD	*t*	*df*	*p*	*d*
Students with learning challenge	83.70±2.50	-30.510	18	< 0.001	0.368
Excellent students	50.50±2.37				

2.2 Experimental Materials

The experimental materials are selected from the PETS 2 (*Public English Test System, PETS*) reading part, about 300 words. In this study, 20 themes were condensed in the experimental materials, including 10 common topics in college life, such as community activities, new media, smartphone applications, and 10 unfamiliar themes, such as the source of comet names, English language and literature, etc.In the subject group, five undergraduates were invited to assess the subject familiarity of the experimental materials, and these five undergraduates did not participate in the formal experiment. Based on the scores of topic familiarity and unfamiliarity were arranged, and the 6 articles with familiar and unfamiliar on different genre were selected to form the experimental materials. In this study, six experimental materials are needed, including two narrative, expository and argumentative essays, respectively, for the familiar and unfamiliar themes. A paired sample *t*-test on the scores of experimental material familiarity, and the data results showed significant differences in article topic familiarity in the same genre, t=4.811, df = 5, p=0.009 < 0.01, d=3.928.

2.3 Experimental Installation

Visual perception of text information is the first step in reading comprehension, and eye movements can reveal the cognitive processes related to reading comprehension (Choi & Chung, 2019). According to the eye-brain hypothesis, eye movement technology can realize the real-time recording of the discourse reading process by positioning and tracking the eye gaze and change process. Therefore, collecting the eye movement indicators of them can reflect the processing process and efficiency of them when reading articles.

Therefore, the SR Research eye movement device was applied to write the experimental program and conduct the data collection process (the sampling rate is 1000 Hz, R.P.=1080×768).

The experimental computer is divided into one main test machine and other machines with auxiliary functions. The main test machine is operated by the main test, such as fixation point calibration, etc. The test machine presents the experimental material, and the data of the single eye is recorded by the infrared camera at the monitor.

The experiment was equipped with an assistant. The laboratory with good sound insulation effect and light insulation measures is selected to conduct all the experiments, so as to avoid the errors and effects of the experiment caused by the reflection and noise of the test machine screen to the greatest extent. After the experiment, the data collected by the experimental equipment were screened and extracted by SR Research Eyelink 1000 Plus Data Viewer for subsequent data analysis.

The experimental flow chart is shown in Figure 1.

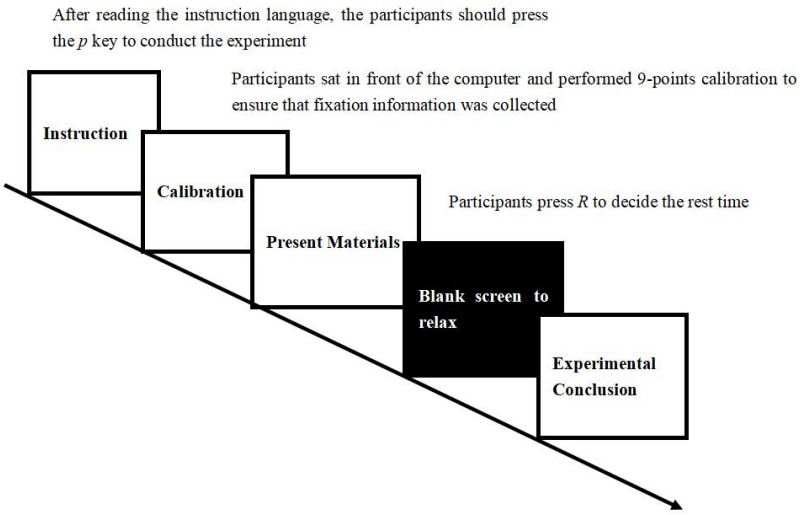


Figure 1: The Experimental Chart

2.4 Data Processing

Before each participants conducts a formal experiment, a series of calibrations need to be completed to ensure that the experimental instrument can accurately and effectively complete the experimental process with low acquisition. Therefore, before data processing, it will be impossible to enter the experiment through nine-point calibration, remove fixation points below 80*ms* or higher than 1200*ms*, and remove data beyond ± 3 standard deviations in the total sample. The next step, the filtered data were statistically processed using *SPSS* 25.0, using descriptive statistics, difference tests, and three-factor mixed analysis of variance for all variables.

