

## **A Genre-based Approach to Teaching Descriptive Report Writing to Japanese EFL University Students**

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### **Abstract**

This mixed-methods study explored the effects of employing a genre-based approach (GBA) to descriptive report writing on the understanding of text structure and ideational, interpersonal and textual meanings among Japanese university students of English as a Foreign Language (EFL) over a 15-week course divided into three units. Applied within a systemic functional linguistics (SFL) framework, the GBA allowed micro- and macro-analyses of essays from 23 first-year university students with low/high proficiency in English and limited/extensive second-language writing experience. Quantitative analysis collected general impression scores from all students' essays at three time points using the SFL rubric. Qualitative investigation applied clause structure annotations to identify and analyse the functional parts of the clause from three metafunctional perspectives—ideational, interpersonal and textual—on descriptive genre essays by EFL learners. Lower-proficiency and novice EFL students demonstrated an improved understanding of the content, events and background information of the essay topics (ideational), and the social and power relationships between readers and writers (interpersonal). By comparison, high-proficiency and experienced students demonstrated a better understanding of the structure and coherence of the essay. This study was limited in developing an understanding of the use of pronouns and auxiliary verbs, which should be addressed in future studies.

**Keywords:** descriptive report writing, second language (L2) writing, genre-based approach, systemic functional linguistics, SFL metafunctions, Japan, higher education

Writing is a key communication skill for second language (L2) learners (Simin & Tavangar, 2009). In particular, language skills related to writing proficiency are crucial for academic success (Javadi-Safa, 2018), while limited writing skills may jeopardise it (Tan, 2011).

In this study, a systemic functional linguistics (SFL) genre-based approach (GBA) was introduced to study L2 writing in two learning communities. It was hypothesised that SFL

GBA-based L2 writing instructional methods and teaching plans would help learners write effectively in English at the lexico-grammatical, sentence and whole-text, levels (Halliday, 1994). Further, pre-, post- and delayed post-test analyses were conducted using an SFL rubric to examine changes in learners' scores with regard to the understanding of the features of descriptive reports on genre texts over a 15-week course taught by the author.

Two research questions (RQs) guided this mixed-methods study:

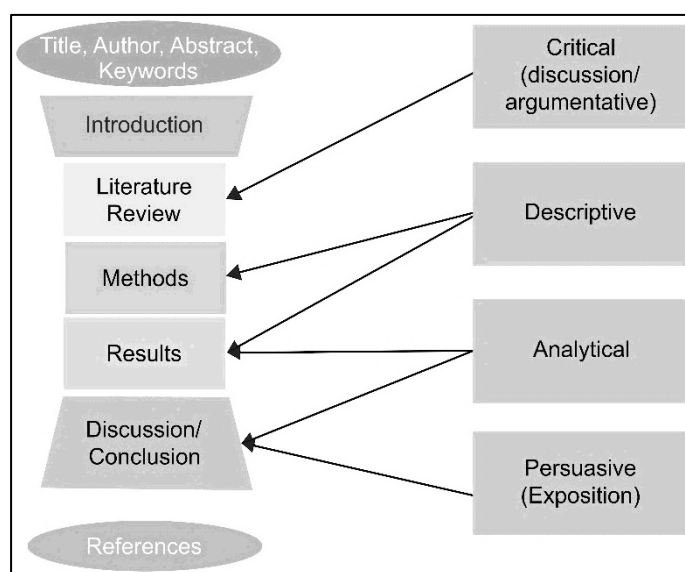
(RQ1) How does the descriptive genre writing of EFL learners change due to GBA SFL instructions?

(RQ2) How does this change differ based on learners' English proficiency?

## Literature Review

### Academic Writing

Each of the four main genres of academic writing—persuasive (exposition [analytical and hortatory]), critical (discussion), analytical and descriptive (University of Sydney, 2021)—contains different writing styles, as evidenced by the text's purpose and structure, as well as the use of lexico-grammatical features (Halliday, 1994). An empirical thesis comprises critical writing in the literature review, description in the methods section, descriptive and analytical writing in the results section, and analytical writing in the discussion (University of Sydney, 2021; see Figure 1).



*Note.* Source: University of Sydney, 2021.

### Figure 1. Genre and the Academic Report

The descriptive genre provides facts or information and summarises and reports on an investigation, usually in the Methods and Results sections. These sections require reorganising facts and information into categories and describing groups, parts, types or relationships. The persuasive genre is usually deployed in the Discussion and Conclusion sections to present the writer's argument; the critical discussion genre is employed in the Literature Review section (Martin & Rose, 2008; University of Sydney, 2021).

### Challenges in Academic Writing for EFL Learners

University students should learn to read and write academic texts (e.g., essays in the argumentative and expository genres) to acquire critical literacy and information synthesis

skills (Marulanda Ángel & Martínez García , 2017). Higher education demands these skills; however, most EFL learners find it challenging to write essays in English.

Toba et al. (2019) investigated the ability of 52 Indonesian EFL students to write compare-and-contrast essays and found that the lack of transition words, inconsistent composition of point-by-point structures, unstated topic sentences, undeveloped supporting ideas and repetition of ideas/words in concluding paragraphs of essays were challenging for them.

To avoid these problems, learners need both sentence- and whole-text-level skills (Berthoff, 1993). Focusing on the descriptive report genre, this study used an SFL-driven GBA to L2 writing. This method helps learners understand the target genre text at the text, clause and lexico-grammatical levels.

### **Descriptive Report Genre (Definition, Structure and Lexico-grammatical Features)**

Learning to write descriptive reports is essential for university students, as this skill is used in the Methods and Results sections of academic essays and reports (Butt et al., 2000; Knapp & Watkins, 2005; Martin & Rose, 2008). Woodward-Kron (2002) classified 20 essays (including expositions, discussions and descriptive reports) written by Australian undergraduate students. One feature of descriptive reports is the classification and description of phenomena, which is frequently used in the social sciences and humanities (Rose, 2007). Watanabe (2016) demonstrated that the exposition and personal reflection genres are frequently used in university entrance examinations and practised in high schools in Japan; however, descriptive reports are used less frequently in high schools, despite students being expected to master them at university. Therefore, exploration of the descriptive report genre is meaningful.

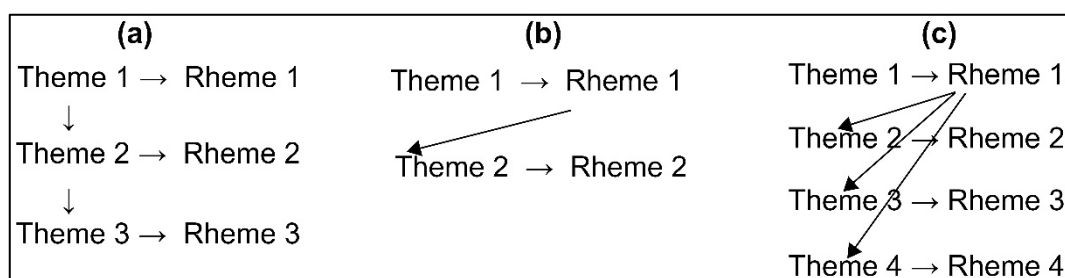
This study focused on the structural and linguistic features of descriptive reports (see Table 1), which commonly include the classification of the entity (first paragraph), description type 1 (second paragraph), description type 2 (third paragraph) and description type 3 (fourth paragraph; Martin & Rose, 2008). In paragraphs 2–4, writers describe one feature of their essay topic, such as the appearance, behaviour, habit, location, populations and functions of the entity (Martin & Rose, 2008). For example, if the essay topic is ‘the human heart,’ writers may discuss the human heart’s appearance in the second paragraph and its weight in the third paragraph. The writer determines the content of each paragraph. The lexico-grammatical features of descriptive reports include linking verbs or relational processes (e.g. ‘is’, ‘are’, ‘has’, ‘have’ and ‘belongs to’), mental verbs or mental processes to describe feelings, general impersonal nouns, minimal use of auxiliary verbs and avoidance of chronological descriptions (e.g. ‘first’, ‘second’ and ‘third’; Derewianka & Primary English Teaching Association, 1990; Emilia & Hamied, 2015; Knapp & Watkins, 2005; Martin & Rose, 2008). Theme development, which can be identified from the Theme reiteration pattern, is another important feature of writing regarding the improvement of the coherence and cohesion of the whole text.

**Table 1. Criteria for Assessing Students' Descriptive Reports**

| No. | Categories            | Assessment details   |
|-----|-----------------------|--|
| 1   | Genre                 | The first paragraph of the essay is titled 'General Classification'. Here, learners provide general information and an overview of the essay topic (e.g., 'objects' or 'building'). In subsequent paragraphs, learners describe the characteristics (e.g., 'exceptional view', 'quality', 'function', 'weight' and 'appearance') of the topic. Each paragraph should describe only a single feature. |
| 2   | Ideational meaning    | Use of general non-personal nouns.   |
| 3   |                       | Use of a relational process (e.g., 'is', 'has' or 'belongs to') to classify and describe the appearance or qualities and parts or functions of the participant.  |
| 4   |                       | Use of mental-state verbs to indicate how the object is perceived (e.g., 'Swimming is permitted in the rock pools').   |
| 5   | Interpersonal meaning | Minimal auxiliary verb use.  |
| 6   |                       | Properly-written citation data (direct and indirect quotations, as well as source data).   |
| 7   |                       | Avoidance of personal pronouns (e.g., 'I', 'you' and 'we').  |
| 8   | Textual meaning       | Avoidance of chronological descriptions (e.g., 'first', 'second' or 'third') that are unnecessary in the genre.  |
| 9   |                       | Use of demonstrative pronouns (e.g., 'it' or 'they').  |
| 10  |                       | Theme development related to cohesion, including Theme reiteration pattern, zig-zag linear Theme pattern and multiple Theme/split Rheme.   |

Note. Source: Adapted from Burns et al. (1996), Butt et al. (2000), Knapp and Watkins (2005), Martin and Rose (2008), Nagao (2018, 2019, 2020) and Pessoa et al. (2018).

