

ENGLISH LANGUAGE **ASSESSMENT RESEARCH GROUP**

INVESTIGATING THE COGNITIVE CONSTRUCTS MEASURED BY THE APTIS WRITING TEST IN THE JAPANESE CONTEXT: A CASE STUDY

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ABSTRACT

This study investigates the context and cognitive validity of the Aptis General Writing Part 4 Tasks. An online survey with almost 50 Japanese universities was conducted to investigate the nature of the predominant academic writing in the wider context. Twenty-five Year 1 academic writing tasks were then sampled from a single Japanese university. Regarding the context validity of the Aptis test, online survey and expert judgement were used to examine the degree of correspondence between the task features of the Aptis task and those of the target academic writing tasks in real life. Regarding its cognitive validity, this study examined the cognitive processes elicited by the Aptis task as compared to the Year 1 writing tasks through a cognitive process questionnaire (n=35) and interviews with seven students and two lecturers.

The overall resemblance between the test and the real-life tasks reported in this study supports the context and cognitive validity of the Aptis Writing test Part 4 in the Japanese context. The *overall task setting* (topic domain, cognitive demands and language function to be performed) of the Aptis test resembles that of the real-life tasks. Aptis Writing test Part 4 tasks, on the other hand, outperformed the sampled real-life tasks in terms of clarity of writing purpose, knowledge of criteria and intended readerships. However, when considering the wider Japanese academic context, a wider range of academic genres, such as summary and report, and some more demanding language functions such as synthesis, should also be represented in the Aptis Writing test.

The results show that all target processes in each cognitive phase (*conceptualisation*, *meaning and discourse construction*, *organising*, *low-level monitoring and revising*, and *high-level monitoring and revising*) were reported by a reasonable percentage of the participants. Considering the comparatively lower proficiency in English of Japanese students and their unfamiliarity of direct writing assessment, the results are encouraging. However, some sub-processes such as linking important ideas and revising appear to be under-represented in Aptis. In addition, the lack of time management and typing skills of some participants appear to hinder them from spending appropriate time planning, organising, and revising at low and high levels. Recommendations are provided to address these issues.

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1. INTRODUCTION

The Ministry of Education, Culture, Sports, Science and Technology (hereafter MEXT) recently administered English proficiency tests designed by Obunsha Co., Ltd. at 480 randomly chosen public high schools across Japan (MEXT, 2015a). The purpose was to measure final year students' English skills in listening, speaking, reading and writing in Japanese in order to analyse each skill of their English proficiency to improve teachers' pedagogical practices. For each skill section, most of the students (i.e. above 70% for listening and speaking and above 85% for speaking and writing) scored at or below Eiken Grade 3, which is the equivalent to CEFR A1. The results largely fell short of the government's target of Japanese students' English proficiency (MEXT², 2015b). The results also indicate that the students had more difficulties in speaking and writing than the two receptive skills.

One of the international tests of English proficiency most commonly used in Japan is the Test of English for International Communication (TOEIC³), which consists of four listening sections and three reading sections. All questions are in the multiple-choice format. TOEIC also has optional speaking and writing sections. More than half of the Japanese universities use the TOEIC test scores as approved evidence for English proficiency for admission requirements, or application qualification (ETS, 2014a). Also, students can be exempted from taking EAP classes based on their TOEIC listening and reading scores in most of these universities. However, there has been an increasing concern of the dominant reliance on the TOEIC as a test of English proficiency in Japanese universities due to an apparent discrepancy between what is tested in the test and what Japanese students are required to perform in university studies (Takahashi, 2012).

TOEIC scores are also traditionally used by Japanese companies for recruitment purposes. However, it seems that the reading and listening scores of the candidates are of more importance than their speaking and writing scores. It is reported that 78.5% of the companies consider merely the candidates' reading scores when making recruitment decisions (ETS, 2013). Only 36.6% consider the candidates' writing scores, and only 4.8% consider speaking scores. This phenomenon is apparently not helping with the overdue concern about poor productive language skills of Japanese students in English. Therefore, the Japanese Government and other stakeholders have urged the need to introduce other tests of English proficiency, which consist of compulsory components of productive skills in Japan (*The Japan Times*, 2013).