3. Result

3.1 Descriptive Statistical Results

Fixation count, fixation duration, average fixation time and average pupil size were selected as indicators for descriptive statistical analysis. The eye movement indicators of the two types of students in reading different article with different genres and familiarity are shown in Table 2.

Table 2: Descriptive Statistics Results for Eye Movement Indicators

Indicators			Narrative		Expository Article		Argumentative Article	
			Familiar Theme	Unfamiliar Theme	Familiar Theme	Unfamiliar Theme	Familiar Theme	Unfamiliar Theme
Fixation Count	Students with learning challenge	M	977.90	1180.40	907.60	968.20	1357.00	1445.10
		SD	299.43	362.31	272.44	280.27	416.97	494.23
	Excellent students	M	540.40	692.30	621.80	667.70	802.90	949.50
		SD	133.17	119.56	118.31	116.15	949.50	200.45
Fixation Duration (ms)	Students with learning challenge	M	264013.30	317690.60	261017.60	285945.30	389504.30	406811.40
		SD	85749.19	106053.57	76878.03	90252.90	94367.18	97714.05
	Excellent students	M	149602.40	187508.20	170638.70	182253.50	223558.00	261148.80

		SD	45418.75	34324.57	41698.51	36802.64	38587.96	56941.35
Average Fixation Duration (ms)	Students with learning challenge	M	240.31	240.74	243.86	244.63	247.21	240.26
		SD	23.17	25.34	26.30	25.92	33.47	30.50
	Excellent students	M	245.52	245.15	245.02	237.99	246.00	247.48
		SD	25.51	25.34	21.63	20.22	24.02	23.41
Average Pupil Size (mm)	Students with learning challenge	M	846.28	847.06	820.08	785.80	840.81	830.97
		SD	229.02	233.17	213.73	234.81	246.15	245.87
	Excellent students	M	978.42	993.38	941.52	969.23	943.47	957.88
		SD	202.60	192.59	177.75	194.57	196.55	159.18

3.2 Index Analysis

Three-factor mixed ANOVA was performed for each of the four dependent variable indicators in 2 (Students types: Excellent students, Students with learning challenge) × (Article genre: Narrative, Expository Article, Argumentative Article) × (Theme familiarity: Familiar, Unfamiliar)

Fixation Count

Fixation Count refers to the number of fixations on the processed text, that is, the number of fixation points, which can reflect the individual's reading ability and the cognitive processing load presented by the reading materials (Yan et al., 2013). This indicator can visually detect the frequency of skipping when reading the full text, for example, when the text content is less difficult for the individual to read, the individual tends to skim roughly, so there are fewer fixation points.

Three-factor mixed ANOVA was performed on the fixation count. The main effect of the article genre is significant, F (2,36) =17.649, p <0.001, ηp^2=0.495, indicating that fixation counts in the narrative(p=0.004) and explanatory article(p<0.01) are significantly less than the argumentative article. The main effect of student type was significant, F (1,18) =21.260, p <0.001, and ηp^2=0.542. The results reveal that fixation count of students with learning challenge is more than that of excellent students. The main effect of theme familiarity was significant, F(1,18) =29.230, p<0.001, ηp^2=0.619. The results show that individuals had significantly fewer fixation counts on theme-familiar article than theme-unfamiliar ones.

Fixation Duration

Fixation Duration, the time it takes an individual to complete a task, reflecting the time required to familiarize themselves with the task, process reading the text to solve the task, propose solutions, and react(Lee, 2020).This indicator records the entire process from the presentation of the stimulus to the response, and the time is controlled by the participant. This indicator can be used to read the coding and processing process in depth, reflecting the speed of individual word meaning extraction (Cui et al., 2020) and sensitivity to cognitive processing (Yan et al., 2013).

A three-way mixed ANOVA was performed for the fixation duration. The main effect of the article genre is significant, F(2, 36)=23.979, p < 0.001, ηp^2=0.571, indicating that the fixation duration on narrative article (p < 0.001) and explanatory article(p < 0.01) are significantly shorter than that on the argumentative article. The difference between narrative and expository article is not significant.