'Theme development' is an important feature of writing that improves text coherence and cohesion. The theme can be identified through 'Theme' reiteration patterns. Patterns can be (a) linear, (b) zig-zag linear, or (c) multiple Theme/split Rheme (Halliday, 1994; Figure 2). According to Halliday (1994), Theme elements appear first in the clause (sentence), while the Rheme parts usually contain new information. For example, in 'This building was established in 2020,' 'This building' features the Theme, whereas 'established in 2020' is the Rheme. (a) A linear Theme pattern signifies that keywords related to the essay topic in the Theme are repeated at the beginning of the next sentence. (b) A zig-zag linear Theme pattern denotes that some words in the Rheme of one sentence are repeated in the Theme of the following sentence. Finally, (c) a multiple Theme signifies that some words in the Rheme appear in the Theme parts of subsequent sentences (Halliday, 1994).



**Figure 2. (a) Linear Theme Pattern; (b) Zig-zag Linear Theme Pattern; (c) Multiple Theme (Split Rheme Pattern)**

*Note.* Source: Adapted from Clegg and Wheeler (1991), Eggins (2005), Martin and Rothery (1986), Paltridge and Burton (2000).

### Genre and Systemic Functional Linguistics

Writing teachers in all disciplines assume that learning to write a genre is similar to writing a text in general; in other words, they recognise the need to practice writing texts in a particular genre (Devitt, 2015). In Devitt's (2015) study, students were asked to compare several genre-text examples and identify differences in their structures and lexico-grammatical features. Simply asking students to discuss these differences can teach them about genre performance and improve their genre competence (Devitt, 2015).

Learning a language involves mastering structures and conceiving language in terms of context and social purpose, rather than as a set of vocabularies and structures (Halliday, 1994). Moreover, people consciously and unconsciously choose words and grammatical patterns to create different texts. In SFL, language is analysed in terms of layers, including context, semantics and lexico-grammatical layers (Halliday, 1994).

1. The context layer relates to three aspects of the text: field (*what is written about*), tenor (*the relationship between readers and writers*) and mode (*channel of communication*) (Halliday, 1994).
2. The three components of the semantics layer are ideational, interpersonal and textual meanings (Halliday, 1994).
3. The lexico-grammatical layer comprises ideational, interpersonal and textual meanings. Ideational metafunctions are related to tenses, participants, processes and circumstances; interpersonal metafunctions comprise vocabularies related to politeness and modalities; textual metafunctions refer to words that are related to coherence, cohesion, Theme and Rheme (Halliday, 1994).

Genre studies have been conducted primarily within North American New Rhetoric Studies (NR), English for Specific Purposes (ESP) and SFL. The GBA was developed from SFL theory (Halliday, 1994); its application to writing involves the examination of these distinctive features: text purposes, textual elements, rhetorical structures, grammatical patterns and use of lexico-grammatical characteristics (Dirgeyasa, 2015, 2016).

### SFL and GBA Writing Research: Previous Studies

While many ESP-based writing studies have developed the GBA (Henry & Roseberry, 2001; Huang, 2014; Mauludin et al., 2021), GBA studies have not been fully developed in Japan. SFL GBA is applied due to its ability to effectively take language understanding beyond the clause level to the whole-text and discourse levels (Humphrey & Macnaught, 2011). Teachers and researchers have used it to explore and assess learners' essays at the clause, lexico-grammatical resource and whole-text levels (Halliday, 1994), considering the specific genre

involved. Some SFL and GBA writing-related studies that informed this study include the following.

Pessoa et al. (2018) developed three SFL-based workshops exclusively to teach lexicogrammatical resources, such as interpersonal, textual and ideational metafunctions for writing historical arguments. They examined the essays of nine students and divided them into three groups based on their scores on essay 1, an argumentative essay, for each metafunction. Groups 1–3 had high, mid-range and low scores, respectively. Three essays—essay 1 (no intervention), essay 2 (essay data after workshops 1 and 2) and essay 3 (after workshop 3)—were analysed for metafunctions using an SFL rubric adapted for the current study. Pessoa et al. concluded that explicit discipline-specific writing instructions, such as those provided by SFL, help bridge the gap between novice and experienced academic writers. This perspective framed the present study.

Using student texts and interviews, Syarifah and Gunawan (2015) analysed classroom observation data to identify scaffolding processes in SFL GBA writing classes. They concluded that scaffolding led to students' improved writing performance in terms of understanding the social function, schematic structure and language characteristics of the genre.

Cheung (2014) examined the effects of yearlong SFL GBA writing lessons on low-achieving, low-English proficiency students at a Hong Kong secondary school. Students' written argumentative essays were assessed before and after GBA writing lessons using two sets of rubrics. Cheung concluded that a high-support, explicit GBA instructional program could enhance the confidence, abilities and genre-specific knowledge of students with low English proficiency.

In Yasuda's (2015) 15-week study, SFL GBA writing lessons were conducted with university students in Japan. In pre-essay summaries collected before the GBA writing interventions, participants had limited understanding of some vocabulary with interpersonal meanings, such as language resources for reporting others' ideas. However, in the post-essay tasks, some participants used such vocabulary; this implied their increased understanding of lexicogrammatical resources related to some features of interpersonal meaning.

Overall, substantial research on the impact of SFL GBA on the L2 writing, teaching and learning cycle in ESL and EFL has been conducted. However, studies on Japanese EFL students at the university level and approaches to improving their writing in the descriptive report genre are limited. This study aimed to bridge this gap by examining the impact of a specific L2 writing approach on Japanese EFL learners' understanding of the genre.

## **Methodology**

### **Participants**

In total, 36 EFL students in their first year at a Japanese university participated in two classes; however, only 23 submitted complete datasets. The participants majored in international studies and were in two different online classes. Of the 13 EFL learners in the lower-proficiency group, 10 were novices in the GBA writing class (77%), while 3 out of 10 EFL learners (30%) in the higher-proficiency group were novice learners. Learners with limited writing experience using GBA teaching methods (described below) were considered novices. At the beginning of the semester, participants were asked, "Have you studied the descriptive report genre in high school or college in the past (with explanations of the sample text, definition, structure and linguistic features of the genre)?" Learners who answered "no" were designated as novice learners. The lower and higher English proficiency levels in this study were equivalent to the B1 level and the B2–C1 levels in the Common European Framework of Reference for

Languages, respectively. Participants' average age was 18.26 years ( $SD = 0.44$ ). All participants were Japanese. They were required to participate in study-abroad programs in their second year and obtain a minimum score in English proficiency to graduate. Informed written and verbal consent was obtained from all research participants. The study was approved by the ethics board of the institution where the study was conducted.

### **Procedures (Classroom Interventions)**

The study employed a repeated-measure, quasi-experimental design without a control group (Shadish et al., 2002). This study is an extension of the author's previous work (Nagao, 2018, 2019, 2020) in teaching genre writing. It focused on a new target genre and provided additional forms of analysis. Moreover, additional texts in the classroom intervention context were consulted (Caplan, 2017; Cheung, 2014; Pessoa et al., 2018; Syarifah & Gunawan, 2015; Yasuda, 2011, 2015). The classroom interventions for this study are presented in Appendix A. An SFL framework was combined with the GBA and applied during a 15-week online L2 writing course in the second semester of the 2020 academic year at a private Japanese university.

The teaching-learning cycle (TLC; Feez & Joyce, 1998), a core pedagogical feature of GBA, was applied in instructing students to write in the descriptive report genre. Three reports were collected during the semester (see Appendix A for details of the teaching plans). Week 1 (pre-essay; Time 1): Students completed a 60-minute timed writing pre-essay descriptive report task about a building on campus without teacher support. Week 6 (post-essay; Time 2): Students completed a 60-minute report on the human heart. Between Weeks 2 and 5, the students received various types of support for writing the same kind of targeted text. Week 15 (delayed post-essay; Time 3): Students wrote a 60-minute descriptive report on human lungs, without teacher support.

Topics (see Appendix B) were selected because participants were familiar with them in their first language.

### **Data Analysis**

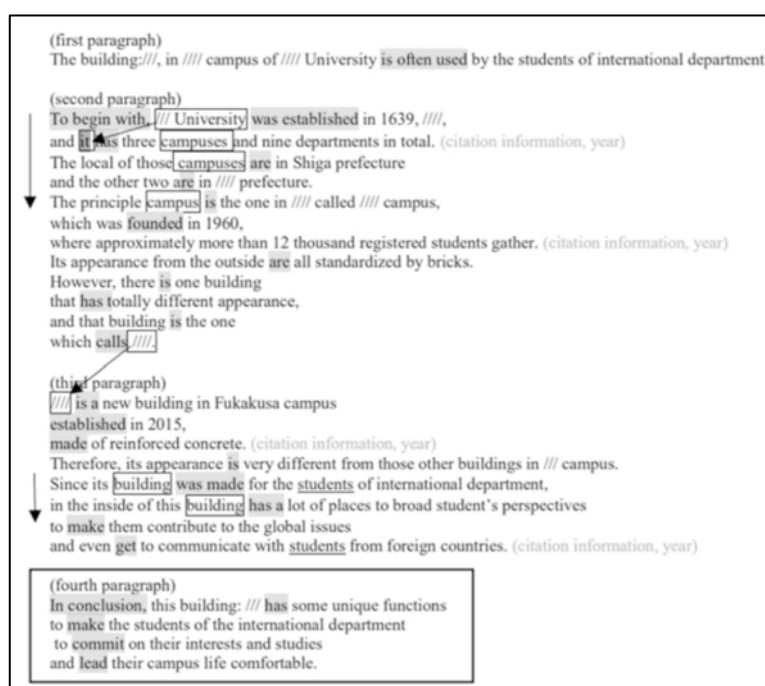
**Phase 1: General impression scoring (G-score): Macro analysis (higher and lower English proficiency groups).** This phase was designed to answer RQ 1. Participants' G-scores were estimated via a macro-analysis of EFL learners' sentence-level language construction. Lexico-grammatical features common in the ideational metafunction ('what is happening' and cultural context) include general impersonal nouns, frequent linking verbs or relational processes (e.g. 'is', 'has' or 'belongs to') and evidence of mental processes. Interpersonal metafunction features (social and power relations among language users) include minimal use of auxiliary verbs, appropriate citations (source data, including direct and indirect quotations) and a basis in objective information. Textual metafunction features (language-oriented; cohesive and coherent elements) include the thesis statement, topic sentences, Theme and Rheme and Theme development. The abovementioned lexico-grammatical features were used to develop the marking rubric, self-assessment tool for learners and learner tasks.