The Aptis test, provided by the British Council, is one of these potential alternatives to TOEIC to be used in Japan. According to the British Council, the Aptis test is newly designed to provide English learners with an alternative to currently available high-stakes examinations. One of the characteristics of the Aptis test is its flexibility in structure and delivery; for example, the test can be delivered by computer, pen and paper, or a mix of the two, allowing language teachers to select the delivery mode most suitable for local contexts.

If the Aptis test is to gain acceptance from corporate businesses, government organisations and educational institutions in Japan as a measure of English proficiency levels, evidence demonstrating the validity of the test in the Japanese context is crucial. To the knowledge of the researchers, there is no study which examines the cognitive validity of the Aptis test in the Japanese context. Therefore, the present project aims to examine the cognitive validity (Glaser, 1991; Weir, 2005) of the Aptis Writing test.

¹ Obunsha Co., Ltd. is a publisher of study guides, school textbooks, dictionaries and periodicals. The company develops and provides various achievement exams for level checks. See: http://www.obunsha.co.jp

² The MEXT in Japan has publicly recommended two levels of English proficiency as goals for high school graduates, which are the EIKEN Grade 2 (the B1 level of the CEFR) and Pre-2 (the A2 level of the CEFR) levels as appropriate benchmarks (MEXT, 2002 http://www.mext.go.jp/b_menu/shingi/chousa/shotou/020/sesaku/020702.htm)

³ The TOEIC (Test of English for International Communication) test is an English proficiency test for the speakers of English as a second or foreign language developed by the Educational Testing Service (ETS).

2. CONTEXT OF THE STUDY

2.1 English education policy and reforms in Japan

The Course of Study⁴ developed by the Ministry of Education, Culture, Sports, Science and Technology (MEXT⁵) has been the official National Curriculum for primary and secondary schools in Japan since 1947. It provides the goals, guidelines and general principles for teaching English courses across the schools. The textbooks are also authorised by MEXT. The main limitation of the Course of Study, however, which has legal enforcement as an instructional framework applied at the national level, is that systematic reference to instruction is not included (Gorsuch, 2000). Schools or teachers have freedom to adopt any pedagogical practices, as well as designing their own class activities within the objectives framed by the Course of Study. Their pedagogical practices, therefore, might vary depending on students' academic achievements or graduates' career and educational goals. Academic senior high schools⁶, for example, tend to focus primarily on teaching the tasks that will be used in the university entrance English tests.

As a result, English education policy has had successive reforms⁷, including the acceptance of the methods of Communicative Language Teaching as opposed to Grammar Translation methods (i.e. *yakudoku*⁸). The Course of Study 1999 version (which was implemented in 2003) aimed to cultivate English communicative abilities of Japanese people. The MEXT recommended that individual university entrance examinations should reflect this aim in terms of test format and content (Guest, 2008). The Course of Study 2009 strongly emphasises acquisition of all four skills: listening, speaking, reading and writing (MEXT, 2009). It also stressed the importance of using the language skills in a real-world setting.

Moore (2015a) investigates the writing constructs measured in 124 English writing tests used in Japanese university entrance exams in 2013. The results show that word-reordering was the most commonly used response format in these writing tests, followed by translation. The heavy reliance on translation and indirect word-reordering tasks in writing assessments has raised concerns, because writing skills which Japanese high school students are expected to learn, as specified in the Course of Study, are more than just lexical and grammatical knowledge (MEXT, 1999, 2009). It is therefore recommended to test students' writing skills directly in Japanese university entrance exams by including writing tasks. The present study, therefore, aims to examine the cognitive validity of the Aptis Writing test, which is a direct writing test.

⁴ The Course of Study is the official National Curriculum of primary and secondary school in Japan, in place since 1947. Accordingly, English education curricula of senior high schools are legitimated by *The Course of Study* which provides the goals, guidelines and general principles for teaching each English course.

⁵ The Japanese Ministry of Education (Monbusho in Japanese) was combined with the Ministry of Science and Technology in January 2001, and is known as the Ministry of Education, Culture, Sports, Science and Technology (Monbu Kagakusyo in Japanese). It is most often referred to by the acronym MEXT.