The main effect of student type was significant, F(1, 18)=25.159, p < 0.001, ηp2=0.583. The result showed that compared with the excellent students, students with learning challenge need more time in reading English texts. This result showed that compared with the excellent students,

the students with learning challenge tended to read repeatedly, verbatim and carefully in order to achieve understanding and mastery of the content of the texts. Topic familiarity has a significant main effect on fixation duration, F(1,18)=27.695, $p < 0.001$, $\eta p2$=0.606, individuals spends more time reading at English passages with unfamiliar topics than with familiar topics.

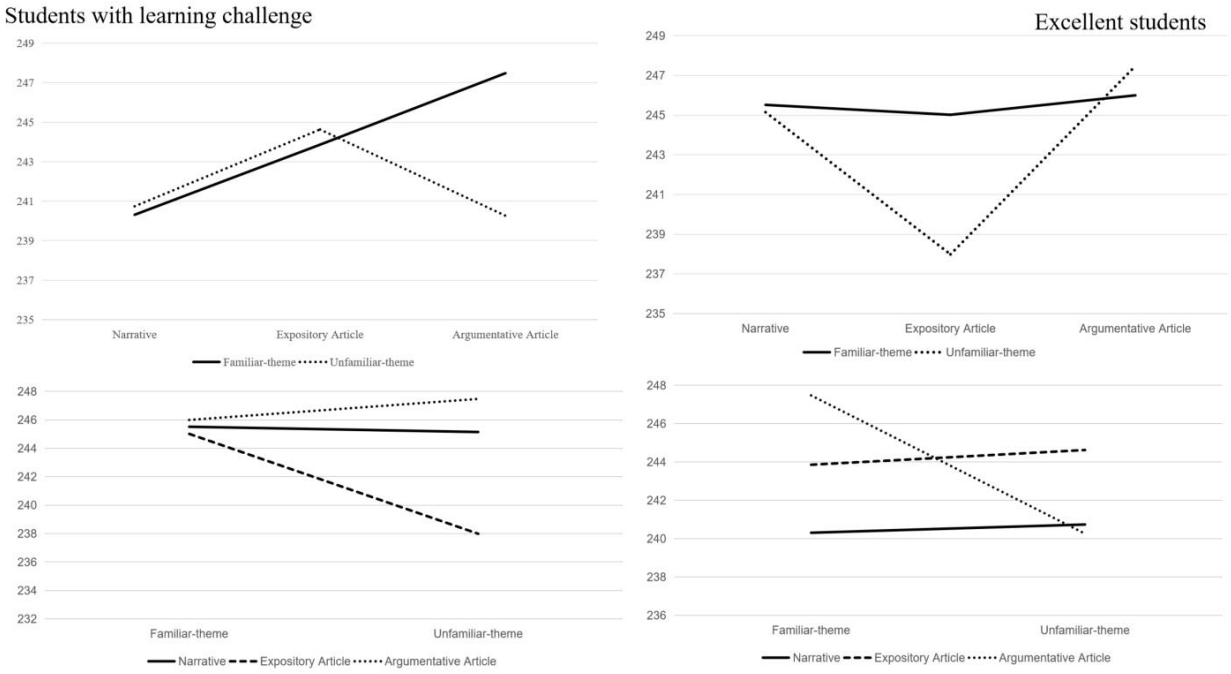
At the same time, it also proves that unfamiliar-theme texts bring more difficult background knowledge to read and process, and they need to process the texts more carefully when reading. The articles with a higher theme familiarity are closer to the real-life scenarios. Therefore, in the reading process, the participants can extract the "schema" that has been stored in their minds more quickly and comprehensively, that is, the prior knowledge, so that in the process of reading, the reading time on the discourse with high topic familiarity is shorter than that with low topic familiarity.