The G-scores for all students' essays (Times 1, 2 and 3) were calculated using the SFL rubric assessment criterion (Burns et al., 1996; Butt et al., 2000; Knapp & Watkins, 2005; Martin & Rose, 2008; Nagao, 2019, 2020) and scores ranging from 0 ('inadequate') to 10 ('outstanding') were assigned to the 10 sections. Table 1 presents the elements used in determining the G-scores. The grader was unaware of which essays were written by students with advanced proficiency. A second round of grading was then conducted, with only basic knowledge of SFL. For quantitative analysis (using SPSS software), a non-normal distribution was assumed, while Friedman's test (a nonparametric test) was applied to evaluate the understanding, lexico-

grammatical choices and prevalence of each linguistic category in texts written by EFL learners with varying writing abilities. The ideational meanings of descriptive reports of the three features—ideational, interpersonal and textual metafunctions—were examined for the use of general impersonal nouns (e.g. ‘buildings’, ‘lungs’ and ‘laptops’), frequent use of relational processes to classify and describe appearance (e.g. ‘is’, ‘are’, ‘has’, ‘belongs to’ and ‘have’) and mental verbs to indicate how the object is perceived (e.g. ‘Swimming is permitted in the rock pools’).

**Phase 2: Micro-analysis of text structure: Ideational, interpersonal and textual meaning (higher- and lower-proficiency groups).** Micro-analyses reveal whether the writer created a unified text at the discourse level. The clause structure was analysed to identify the ideational, interpersonal and textual meaning of the text, with a focus on various types and frequencies of processes (verbs) and Theme development (Figure 3).

Participants were assigned to one of three groups based on their G-scores. In the first group, the delayed post-test (Time 3) scores and pre-essay test (Time 1) scores were similar or demonstrated no improvement. Student 5 was chosen for the micro-text analysis from Group 1 based on the G-scores. The second group displayed an improved score; the delayed post-test scores (Time 3) were much higher than the pre-essay scores (Time 1). Student 12 was chosen from Group 2. In Group 3, G-scores gradually improved throughout the semester (i.e., Time 1 < Time 2 < Time 3). It was insufficient to score the essays written by the English learners to identify what they truly understood and what they did not; therefore, their essays were also annotated. Highlighting the three perspectives of SFL in students’ essays helps us understand English essays written by English learners at the whole-text, clause and lexico-grammatical levels.



**Figure 3. Annotation of a Student's Essay (Example)**

**Phase 3: Differences between novice and experienced groups.** This phase involved examining students’ understanding of the descriptive report genre by identifying trends and differences between the writing of novice learners and that of learners with previous GBA L2 writing experience. Phases 1 and 2 presented results according to learners’ different language skills; Phase 3 presented the comprehension of the essay according to novice or experienced learners.



## Results and Discussion

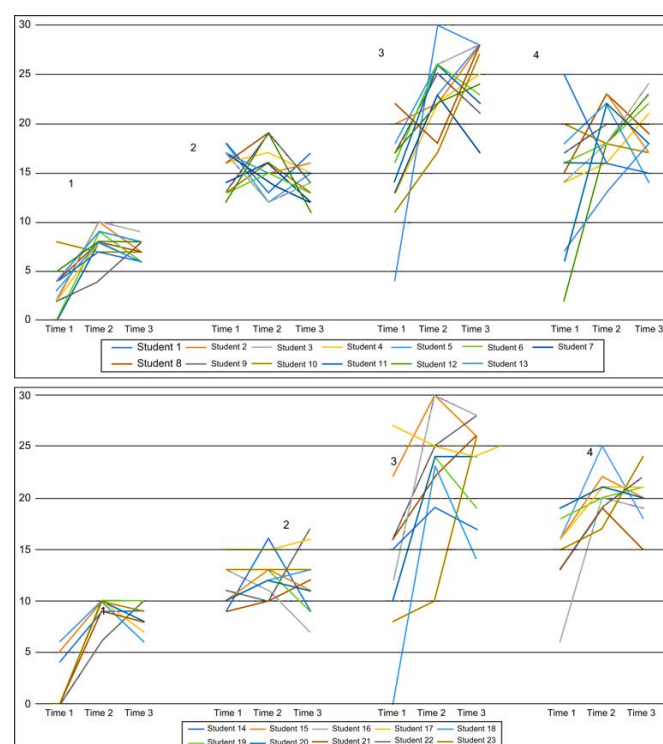
### Phase 1: Macro-Analysis of Results from Higher- and Lower-Proficiency Groups

Since the data had a non-normal distribution, Friedman's test (a nonparametric test) was conducted (Table 2). There were significant differences in G-scores across collection times.

**Table 2. Nonparametric Test Results (Friedman)**

| $\chi^2$ | <i>Df</i> | <i>p</i> |
|----------|-----------|----------|
| 32.35    | 2         | .000     |

EFL learners' use of linguistic features differed significantly across the three time points (see Supplementary Tables S1 and S2). The total scores indicate that participants' understanding of writing in the descriptive report genre gradually improved. A comparison of the mean G-scores of the higher- and lower-proficiency groups across the three time points revealed changes in learners' understanding of how to write descriptive reports (see Figure 4 and Supplementary Table S3).



*Note.* Diagrams 1 and 2 illustrate the lower-proficiency and higher-proficiency groups' results, respectively; 1 = results for generic structure, 2 = ideational meaning, 3 = interpersonal meaning, 4 = textual meaning.

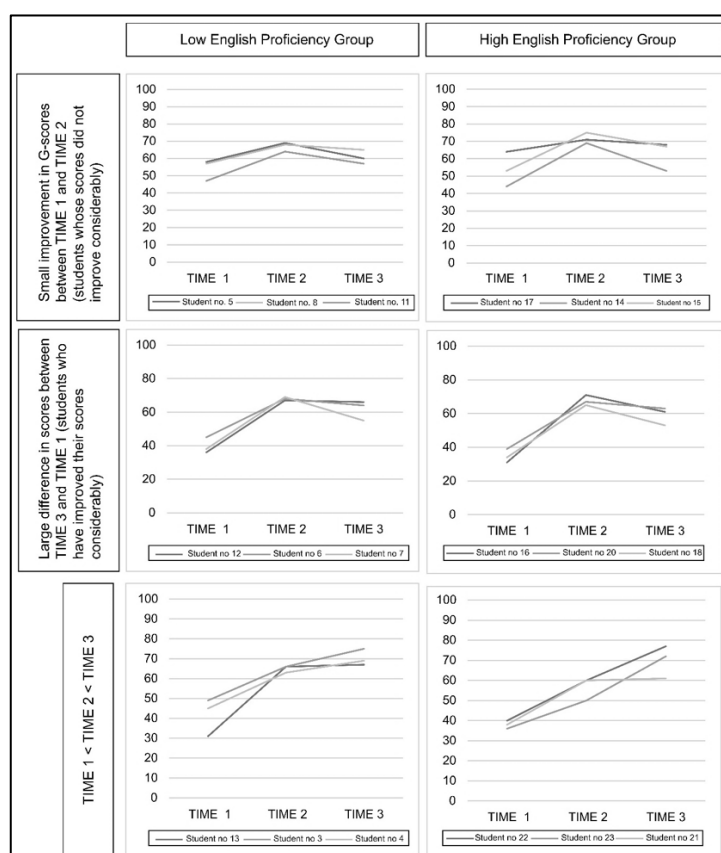
**Figure 4. G-Score Changes Across Times 1–3**

The average G-score for understanding the essay structure for Time 3 was higher for the higher-proficiency group ( $M = 8.4$ ) than for the lower-proficiency group ( $M = 7.4$ ). Similar results were observed in Time 3 for the G-score of textual meaning—the organisation of the text wherein the logical and the interpersonal are bound together coherently (Eggins & Slade, 1997). First, the higher-proficiency group exhibited greater coherence ( $M = 20.0$ ) than the lower-proficiency group ( $M = 18.7$ ) and demonstrated a better understanding of genre report writing. Second, the mean score for ideational meaning (understanding what is happening/background information) was lower ( $M = 13.7$ ) for the lower-proficiency group. The score for interpersonal meaning (understanding social and power relations between readers and writers) was  $M = 24.8$ .