⁶ Senior high schools in Japan consist of academic and vocational schools comprising public (national and local) and private institutions. Broadly speaking, academic institutions focus on preparing students for entrance to universities, whereas vocational institutions aim to prepare students for workplace or vocational colleges.

⁷ The most recent revisions were in 1989, 1999, and 2009.

⁸ This is the method of word-by-word translation of written English into Japanese as well as explicit grammatical explanation in Japanese.

2.2 Theoretical framework

The present study is based upon Shaw and Weir's (2007) evidence-based validation framework, which shows a multifaceted view of language test validity. Cognitive validity, which demonstrates the cognitive processes elicited by the test task, is one of the most crucial components in the framework. Glaser (1991) argues that cognitive validity concerns whether the mental processes that a test elicits from a candidate resemble the processes that he/she would employ in non-test conditions. The issue of cognitive validity of writing tests is about how closely the test represents the cognitive processes involved in real-life writing contexts (Shaw & Weir, 2007). Influenced by Field's (2004) cognitive model, Shaw and Weir (2007) proposed that a valid writing test would involve test-takers in using the processes of macro-planning, organisation, micro-planning, translation, monitoring and revising, as appropriate to the level of proficiency being assessed.

In addition, the project draws on recent research by Chan (2013), which was based upon a body of literature including Flower and Hayes (1980), Field (2004), and Shaw and Weir (2007), to investigate L2 students' cognitive processes on a range of integrated writing tasks. The parts of Chan's study relating to academic writing are a valuable baseline with which writers' cognitive processes on Aptis Writing tests can be investigated. In broad terms, these are the parameters Chan (2013) investigated as illustrated in Table 1.

Table 1: Cognitive parameters for the analysis of cognitive validity in writing (adapted from Chan, 2013)

Cognitive phases	Cognitive processes
Conceptualisation	Task representation
	Macro-planning
Meaning and discourse	Careful reading (global and local)
construction	Search reading
	Connecting ideas and generating new representations (textual and intertextual)
Organising	Organising ideas in relation to input texts
	Organising ideas in relation to one's own text
Low-level monitoring and revising	During writing, monitoring and revising at low level
	After writing, monitoring and revising at low level
High-level monitoring and revising	During writing, monitoring and revising at high level After writing, monitoring and revising at high level

In detail, Chan's research investigated L2 students' writing in both testing conditions and genuine academic settings, and as a result, identified 11 criterial cognitive processes, which in her view should be at the heart of an academic writing test. The definition of each cognitive phase is presented in Table 2.

Table 2: Cognitive validity parameters in reading-into-writing tests for academic writing (adapted from Chan, 2013)

Cognitive phases involved in academic writing with integration of reading materials

Conceptualisation (Kellogg, 1996; Field, 2004, 2011) is the first phase of productive skills where the writer develops an initial mental representation of a writing task. Processes involved at this phase include task representation (Flower et al, 1990) and macro-planning (Hayes & Flower, 1980; Shaw & Weir, 2007).

Meaning and discourse construction is a higher-level phase from the model of receptive skills (Field, 2004, 2013). Meaning and discourse construction is a phase when the writer contextualises abstract meanings based on the contextual clues provided in the writing task and their own schematic resources (background knowledge) and integrates the information from these different sources into a discourse representation (Brown & Yule, 1983; Field, 2004, 2013). Processes involved at this phase include reading processes such as careful reading, search reading and connecting ideas from multiple sources and generating new meaning (Khalifa & Weir, 2009; Spivey, 1990, 1997).

Organising (Show & Weir, 2007; Spivey, 1990, 1997) is a phase where the writer 'provisionally organises the ideas, still in abstract form, in relation to the text as a whole and in relation to each other' (Field, 2004, p.329).

Monitoring and revising (at high and low level) (Hays & Flower, 1980; Kellogg, 1996; Shaw & Weir, 2007) is a phase where the writer checks the quality of the text. After monitoring, a writer usually revises the unsatisfactory parts of the text (Field, 2004, p. 330).

The Aptis Writing tests do not require students to write from sources, even though the test-takers need to read a short prompt. Therefore, the process of 'organising ideas in relation to input texts' was excluded in this study. Nevertheless, this list provides a useful baseline as to the cognitive processes which L2 writers in real-life contexts are likely to employ.