Average Fixation Duration

Average fixation duration is computed by the ratio of fixation duration to fixations duration, which represents the average difficulty of processing each fixation point on the reading text. Factors such as the reader's reading skills can affect the average fixation time; When the reading material makes the reading process more difficult, they tend to invest more cognitive processing resources to complete the passage, and the average fixation duration collected by the eye tracking device will be higher.

A three-way mixed ANOVA was performed for the average fixation duration. The main effect of theme familiarity is significant, $F(1, 18)=4.660$, $p=0.045$, $\eta p^2=0.206$, the average fixation duration on familiar-theme articles was significantly higher than that on unfamiliar -theme articles.

The interaction between student type, article genre and theme familiarity was significant, $F(2, 36)=3.755$, $p=0.033$, $\eta p^2=0.173$(Shown as Figure 2). Further simple effect analysis shows that for the same genre, there is a significant difference in the average fixation duration of students with learning challenge in familiar-theme argumentative articles and unfamiliar-theme argumentative articles, $F(1, 18)=7.329$, $p=0.014$, $\eta p^2=0.070$, which supported that the average processing depth of familiar-theme argumentative articles was significantly higher than that of unfamiliar-theme argumentative essays. There was a significant difference in the average fixation duration between the familiar-theme expository articles and the unfamiliar-theme expository texts, $F(1, 18)=5.229$, $p=0.035$, $\eta p^2=0.225$, that supported that the average processing depth of familiar-theme expository articles was significantly higher than that on unfamiliar-theme expository articles; In the case of consistent theme familiarity, there was a significant difference in the average fixation duration between the unfamiliar-theme narrative and expository articles, $F(2, 17)=3.257$, $p=0.017$, $\eta p^2=0.277$, it indicated that the average processing depth of the unfamiliar-theme expository essay was significantly higher than that of unfamiliar-theme narrative; There was a significant difference in the average fixation duration between the unfamiliar-theme narrative and the unfamiliar-theme expository essay, $F(2, 17)=4.277$, $p=0.036$, $\eta p^2=0.335$. The average processing depth of the unfamiliar-theme narrative of the excellent students was significantly higher than that of the unfamiliar-theme expository text. There was a significant difference in the average fixation duration between the unfamiliar-theme expository essays and the unfamiliar-theme argumentative essays, $F(2, 17)=4.277$, $p=0.011$, $\eta p^2=0.335$. The results show that the average processing depth of the unfamiliar-theme argumentative essay is significantly higher than that of unfamiliar-theme expository essays.



Fixation Count	*SS*	*df*	*MS*	*F*	*p*	η_p^2
Article Genre	277879.150	2	1389395.575	17.649	< 0.001	0.495
Theme Familiarity	403216.133	1	403216.133	29.230	< 0.001	0.619
Students Types	546816.133	1	5468162.133	21.260	< 0.001	0.542
Article Genre*Theme Familiarity	76848.117	2	38424.058	3.105	0.057	0.147
Article Genre*Students Types	287720	2	143860.	1.82	0.1	0.0

Figure 2: Interaction Effect of Student Type, Essay Genre and Topic Familiarity

Mean Pupils Size

Mean Pupil Size, refers to the average value of an individual' s pupil diameter during the reading process, which can reflect the cognitive load of the individual in the process of processing and coding. Pillai(2020) believe that in eye tracking experiments, measuring pupil diameter is one of the methods to detect an individual's cognitive load. Therefore, the mean pupil size can be used as an indicator to explore whether the fatigue level of the students with learning challenge in the reading process is different from that of excellent students, and on the other hand, it can detect whether the whole experiment will have a negative impact on the reading experience of the subjects, and even cause physical harm.

A three-way mixed ANOVA was performed for mean pupil size. The results showed that there was no significant effect on article genre [$F(2, 36)=2.834$, $p=0.072 > 0.05$], student type [$F(1, 18)=2.164$, $p=0.159 > 0.05$] and interaction effect. The results showed that in this study, the cognitive load of different students in the process of reading processing was not excessive, and it did not affect the physical and mental health.The ANOVA data for each indicator are shown in Table 3.