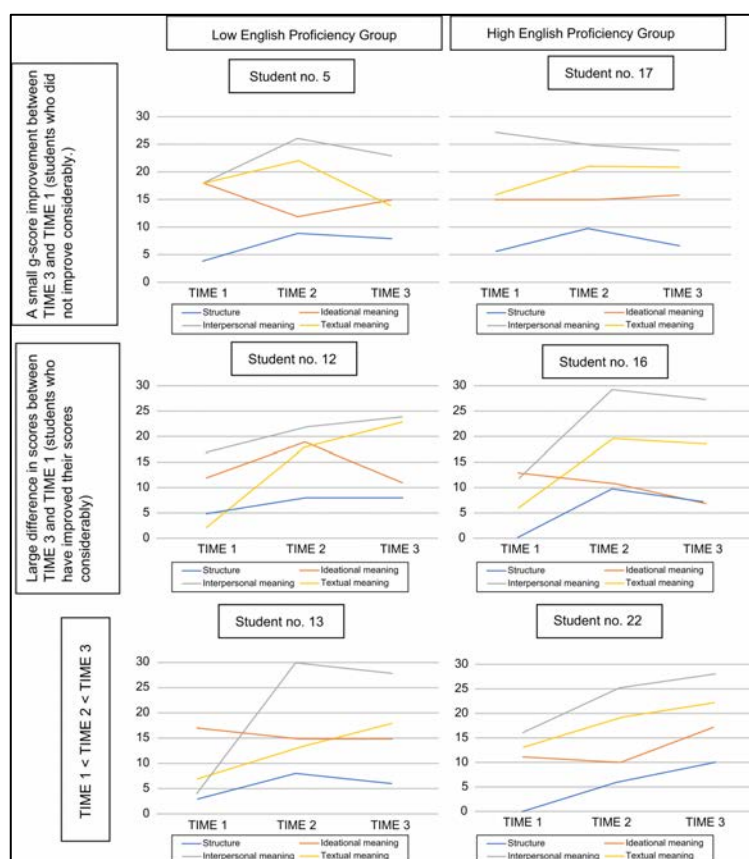
At Time 3, scores on interpersonal meaning (understanding lexico-grammatical features of the target text) were higher for the lower-proficiency group than for the higher-proficiency group.

Participants were then divided into three groups based on their degree of progress. Group 1 included learners whose Time 3 scores were similar to their Time 1 scores, indicating limited progress. Group 2 included learners with a large difference between Time 3 and 1 scores, indicating significant improvement. Group 3 included learners whose G-scores gradually increased across the three times. Figure 4 indicates that most participants followed a similar pattern in terms of their understanding of writing in the target genre. At Time 1, they showed limited understanding, especially of ideational meaning. This was followed by a rapid increase in their understanding of structure and lexico-grammatical features at Time 2, followed by decreased scores at the delayed post-test (Time 3). Seven EFL learners' G-scores increased gradually.

**Generic structure.** Figures 5 and 6 and Supplementary Table S2 illustrate the improvements in the students' understanding of the composition structure of descriptive information texts. At Time 1, the lower- and higher-proficiency groups displayed limited understanding of the structure of the descriptive report genre. The mean score for the lower-proficiency group was 3.15 ( $SD = 2.19$ ), with two students including numerous topics in a single paragraph. The mean score for the higher-proficiency group was 2.1 ( $SD = 2.77$ ), with six students completing only one paragraph (as instructed); some of these paragraphs included inconsistencies between the topic and information. There were also chunks of sentences with no internal coherence or relevance. Some students wrote a conclusion at Time 1, which is unnecessary in descriptive texts. These immature features were absent at Times 2 and 3, as most learners had completed their writing instruction on the structure of the genre.



**Figure 5. Overall G-Score Changes by Proficiency Group**



**Figure 6. Changes in Individual Learners' G-Scores by Proficiency Group**

**Ideational meaning.** Further, descriptive reports were examined for the three ideational meaning features: general impersonal nouns, numerous relational processes to classify and describe appearance (e.g., 'is', 'are', 'has', 'belongs to' and 'have'), as well as mental verbs to indicate how an object is perceived (e.g., 'Swimming is permitted in the rock pools'). Mental processes are features of an activity represented in a language to construe 'our experience of the world of our own consciousness' (Halliday & Matthiessen, 2014, p. 197) and refer to verbs used to indicate that the participant is the feeler, thinker, or perceiver. Particular verbs such as 'know', 'hate', 'like' and 'permit' are related to cognition, perception, emotion and desiderative aspects. A well-developed essay usually contains many terms indicating mental processes (Chan & Shum, 2011).

In terms of changes in ideational meaning, limited variety in the general use of impersonal nouns was observed at Time 1. The mean scores for the lower- and higher-proficiency groups were 6.54 and 4.90, respectively. A few people-related nouns (e.g., 'students' and 'teachers') were used in Time-1 essays; some students used personal pronouns to describe objects (e.g., 'I will talk about...' or 'I use this building...'). The mean scores for the lower- and higher-proficiency groups at Time 3 were 7.23 and 6.80, respectively. Non-human nouns (e.g., 'lungs', 'oxygen circulation', 'breathing', 'organs', 'CO<sub>2</sub> gas', 'rib cage' and 'shape') were also used.

The next feature of ideational meaning is the frequent use of relational processes, such as the verbs 'is', 'are', 'has', 'have' and 'belongs to'. Participants' understanding of this feature was limited, with no significant improvement in either group. The mean scores for the lower-proficiency group at Times 1, 2 and 3 were 6.99, 4.85 and 5.38, respectively; a similar pattern was observed in the higher-proficiency group. Many students had difficulties improving their use of mental process verbs in their essays. The mean scores for the lower- and higher-proficiency groups were repeatedly < 3 points and < 1.5 points, respectively.

Three features of interpersonal meaning were assessed, namely, minimal auxiliary verbs, correct citations and avoidance of personal pronouns. Overall, the mean scores for these features were relatively higher than those for ideational and textual features. During Time 1, the lower-proficiency group used fewer auxiliary verbs ( $M = 6.15$ ), whereas the higher-proficiency group used various auxiliary verbs such as ‘can’ and ‘will’ ( $M = 4.20$ ); for example:

You can see that the building is made from plate glasses, [w]e can feel the lights from the sun. (Student 18; higher proficiency)

At Time 2, most learners avoided auxiliary verbs; the mean scores for the lower- and higher-proficiency groups were 8.00 and 8.30, respectively. During Time 3, their scores were 8.38 and 8.00, respectively.

The second feature of interpersonal meaning is the integration of cited information from reading texts. At Time 1, neither group could cite information appropriately. The mean scores for the lower- and higher-proficiency groups were 0.69 and 1.70, respectively; for example:

*One classroom, which is a 450-capacity classroom, has a booth for simultaneous interpretation and a waiting room for people who want to lecture.* (Student 5, Time 1)

This sentence includes a specific number and presents specific information about the building. However, the information is not correctly cited. In contrast, Time-3 essays had numerous correct citations. The mean scores for the lower- and higher-proficiency groups were 6.69 and 5.90, respectively.

**Textual features.** Finally, three textual features of the descriptive report genre were explored: not using chronological descriptions, using demonstrative pronouns and Theme development.

First, although three students in the lower- and one in the higher-proficiency group used chronological descriptions, by Time 2 and Time 3, most of them understood that such descriptions were not appropriate.

Following this, participants needed to improve their use of demonstrative pronouns. At Time 1, the mean scores for the lower- and higher-proficiency groups were 2.69 and 2.00, respectively. At Time 2, the scores improved marginally; neither group increased demonstrative pronoun use but instead relied on repetition of keywords. For example, Student 11 (Time 2) wrote:

*Line 1: Various animals have a heart...*

*Line 2: and the function of the heart is...*

*Line 3: The heart also has a valve...*

*Line 4: The heart contracts muscles...*

At Time 3, the low and high English proficiency groups’ mean scores increased to 3.31 and 2.80, respectively.

Previous studies found that examining Theme development and Theme-Rheme aids the understanding of the cohesion and coherence of texts (Arunsirot, 2013; Khedri & Ebrahimi, 2012), both of which are essential elements that form text texture (Eggins, 2005; Halliday & Hasan, 1976). Both groups presented gradually improved mean scores over the three time points.

### **Phase 1: Macro-Analysis of Individual Results**

Six learner reports were chosen for macro-analysis to examine changes in EFL learners’ understanding of descriptive report writing, including its structural, ideational, interpersonal

and textual meanings (see Figure 6 and Supplementary Table S4). Students 5 and 17 were extracted from Group 1 (which demonstrated marginal improvement over time), 12 and 16 from Group 2 (which displayed significant improvement over time) and 13 and 22 from Group 3 (which demonstrated gradual improvement over time; Figure 6).

**Structure.** Figure 6 suggests that the students' understanding of the structure of the target genre text was limited during Time 1. In the first report, some learners packed too much information into a single paragraph (e.g., Student 22). Although other learners wrote several paragraphs, they often included many features in one paragraph. Time 3 scores were relatively high, suggesting that the individual learners understood what constitutes an appropriate structure when they wrote the descriptive report. This improvement was observed in both groups.

**Ideational meaning.** Time 3 scores for ideational meaning were lower than those for interpersonal and textual meaning, except for Student 5 (whose score was lower for ideational meaning). This implies that interpersonal meaning may be particularly challenging for EFL learners. Participants used numerous relational processes during Time 1; for example:

Paragraph 1, *Line 2*: *The university has a lot of faculties.*

Paragraph 1, *Line 4*: *The building's colour is almost brown.*

Paragraph 2, *Line 12*: *The scale is seven floors.* (Student 5; low proficiency)

At Time 3, few relational processes were observed.

Paragraph 2, *Line 10*: *At first, the lungs play an important role in breathing* and *Line 12*: *Alveoli works to take oxygen in the blood.* (Student 5; low proficiency)

The results indicate that participants progressed from frequent use of relational processes to other verb types, such as material process verbs. Additionally, mental verbs were problematic for some participants. For example, at Time 3, Student 5 (low proficiency group) used 22 process verbs, but only 1 was a mental process verb.