The present project draws on Shaw and Weir's (2007) and Chan's (2013) work to investigate the target cognitive processes required of students in the Japanese academic context, and to investigate the extent to which these processes are elicited by Part 4 of the Aptis Writing test.

There have been several investigations into the cognitive validity of English writing tests (e.g. Yu et al, 2011; Zainal, 2012; Chan et al, 2014; Yu & Lin, 2014). For example, Yu and Lin (2014) investigated the comparability in test-takers' cognitive processes when completing the two types of writing tasks. They investigated how Taiwanese university students' performance and cognitive processes were affected by their graphicacy. English writing ability, and the use of different graph prompts based on a think-aloud method and interviews. The results showed that graphicacy and types of graphs had only slight impacts on participants' test performance. Also, Yu et al (2011) investigated the cognitive processes of candidates completing IELTS Academic Task 1 with think-aloud protocols. Chan et al (2014) investigated test-takers' cognitive processes on a reading-into-writing task through a questionnaire. These studies have demonstrated the importance of investigating the cognitive validity of test tasks. In Japanese contexts, however, there has been little research done on validation of high-stakes English writing tests. Weir (2014) investigated the context and cognitive validity of a pilot version of the TEAP test⁹ and demonstrated an acceptable degree of context and cognitive validity for use as an English writing test for Japanese university admission. The present study adapts a combination of the methodology used in these previous studies, i.e., questionnaire and retrospective interview (for details, see Section 3).

⁹ TEAP is locally designed to test Japanese senior high school students for university entry by its main developers – Sophia University and the Eiken Foundation of Japan, assisted by the University of Bedfordshire.

2.3 Research questions

This project investigates the cognitive validity of the Aptis Writing test in the Japanese context. The Aptis Writing test contains four parts: 1) word-level writing, 2) short text writing, 3) three written responses to written input, and 4) formal and informal text writing. The whole Writing test lasts for 50 minutes (The British Council, 2013, p.4). As described in Section 2.1, the most commonly used standardised writing tests in Japan are indirect tests, i.e. those which do not require test-takers to produce a continuous piece of discourse. Most Japanese students are therefore unfamiliar with writing continuous discourse under test conditions.

As the research aims to investigate the cognitive processes on direct writing tasks, Part 4 is the most substantial direct writing task in the test and was most relevant for the purposes of this investigation. In addition, based on the consultation with the lecturers, taking the whole Aptis Writing test could be too overwhelming for the participants. As a result, this study examined only Part 4 of the Aptis Writing test.

The project aims to investigate the following two questions:

RQ1: What is the contextual cognitive construct of academic writing in English at a Japanese university?

RQ2: To what extent does Aptis Writing test Part 4 resemble the contextual features of Year 1 writing tasks sampled at a single Japanese university, and elicit the cognitive processes students employ to complete these tasks in real-life?

3. RESEARCH DESIGN, DATA COLLECTION AND ANALYSIS

3.1 General approach

To address these questions, this project uses a mixed-method approach, because a combination of qualitative and quantitative approaches provides a better understanding of research matters than either approach alone (Johnson & Onwuegbuzie, 2004). Research methods used include document analysis, expert judgement, interview, questionnaire and score analysis, as shown in Table 3¹⁰.

¹⁰ All instruments used, tasks and questionnaires, and data collected are available from the second author on request.

Table 3: Summary of data collected

Focus	Data collection	Data analysis
RQ1: To identify the contextual cognitive construct of academic writing in English at a Japanese university	 Administered an online writing survey (n=91 lecturers in 49 universities) Sampled real-life writing tasks in a Japanese university (n=25 tasks) Analysed the real-life tasks by the two researchers using the contextual and cognitive parameter proforma 	 Descriptive statistics (e.g. means, standard deviations, percentage) of the online survey regarding the writing activities in the wider Japanese context Descriptive statistics of the features with regards to contextual and cognitive parameters of the real-life tasks
RQ2: To investigate the extent that Aptis Writing test Part 4 resembles the contextual features of Year 1 writing tasks sampled at a single Japanese university and to elicit the cognitive processes students employ to complete these tasks in real-life	 Collected the specification of the Aptis Writing test Analysed the Aptis task by the two researchers using the contextual and cognitive parameter proforma Administered the Aptis Writing Test Part 4: informal and formal emails (n=35 participants) Administered the Writing Process Questionnaire immediately after test (n=35 participants) Conducted semi-structured interviews (n=7 students) (n=2 lecturers) 	 Descriptive statistics on the Cognitive Process Questionnaire items Thematic analysis of interview data – first transcribed the interviews and then divided the transcripts into categories based on cognitive parameter proforma Descriptive comparisons between the construct of measured in the Aptis Writing test and the real-life tasks