Table 3 The ANOVA data for each indicator

	.717		358	7	75	92
Theme Familiarity*Students Types	38.533	1	38.533	0.003	0.958	0.000
Students Types*Article Genre*Theme Familiarity	15458.217	2	7729.108	0.625	0.541	0.034
Fixation Duration						
Article Genre	230702234112.600	2	115351117056.300	23.979	< 0.001	0.571
Theme Familiarity	27914667960.208	1	27914667960.208	27.695	< 0.001	0.606
Students Types	469091187062.008	1	469091187062.008	25.159	< 0.001	0.583
Article Genre*Theme Familiarity	3926826880.467	2	1963413440.233	2.166	0.129	0.107
Article Genre*Students Types	17382376844.467	2	8691188422.233	1.807	0.179	0.091
Theme Familiarity*Students Types	64543600.408	1	64543600.408	0.064	0.803	0.003
Students Types*Article Genre*Theme Familiarity	2028961410.467	2	1014480705.233	1.120	0.338	0.059
Average Fixation Duration						
Article Genre	243.318	2	121.659	1.715	0.194	0.087
Theme Familiarity	215.365	1	215.365	4.660	0.045	0.206
Students Types	176.758	1	176.758	0.048	0.829	0.003
Article Genre*Theme Familiarity	4.643	2	2.322	0.050	0.951	0.003
Article Genre*Students Types	479.845	2	239.924	3.382	0.053	0.158
Theme Familiarity*Students Types	14.840	1	14.840	0.321	0.578	0.018
Students Types*Article Genre*Theme Familiarity	347.361	2	173.681	3.755	0.033	0.173
Mean pupil Size						
Article Genre	28097.369	2	14048.684	2.834	0.072	0.136
Theme Familiarity	156.842	1	156.842	0.075	0.788	0.004
Students Types	550667.944	1	550667.944	2.164	0.159	0.107
Article Genre*Theme Familiarity	621.724	2	310.862	0.169	0.845	0.009
Article Genre*Students Types	7297.158	2	3648.579	0.736	0.486	0.039
Theme Familiarity*Students Types	8404.317	1	8404.317	4.011	0.060	0.182
Students Types*Article Genre*Theme Familiarity	3177.876	2	1588.938	0.862	0.431	0.046

4. Discussion

In this study, six articles with different types and theme familiarity are adopted. After controlling the difficulty of the article, words number and the font size of the article, the normal reading environment was simulated to explore the reading difference between students with learning challenge and excellent students.

Results showed that fixation counts and fixation duration of students with learning challenge in the reading process are significantly higher than those of excellent students, that is, the students with learning challenge show greater difficulty in reading processing and need more reading time to figure out the main content of the article (Jung, 2018). Therefore, compare with excellent students, those have learning challenge have slow reading speed and longer reading processing

duration. A study has found that when students adopt more reading strategies in the process of reading and learning English, their English reading scores and English subject rankings will be significantly improved while improving their reading efficiency (Pulido, 2010). They supported the idea that it is of great significance to cultivate the discourse analysis ability and English reading strategy of students with learning challenge to narrow the gap in English reading with excellent students and improve the reading ability of them(Carver, 1992).

The genre and structure of the essay are the foundation of reading comprehension, and different essay genres have different structures and presentations. Narrative essays mostly follow a certain narrative logic, mainly to remember people, narratives, scenes, etc., which is a genre form that describes the experiences of characters and the development and change of things.When reading discourse in the narrative genre, the individual needs to have a comprehensive grasp of the content of the discourse in order to search for valid information. Expository essay is used to illustrate the functional state of things, or to clarify the truth of a genre form, the content of expository essays is mostly strictly scientific, organized and accurate, and does not require individuals to reason, therefore, when individuals read this kind of discourse, they can use skimming to search and locate the information they need, and the reading efficiency is higher. Unlike narrative essays, which use vivid narratives to indirectly express the author's thoughts and feelings, and unlike expository essays, which focus on introducing or explaining the functional state of things, argumentative essays are a form of genre that expresses opinions and puts forward propositions by discussing facts. There are clear arguments and sufficient arguments in the content of the argumentative essay. Argumentative discourse puts forward higher requirements for the individual's reading process, and when reading such discourse, individuals not only need to cognitively process the entire text, but also need to reason about the author's arguments, and if necessary, they also need to put forward their personal opinions. Previous studies have also pointed out that individuals with low reading level have less reasoning ability and reasoning times in reading than their peers(Leeser, 2010). Therefore, this type of discourse genre is more difficult to read, and will put forward higher requirements for individual reading ability.