**Interpersonal meaning.** Students in both groups scored higher for interpersonal meaning than for ideational and textual meaning, suggesting that learners had prior learning experience with some of the lexico-grammatical features of interpersonal meaning.

In summary, during Time 1, EFL learners primarily wrote information related to their own prior knowledge and experiences, even though they were instructed to include relevant cited materials. However, at Times 2 and 3, they summarised and used information from relevant reading materials. Through GBA instruction in L2 writing, students learned how to write objective academic reports. During Time 3, they could cite data and refrain from using personal pronouns.

**Textual meaning.** The efficient use of demonstrative pronouns, a feature of textual meaning, can be challenging for EFL learners. The mean score for this feature was much lower than that for the other two. This limited use of demonstrative pronouns was not correlated to differences in proficiency.

## **Phase 2. Micro-Analysis (Annotated Text Analysis)**

In this section, annotated text analyses of the reports of six learners (see above) at Times 1–3 were conducted using the SFL framework. Figures 7–12 include the annotation codes and annotated texts.

(a) Student no. 5 Time 1

(1<sup>st</sup> paragraph)

The building is a multi-story building. It is made of brick. It is not made of brick. It is called a building.

(2<sup>nd</sup> paragraph)

The building is a multi-story building. It is made of brick. It is not made of brick. It is called a building.

(3<sup>rd</sup> paragraph)

The building is a multi-story building. It is made of brick. It is not made of brick. It is called a building.

(b) Student no. 5 Time 2

Blood circulation system

(1<sup>st</sup> paragraph)

Blood circulation is an essential function to all creatures. The components of system are heart and blood vessels. There are mainly two kind of vessels that are artery and vein. This circulation system carries nutrients and oxygen to the cells and

(2<sup>nd</sup> paragraph)

Blood is a red liquid. It is made of red blood cells and plasma. It is pumped by the heart to all parts of the body. It carries oxygen and nutrients to the cells and

(3<sup>rd</sup> paragraph)

Blood is a red liquid. It is made of red blood cells and plasma. It is pumped by the heart to all parts of the body. It carries oxygen and nutrients to the cells and

(c) Student no. 5 Time 3

(1<sup>st</sup> paragraph)

In general, people need to live without breathing because humans need energy to live. At that time, the existence of lungs that is one of the humans' organs is necessary. In particular, alveoli that is a part of lungs plays an important role in breathing. This essay explores the functions of alveoli and capillaries of lungs.

(2<sup>nd</sup> paragraph)

There are several function in human's organ and lungs also have important function. At first, the lungs play an important role in breathing. And moreover, lungs include alveoli. Alveoli works for taking oxygen in blood. And [IT] discharge carbon dioxide to the air. This exchange is essential for people to maintain their life.

(3<sup>rd</sup> paragraph)

In addition, lungs have several functions. Lungs consist of right lung and left lung, and the total weight is about 1 kg. The color is basically pink, but if people smoke cigarette the color become black.

Note. Annotation codes AAA in yellow highlight is Processes, AAA (\*) is mental processes, auxiliary verbs, pronouns (e.g., *it*, *they*), Letters + ↑ = Theme development, AAA = multiple Theme/split Rheme pattern (Theme development), (citation information, year), AAAAA = nouns related to people, [capital letters] = omission, Chronological descriptions, personal pronouns.

**Figure 7. Text Analysis at Times 1, 2 and 3—Student 5 (Limited Improvement/Lower Proficiency)**

(a) Student no. 17 Time 1

(first paragraph)

The building is in // campus of // University is often used by the students of international department.

(second paragraph)

The building was established in 1639. It is a very old building. It is made of brick. It is not made of brick. It is called a building.

(third paragraph)

The building is a multi-story building. It is made of brick. It is not made of brick. It is called a building.

(b) Student no. 17 Time 2

(first paragraph)

A heart is an organ that pumps blood, which every creature has. Its move called blood circulation system, works in the way that the artery carries the blood out of the heart, and the vein carries it back to the heart. Normally, blood contains some elements called red blood cells and white blood cells. According to the article from // humans also have two circulatory systems, which are connected to each other. Thus, this essay describe about // and // and //.

(second paragraph)

To begin with, // is an organ that plays many roles in our body. It is size is about one fist. It has four chambers: two on right, left and two ventricles on right, left. The oxygenated blood enters of the right atrium and passes through right ventricle. Then, the blood is pumped to the lungs to be exchanged into oxygen. Oxygenated blood goes back to the left atrium through pulmonary vein and into the left ventricle. This process is called systemic circulation.

(third paragraph)

Red blood cells are also important in terms of the blood circulation system. Red blood cells are called erythrocytes. They have enough hemoglobin in their cytoplasm. Hemoglobin is a protein that can combine with oxygen and carbon dioxide molecules. It also combines with carbon monoxide, which is a toxin of smoking carbon monoxide poisoning. It has a tendency of finding carbon monoxide poisoning. Red blood cells are usually bigger than red blood cells, and different in terms of having nucleus. White blood cells have a lot of functions in the body. Approximately, 90 percent of the white blood cells are lymphocytes, 60 percent of the white blood cells are monocytes, and about eight percent are neutrophils. The neutrophils are called granulocytes and eosinophils. However, these two immune functions are still undiscovered.

(fourth paragraph) (conclusion)

The blood circulation system has been maintained due to these three important elements. It is the key to maintain our heart to breath without constantly be conscious to do so.

(c) Student no. 17 Time 3

(first paragraph)

Human lungs are essential for humans to breathe, and even talk. It is because lungs work as a human body's circulatory system. Human lungs have two lungs, in the right and in the left side of the body. Hence, this essay describe about the lungs' location, appearance, and functions.

(second paragraph)

To begin with, human lungs are located in human's chest. According to human anatomy, lungs are like two big, spongy organs that occupy most of the space in the chest. Though, the size of the right lung is bigger than the left lung. The left lung is divided into two lobes, while the right lung is divided into three lobes. Human lungs are protected by rib cage, which is made up of 12 sets of ribs. Although people breathe out their lungs, the movement of their lungs by putting their hands in their chest and breathe in deeply.

(third paragraph)

Additionally, as human lungs are the center of circulatory system, they work. They exchange oxygen during inspiration. Not only inspiration, but also when people breathe out carbon dioxide during expiration. This process is called respiration. In conclusion, this essay has been describing human's lungs location, appearance, and functions, which indicates that lungs play an important role in human body's circulatory system. The system is complex, but without lungs, people will not be able to breathe surely.

Note. Please refer to Annotation codes (A).

**Figure 8. Text Analysis at Times 1, 2 and 3—Student 17 (Limited Improvement/Higher Proficiency)**

(a) Student no. 12 Time 1

(1st paragraph)

/// is the building which is located at the site of /// university.

/// university // campus contains ///.

/// university // campus is the campus which is located at Fushimi district in /// city.

According to the official site of /// university, /// is located at north east of the site.

(2nd paragraph)

Next, there are some information about ///.

First, I /// mention about its appearance.

According to the official site of /// university, /// consists of reinforced concrete steel frame, and many big glass windows are used.

Second, /// looks like very modern and beautiful.

/// contains many lecture rooms.

According to the official site of the /// university, the biggest lecture room is capable to accommodate 450 students.

Also, according to the official site of the /// university, /// was made because /// of international studies /// from the A campus in /// prefecture to B campus.

Therefore, many students who belong to /// of international studies come to /// and taking the lecture or gathering.

(b) Student no. 12 Time 2

The blood circulatory system

(first paragraph)

The human body has a circulatory system and it is necessary for them to survive in this world. If the human body does not have this system, probably it will be no use.

There are several functions that the functions of this system are to carry gases, nutrients, and waste products. The components of this system are the heart, blood, red and white blood cells, and the lymphatic system (citation information, year).

These functions and components are necessary for the human body to keep body condition. In this essay, the details about blood and white blood cells will be described.

(second paragraph)

The heart is one of the important components of a circulatory system. No one does not know that this organ is necessary to keep our circulatory system working.

The human heart is about the size of a clenched fist (citation information, year).

Also, it contains four chambers which are composed of two atria and two ventricles (citation information, year).

Custom information (year, page): the atrium receives the deoxygenated blood from the body, and then, the blood moves into the right ventricle.

From here, the blood is sent to the lungs for oxygenation. After oxygenation, the blood is sent back to the left atrium, then it moves into the left ventricle and is sent to all over the body.

(third paragraph)

Blood is also one of the components of this system. First, blood is not considered as a solid. It is a fluid-shaped cells which are created in the bone marrow, and their cells do not have nuclei, and their cytoplasm is filled with hemoglobin (citation information, year). The main function of them is to carry oxygen atoms and carbon dioxide molecules which are connected strongly with hemoglobin (citation information, year).

(fourth paragraph)

Next, blood is not considered as a solid. It is a fluid-shaped cells which are created in the bone marrow, and their cells do not have nuclei, and their cytoplasm is filled with hemoglobin (citation information, year). The main function of them is to carry oxygen atoms and carbon dioxide molecules which are connected strongly with hemoglobin (citation information, year).

(c) Student no. 12 Time 3

(first paragraph)

The human lungs are one of the most important organs which humans have. It is necessary for humans because our breathing ability cannot work without it. Therefore, it can be said that the human lungs are important for human body.

(second paragraph)

Human lungs are located in human chest and they are arranged in the form of that human lungs interpose the heart (citation information, year). Also, there are tube which is called bronchi and they are connected with two lungs (citation information, year).

(third paragraph)

As usual, adult male human inhale about 400 to 500ml of the air into the lungs when they rest (citation information, year). It indicates that the adult male human inhale about the size of small PET bottles (citation information, year).