Theme familiarity(Panico & Healey, 2009), i.e., the reader's background knowledge related to the topic and content of the discourse, influencing the reader's reading comprehension process(Carrell, 1983). Familiar theme or rich background knowledge help readers improve their understanding of the discourse and have a positive impact on their discourse reasoning (Atef-Vahid et al. 2013). The results of this study also confirm it, and the different level of theme familiarity brings differences in higher coding difficulty, longer reading speed and bigger processing depth to students with learning challenge. Compared with the familiar-theme articles, the reading performance of students on unfamiliar-theme is reflected in the slower processing speed, more reading time required, and higher processing depth; At the same time, students with learning challenge can read and process faster on familiar-theme articles. Finally, there was no difference in the mean pupil size of the participants, so in this study, the experiment did not cause the participants to experience cognitive processing or fatigue.

Previous studies have shown that individuals have a deeper understanding of articles with more specific topics (Zhang et al, 2019), however, others have pointed out that textual content with low theme familiarity stimulates individuals to read more deeply (Gu &Chen, 2020). In this study, by introducing the variable of topic familiarity, it was found that there was a difference in reading processing depth of students with learning challenge only in argumentative articles with different topic familiarity, and those of excellent students in expository articles with different topic familiarity. Above all, the results of this study suggest that theme familiarity in different essay genres has different effects on the reading processing depth of students with different English

proficiency levels(Freed & Long, 2017).

The reason for this phenomenon is that argumentative essays is usually to put forward arguments and discuss, so when the reading materials are more familiar to students, students with learning challenge tend to carry out in-depth reading and processing of argumentative essays to match the cognitive experience in their minds. This result supported that familiar theme bring greater interest to students with l learning challenge, so students with learning challenge should choose appropriate reading materials to improve their English reading ability. In addition, expository texts tend to describe the details of the textual content, while narrative essays have clear structural forms, such as background and plot, so when students with learning challenge read and process expository texts and narrative texts which have unfamiliar theme, they tend to read them more deeply and carefully to improve their grasp and understanding of the details.

Based on the above experimental results, the gap between students with learning challenge and excellent students in English reading can be narrowed through targeted guidance, and the English reading ability and English reading performance of students with learning challenge can be improved. In order to achieve it, we can start from the following aspects.

Overcoming the fear of difficulties is a top priority, they'd better change the learning attitude, building proper reading habit and cultivated self-confidence in learning English, they can reverse the poor situation of English learning.

Second, based on article genre and theme familiarity, they should choose appropriate reading materials to improve the reading level. It is necessary to pay attention to following the principle of going from easy to difficult, step by step, choose familiar-theme expository genres which has low reading difficulty and articles on familiar topics to cultivate reading habits, and then choose reading materials with a variety of forms and a wide range of content as the reading level continues to improve, so as to improve reading ability. Choose the proper reading materials, for example, expository articles with low reading difficulty and familiar-theme articles to cultivate reading habits, and then read a variety of forms and a wide range of content as the reading level continues to improve, so as to improve reading ability.

This experiment provides data support for promoting the improvement of reading ability of students with academic difficulties, narrowing the gap between them and gifted students, and reversing poor English learning.

5. Conclusion and Suggestion

This experiment provides data support for promoting the improvement of reading ability of students with learning challenge, narrowing the gap between them and excellent students, and reversing their poor English learning. The results of the experiment support that students with learning challenge should choose appropriate reading materials according to the reading characteristics of the discourse with which they are familiar with different topics. On the one hand, with the increase of reading, the breadth of background knowledge of students with learning challenge continues to expand and their reading performance continues to improve in the process of reading, thereby promoting the improvement of their reading ability. On the other hand, in the future reading, if they encounter the topics that they are already familiar with in their daily accumulation, the reading self-confidence of students with learning difficulties can be greatly improve.

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