(fourth paragraph)

The main function that human lungs have is the exchange of the carbon dioxide and oxygen in those (citation information, year). Also, this exchange is done through film and capillaries of the alveoli in lungs (citation information, year).

Note. Please refer to Annotation codes (A).

**Figure 9. Text Analysis at Times 1, 2 and 3—Student 12 (Significant Improvement Over Time/Lower Proficiency)**

(a) Student no. 16 Time 1

(first paragraph)

/// university has // campus and // campus. This report will describe about /// and its appearance, capacity, functions, and other features.

First, /// campus is located in Fushimi Ward, Kyoto.

Next, /// has the 5th floor to the 2nd basement floor.

There is a study room on the first floor.

There are small classrooms on the second and third floors.

There are laboratories on the 4th and 5th floors.

There is a lecture room in the basement.

Next, /// has a lot of glass walls than concrete wall.

It is an open space because you can see the inside of the building.

Therefore, /// has a lot of floor and open space for students.

(b) Student no. 16 Time 2

Heart and cells in blood

(first paragraph)

Almost all creatures have blood circulation. Human has two kinds of blood circulation. One is body circulation, other is pulmonary circulation. The circulation is caused by the work of the heart. Blood contains red cells, white cells, blood platelet, and blood plasma. This essay will describe the heart, red blood cells, and blood platelets.

(second paragraph)

The heart is divided into four to circulate blood. Custom information (year, page): mentioned that the heart is partitioned into two atria and two ventricles. The deoxygenated blood from the body enters the right atrium (citation information, year). The blood moves to the right ventricle to be pumped as the pulmonary circulation (citation information, year). The blood goes to the lungs to receive oxygen and return to the left atrium (citation information, year). Then it moves to the left ventricle and is sent into the body as body circulation (citation information, year).

(third paragraph)

Red blood cells are contained in the blood carried by the heart. Red blood cells contain Hemoglobin which makes red blood cells red (citation information, year). It receives oxygen atoms and carbon dioxide molecules (citation information, year). Red blood cells have a lifespan of about three months, and old red blood cells are destroyed in the spleen (citation information, year).

(c) Student no. 16 Time 3

(first paragraph)

Breathing is necessary for all creatures. The organ used for breathing is the lungs. Humans take in oxygen and emit carbon dioxide by the action of the lungs. Lungs consist of the windpipe, bronchus, and alveoli. The lungs are surrounded by ribs.

(second paragraph)

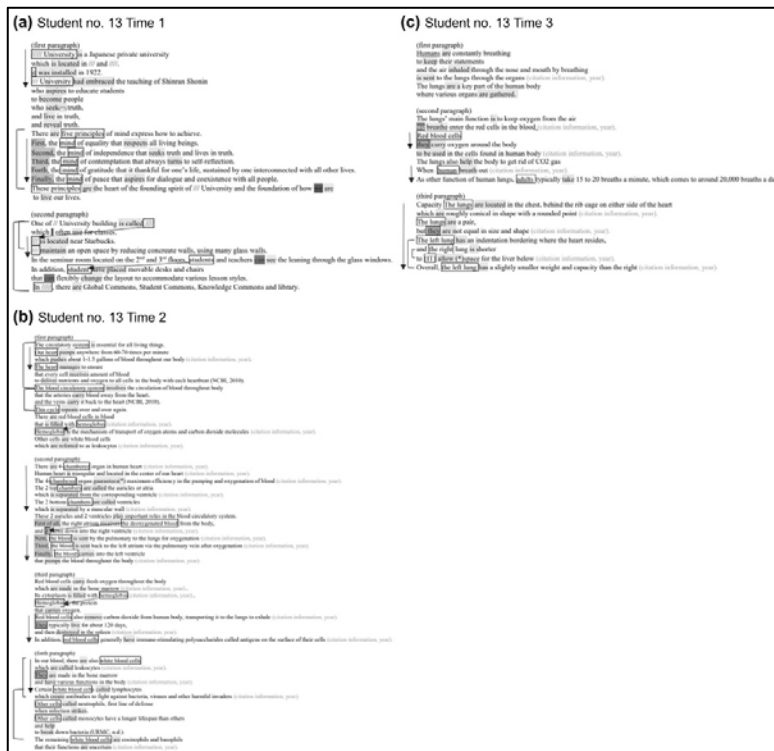
The alveoli have capillaries that look like a mesh. It is said that there are about 300 to 600 million alveoli in the lungs (citation information, year). Custom information (year, page): mentioned that the alveoli are small bags with a diameter of about 0.2 mm.

(third paragraph)

If an adult man breathes once, the amount of air taken in the lungs is about 400 to 500 ml (citation information, year). If elementary school students breathe once, the amount of air is about 200 to 300 ml (citation information, year). At rest, a person breathes about 16 times a minute, so an adult male breathes 6400 to 8000 ml of air per minute, and an elementary school student breathes 3200 to 4800 ml (citation information, year).

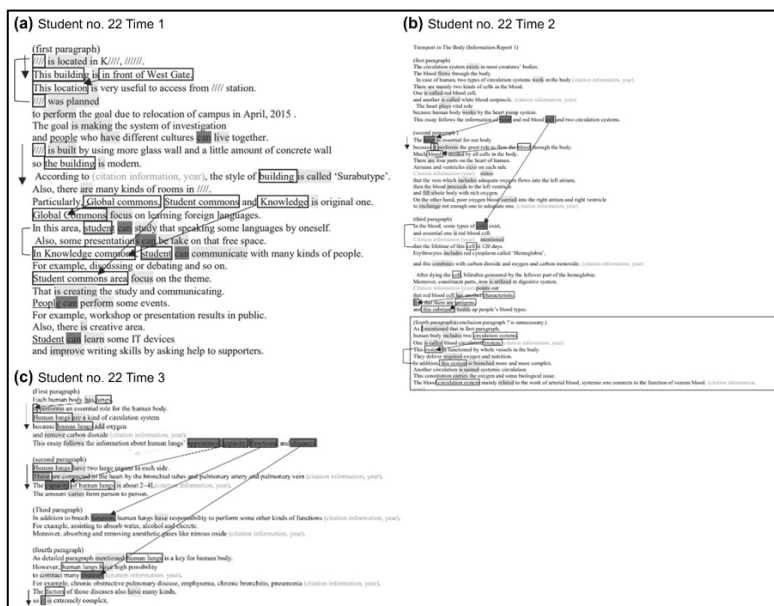
Note. Please refer to Annotation codes (A).

**Figure 10. Text Analysis at Times 1, 2 and 3—Student 16 (Significant Improvement Over Time/Higher Proficiency)**



Note. Please refer to Annotation codes (A).

**Figure 11. Text Analysis at Times 1, 2 and 3—Student 13 (Lower Proficiency)**



Note. Please refer to Annotation codes (A).

**Figure 12. Text Analysis at Times 1, 2 and 3—Student 22 (Higher Proficiency)**

**Students with limited improvement in their understanding of the genre.** A macro-analysis of Student 5 (low proficiency) indicated an improvement in total G-scores from Time 1 to Time 3. An annotated analysis revealed adequate improvement in understanding the coherence and cohesion of the text (textual meaning). At Time 1, Student 5 demonstrated limited cohesion. In cohesive essays, line patterns of Theme and Rheme are usually found throughout. The line pattern, or Theme reiteration pattern, refers to the repetition of keywords and ideas in the first Theme (the part of the sentence before the verb) at the beginning of the subsequent clause. Additionally, a zig-zag linear Theme pattern –evidence of logical development – is found within a single paragraph. This occurs when keywords and ideas from the Rheme of the first



clause become the Theme of the subsequent clause/sentence. A zig-zag linear Theme and linear patterns were observed in Paragraphs 1 and 2 (Time 1) but were fewer at Time 2. Student 5's Time 2 essay illustrated a new feature of coherence: the multiple Theme/split Rheme pattern. The thesis statement of this report was found in the last sentence of Paragraph 1:

*This essay explores the function of the heart, haemoglobin and platelets.*

The three keywords heart, haemoglobin and platelets in the Rheme part of the thesis statement were found in the Theme part of the following paragraphs. For example, the word heart in the last sentence of the first paragraph was linked with the first sentence of the next paragraph, becoming the topic sentence. Additionally, the word haemoglobin in the last sentence of the first paragraph was linked to the topic sentence in the third paragraph. Finally, Student 5's last report (Time 3) had a higher frequency of linear pattern; however, only a few zig-zag patterns were found. Tendencies toward several line patterns in the written text were similar during Times 1 and 3 (see Figure 7).

Student 17 (high proficiency) demonstrated no significant G-score improvement between Times 1 and 3. Theme development changes in the student's texts were similar to those of Student 5. However, Student 17 did not employ an appropriate generic structure. For example, although the descriptive report genre does not require a conclusion, Student 17 provided one in all three reports (See Figure 8).

**Students who demonstrated improved understanding of the genre.** Student 12 (low proficiency) presented many linear patterns at Time 1. Remarkable lexico-grammatical features include the frequent use of relational processes. Further, the student lacked understanding of the textual meaning of the target genre at Times 1 and 2; they did not cite factual information from reading materials and used chronological descriptions. However, at Time 3, relational processes and chronological descriptions were avoided. Limited report writing skills were evident at Time 1 and information was incoherent. The student's Time 2 report, however, is an outstanding example of how to apply the appropriate structure and lexico-grammatical features of the target genre. Subsequently, at Time 3, the student returned to the frequent use of relational processes. Thus, the student's writing skills in this genre was not maintained between Times 2 and 3 (Figure 9).

At Time 1, Student 16 (higher proficiency) applied few features of the genre. Similar to Student 12, their writing skills improved at Time 2 but were not maintained (see Figure 10).

Scores for Student 13 (lower proficiency) gradually increased over the three time points. Complex Theme patterns were not identified in the structure of the first report. Although a linear pattern could be traced in the first paragraph, multiple topics were introduced in one paragraph and multiple Theme/split Rheme patterns were not applied. Further, in terms of lexico-grammatical features, the student used unnecessary linguistic features (e.g. chronological descriptions, auxiliary verbs and personal pronouns), whereas necessary linguistic features (e.g. citation data, demonstrative pronouns and mental verbs) were missing. Overall, the student's G-score was low.

At Time 2, Theme development was linear in the first and second paragraphs. Student 13 applied the essential language resources for the genre, including appropriate relational processes, mental verbs, demonstrative pronouns and citation data. Auxiliary verbs were not used, but chronological descriptive words, which should have been avoided, were used. The total G-score for Student 13 (Time 2) indicates adequate improvement.

At Time 3, Student 13 maintained an understanding of descriptive report writing and demonstrated a significant knowledge of the structural and lexico-grammatical features of the target genre. However, the text did not reveal a zig-zag linear Theme pattern or a multiple

Theme/split Rheme pattern. Understanding of lexico-grammatical features of the descriptive report genre was maintained from Time 2 to Time 3, as demonstrated by the frequent use of relational processes, citation data, demonstrative pronouns, mental verbs and avoidance of auxiliary verbs and chronological descriptions. Overall, the student's G-score improved across the three time points (see Figure 11).

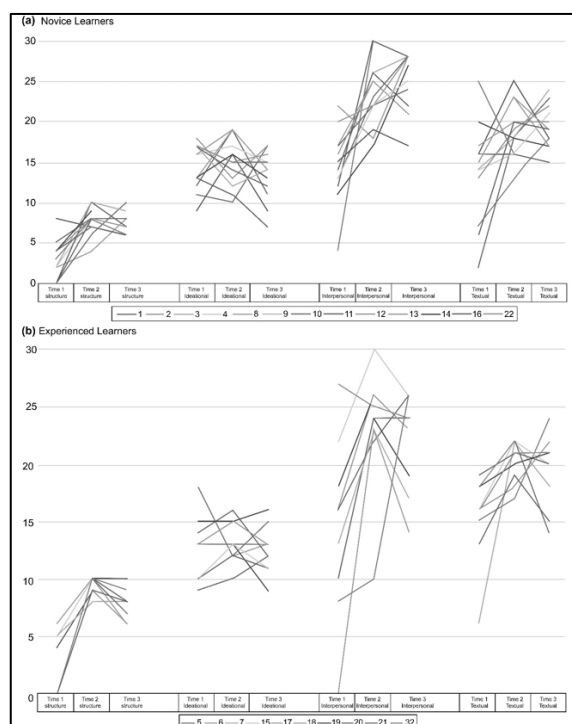
At Time 1, Student 22 (higher proficiency) wrote only one paragraph, which had a Theme reiteration pattern (linear Theme development) and a zig-zag linear Theme pattern. The student used general non-personal nouns and relational processes, which are related to the lexico-grammatical features of the target genre. Chronological features were avoided. However, avoidable features such as auxiliary verbs were identified, while demonstrative pronouns were missing.

During Time 2, Student 22 wrote a four-paragraph report, which was inappropriately structured and included a conclusion, indicating limited improvement. A zig-zag linear Theme pattern and a multiple Theme/split Rheme pattern were identified in the second report. Understanding of the lexico-grammatical features of the descriptive report genre was evident in the use of relational processes, citation of data, demonstrative pronouns and avoidance of auxiliary verbs and chronological descriptions.

The Time 3 report indicated the student's ability to use the zig-zag linear Theme and multiple Theme/split Rheme patterns consistently since Time 2. Similar lexico-grammatical features were identified at Times 2 and 3 (see Figure 12).

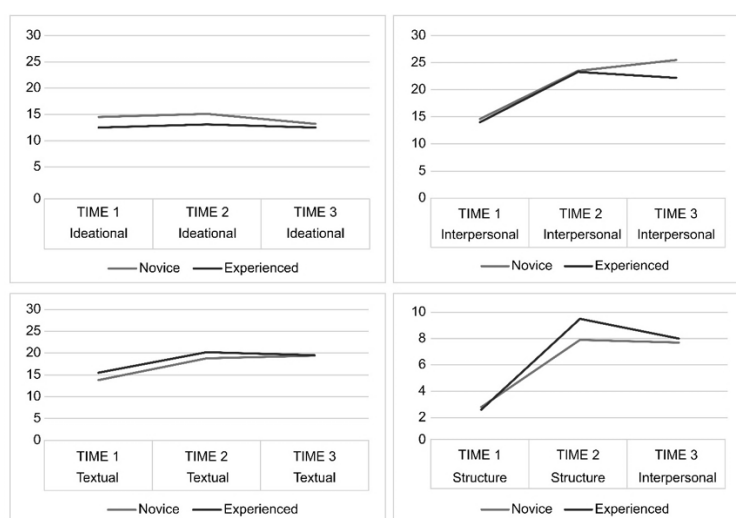
### Phase 3: Differences Between Novice and Experienced Groups

This section analyses the differences and similarities between novice and experienced GBA writers' understanding of the target genre during the GBA writing lessons. The results indicate that, during Time 3, the two groups had a similar understanding of the structural, ideational and textual meaning of the descriptive report. Notably, novice GBA writing learners scored higher in interpersonal meaning than those with prior experience (see Figure 13).



**Figure 13. Difference Between Novice and Experienced Writers: Changes in G-Scores, Essay Structure and Three Metacognitions (Times 1, 2 and 3)**

At Time 1, novice learners' understanding ( $M = 2.8/10$  points) of the target genre structure was slightly higher than that of the expert learners ( $M = 2.6$ ). The mean scores on report structure were higher for the experienced group at Time 2 (9.5) and Time 3 (8.0); the experienced group demonstrated a better understanding of structure (see Figure 14).



**Figure 14. Mean Scores: Novice and Experienced GBA Writers (Times 1, 2 and 3)**

At Time 1, the mean score ( $M = 14.5/30$  points) of novice GBA learners for ideational meaning was higher than the experienced group's score ( $M = 12.5$ ). Overall, their understanding of ideation was weaker than their understanding of the interpersonal and textual meaning metafunctions.

The mean scores for interpersonal meaning were similar for both novice and experienced learners (14.6 and 14.0, respectively) at Time 1. The mean scores for interpersonal meaning increased considerably from Time 1 to Time 2 (23.5 for novices and 23.3 for experienced learners). At Time 3, novice learners scored higher ( $M = 25.5$ ) than experienced learners ( $M = 22.2$ ).

Experienced learners ( $M = 15.5$ ) demonstrated a better understanding of textual meaning than novice learners ( $M = 13.8$ ) at Time 1. At Time 2, experienced learners' mean score was 20.2 and novice learners' mean score was 18.8. Both groups demonstrated limited improvement in understanding textual meaning between Time 2 and Time 3. Novice learners' mean score was 19.4 and experienced learners scored 19.5, almost the same.

In summary, Phases 1 and 2 reveal that the lower-proficiency group and novice GBA L2 writing learners demonstrated similar improvement in their understanding of ideational (e.g. the content and events of the report topic) and interpersonal metafunctions (e.g. the social and power relations between the reader and the writer) (Table 3).

**Table 3. Summary of Changes in EFL Learners' Understanding of Structure and Three Meta functions**

|                              | Structure | Ideational | Interpersona<br>l | Textual |
|------------------------------|-----------|------------|-------------------|---------|
| Lower-proficiency group      |           | ●          | ●                 |         |
| Higher-proficiency group     | ●         |            |                   | ✓       |
| Novice GBA writer group      |           | ✓          | ●                 | ●       |
| Experienced GBA writer group | ●         |            |                   | ●       |

Note. ● = some improvement at Time 3; ✓ = significant improvement at Time 3.

## Conclusion

According to Hyland (2007), the GBA ‘assists students to exploit the expressive potential of society’s discourse structures instead of merely being manipulated by them’ (p. 150). Overall, groups with higher English proficiency and previous GBA writing experience (Table 2) demonstrated similar improvements in their understanding of the descriptive report genre. Results of Phases 1 and 2 suggest that learners in these groups had a deeper understanding of the structure and textual meaning of the genre, inclusive of textual coherence and cohesion.

Phases 1 and 2 also illustrate that the lower-proficiency and novice-learner groups made similar improvements in their understanding of ideational metafunctions (e.g. the content, events and background information of the report topic) and interpersonal meaning. This can be considered in the choice of topics and model texts for deconstruction.

Model texts and writing topics should be selected based on learners’ background knowledge, linguistic ability and motivation (Chaisiri, 2010). The appropriate selection of model texts is crucial for EFL learners to gain confidence in producing a similar text by themselves (Chaisiri, 2010). The same model texts were applied for all students in both groups. The choice of material was effective in the study because the topics were within participants’ learning scope.

Further, the results from Phase 2 at Time 3 indicated that participants’ understanding of ideational metafunctions was stronger than that of interpersonal and textual metafunctions, regardless of proficiency or experience differences among GBA learners. Previous studies have not observed such findings (Nagao, 2019, 2020). Therefore, this study contributes to improving students’ understanding of this metafunction through the GBA. The positive results were influenced by the SFL GBA teaching methods; however, to identify causality, the research approach should be improved.

In Phase 3, an annotated text analysis of the EFL learners’ reports revealed that, in the progression from Time 1 to Time 3, the frequent use of relational processes was a common positive feature in both proficiency groups. This implies that students possess the metacognitive ability to understand the ideational meaning of the writing topic.

Several improvements were noted from Time 1 to Time 3. For example, the use of auxiliary verbs and personal pronouns decreased over the three time points. These lexico-grammatical features are linked to understanding the interpersonal metafunction, that is, the social and power relations between the reader and the writer. This confirms previous studies’ findings (Nagao, 2019, 2020).

Further, improvements in the appropriate use of citations and avoidance of chronological descriptions evidenced participants’ improved understanding of the interpersonal and textual meanings of the genre.

Participants’ comprehension of target genre structures dramatically increased between Time 1 (no intervention) and Time 2 (with rewriting and scaffolding to assess writing accuracy). Their understanding of the comprehension of structure between Time 2 (for accuracy measures) and Time 3 (for language acquisition measures) demonstrated limited improvement. At Time 1, many EFL learners packed their knowledge of the topic into a single paragraph, indicating inadequate understanding of coherence and cohesion within a paragraph. The Theme reiteration and the zig-zag linear Theme patterns identified indicate that participants had the minimum degree of understanding of cohesion at the paragraph level. However, no understanding of coherence at the whole-text level was apparent. At Time 2, a multiple Theme/split Rheme pattern was also observed, indicating cohesion at the whole text level.

However, at Time 3, only paragraph-level cohesion was observed. Thus, EFL teachers should ensure that students retain an understanding of cohesion and coherence.

Few explicit tasks or training related to cohesion were introduced in the classroom interventions in this study. Nevertheless, three features of textual cohesion were identified, namely, Theme reiteration, zig-zag linear Theme and multiple Theme/split Rheme patterns. This increase in participants' understanding of genre structure can be attributed to classroom tasks and scaffolding, such as reading relevant materials, writing summaries of readings and rewriting texts. However, future research should include follow-up interviews to determine relevant specific tasks.

Imai et al. (2019) reported that many countries recognise the importance of genre-compliant instruction. They highlight that 'a coherent sentence is a sentence with multiple sentences and multiple paragraphs'—a concept introduced in the English pedagogy curriculum guideline for high schools in Japan by the Ministry of Education, Culture, Sports, Science and Technology (MEXT) since 2010—is similar to the concept of 'genre' adopted in Australian literacy education. Thus, the concept of genre in English writing is gradually being introduced in high schools in Japan. Moreover, since 2019, in English classes in Japanese higher education, English learners are required to practice both the personal reflection genre (i.e., writing about their personal experiences and feelings in English) and the academic essay genre (i.e. reading material and conveying information in their own words in English; MEXT, 2015, 2021) particularly for multi-paragraph essay writing. This indicates that the specific achievement target for English writing will change from short sentences to coherent English sentences comprising multiple paragraphs (MEXT, 2015, 2021), while the concepts of 'academic essay' and 'genre' will soon become keywords in English education in Japanese high schools and universities. In particular, Imai and Matsuzawa's (2015) SFL GBA classroom-based study conducted in 2013 was the first practical study implementing a GBA to L2 writing with Japanese high school students. As mentioned previously, SFL genre-based classroom studies in Japanese high schools remain limited. Japanese high school students, who have learnt these concepts of genre and how to write paragraphs in English, go on to study at Japanese universities. Further, Yasuda (2011, 2015) examined L2 academic writing using the GBA within the SFL framework for Japanese university students.

According to Kono (2022), each Japanese university and department has its own educational philosophy regarding English learning pedagogy. However, there have been few discussions on (a) the type of English language education that should be provided to university students and (b) how learning achievement goals can be set by the time of graduation (Kono, 2022). Currently, more time is required to construct a research framework for English writing for Japanese university students. Therefore, this study recommends the SFL GBA to L2 writing for Japanese university institutions. Explicit English writing methods, such as the SFL GBA, are effective for some English language learners (Mickan, 2016; Moghaddam, 2016; Unsworth, 2000); this is supported by the findings of the present study. Furthermore, this study found that English language learners who could previously write only two or three sentences in English were able to write complete essays despite the short study period (15 weeks). This is because GBA writing instructions within the SFL framework contribute to EFL learners' understanding of appropriate vocabulary choices within the given contexts and enable their understanding of writing at the sentence and whole-text levels in English (Halliday, 1994).

Although this study has significant implications concerning the link between effective L2 writing and SFL-driven GBA, it also has several limitations. First, the study focused on the changes in EFL learners' understanding of the target genre and their lexico-grammatical choices within a semester-long course; however, previous studies have demonstrated that it

takes at least one year for sustained changes to crystallise (Fullan, 2007). Therefore, a longitudinal in-depth analysis of EFL learners' meaning-making choices is necessary in future research. Second, the EFL learners who participated in this study exhibited sustained improvement only in their understanding of pronoun and auxiliary verb use in report writing. Thus, future research should tailor the training content and reinforcement tasks to the target learning community, focusing on the improvement of writing skills.

Despite these limitations, the findings of this study have significant implications for EFL writing pedagogy. They suggest that explicit L2 writing instruction using SFL, GBA and TLC may help learners gradually construct knowledge. It is important to focus not only on lexicogrammatical features or the sentence level, but also on the whole-text level by combining GBA, TLC and SFL for different learning communities.

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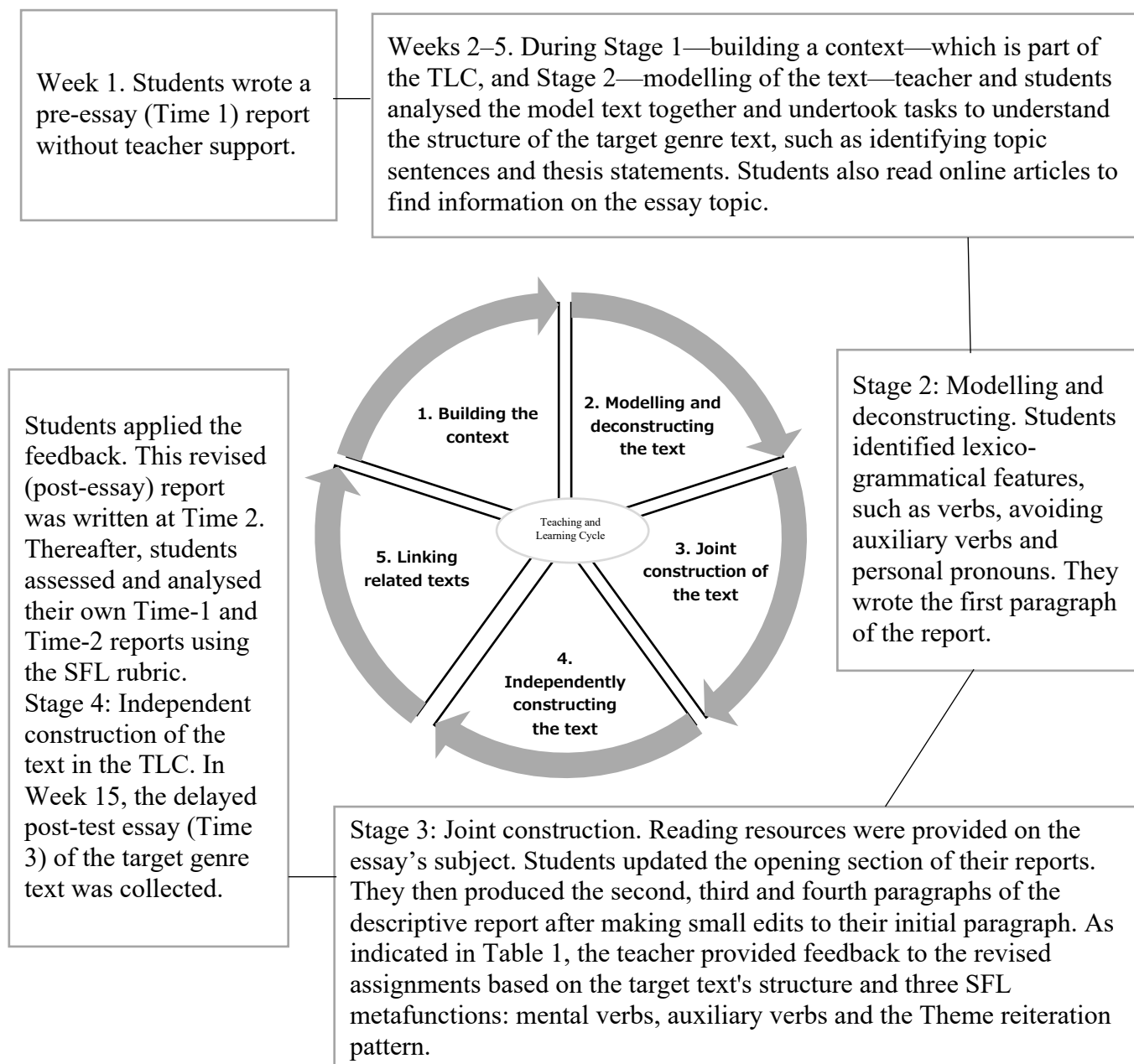


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## Appendix A. Classroom interventions within the teaching and learning cycle (Feez & Joyce, 1998)



## Appendix B. Essay topics

| Timing                                     | Essay topics   |
|--|--|
| Week 1<br>(pre-essay;<br>Time 1)           | Describe Building A, wherein you study on campus. You may include general information about the university and its location and the location of Building A. Further, you may write about the appearance, capacity, functions and other features of Building A. [Instruction (a): Provide supporting evidence/information and do not write based on your personal experience and knowledge; instead, cite information from your reading. Your writing should be between 150 and 250 words.] |
| Week 6<br>(post-essay;<br>Time 2)          | Describe the human heart. Include general information first and then describe the appearance, capacity, functions and other features [Instruction (a) repeated].   |
| Week 15<br>(delayed-test essay;<br>Time 3) | Describe the human lungs. Include general information first and then describe the appearance, capacity, functions and other features [Instruction (a) repeated].   |

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