3.2 Participants

3.2.1 Students

Thirty-eight (38) of 85 first-year Japanese students were recruited from the Department of English of a Japanese university in June 2014. The participants were recruited from the Department of English because according to the initial survey, students from other departments are not required to write in English on their modules in this university (for more discussion regarding this issue, see Section 3.4.1). According to the informal assessment of their lecturers, their proficiency levels were between A2 and B1. They were from four main disciplines: *Linguistics*, *Speech Communication*, *British Culture and Literature*, and *American Culture and Literature*. During the course of the study, these participants were taking English classes, provided by the Department of English. These classes were aimed at strengthening the students' four English language skills in reading, writing, listening and speaking.

3.2.2 Lecturers

Two university lecturers of Academic Writing who taught the 38 Year 1 students were recruited to participate in a semi-structured interview. Lecturer A specialised in English literature and had three years' teaching experience in Japanese universities. Lecturer B specialised in Linguistics and had 13 years' teaching experience.

3.3 Research instruments

3.3.1 Test tasks

One set of sample Aptis Writing test Part 4 tasks (Part 4a: writing an informal email to a friend in response to a notice and Part 4b: writing a formal email to a notice) were used in the study. These tasks were supplied by the British Council.

The tasks were piloted with three Japanese university students. The pilot results showed that the tasks were appropriate to the level of the participants in terms of genre, topic domain and output demand. The participants were familiar with writing and replying to emails because they were one of the writing tasks specified in the Course of Study, which is the national curriculum for secondary school English.

3.3.2 Real-life tasks

According to the British Council, the Aptis test can be tailored for different Target Language Use (TLU) domains, such as Academic or Professional. In this study, we consider academic context as the TLU. In other words, Aptis scores are used to make inferences of test-takers' abilities in studying in the university in the Japanese context. The plan was to collect writing tasks from different departments, e.g. Business, Computing, and Engineering. However, based on an initial task survey at the university, students from these departments were not required to write in English. In other words, most writing tasks were completed in Japanese.

The researchers collected 25 writing tasks used in the English for Academic Purposes (EAP) classes at a Japanese University. The tasks varied from structured writing tasks, short continuous discourse through to an argumentative essay. The students were usually allowed to complete the tasks without specific time constrains.

3.3.3 Writing Process Questionnaire

This project adapted the Writing Process Questionnaire from Chan (2013) and Chan et al (2014). The questionnaire was modified to suit the task features of the Aptis General Writing tests Part 4. The questionnaire began with eight background information items regarding the participants' current level of English writing and reading proficiency, and their familiarity with the students' writing of English on a computer.

After that, there were a total of 40 items which aimed to measure the extent to which students employed the processes highlighted in Table 1. Each question item (n=40) of the Writing Process Questionnaire was categorised into five cognitive process phases as shown in Table 4 (see Table 2 for the definitions of each cognitive phase).

Table 4: Structure of the Writing Process Questionnaire

Cognitive phases (n of items)	Question items of Writing Process Questionnaire
Conceptualisation (Task representation and macro-planning) (8)	2, 3, 4, 5, 10, 14, 21, 23,
Meaning and discourse construction (9)	1, 6, 7, 8, 9, 11, 13, 20, 22,
Organising (6)	12, 15, 16, 17, 18, 19
Low-level monitoring and revising (4)	31, 32, 39, 40
High-level monitoring and revising (13)	24, 25, 26, 27, 28, 29, 30, 33, 34, 35, 36, 37, 38

Each of the items can be scored on a 4-point Likert scale (4=strongly agree; 3=agree; 2=disagree; 1=strongly disagree). Participants can also choose 0 if they are unsure of the answer. The reason why the 4-point scale questions were chosen, rather than 5-point scales is that students tend to answer with a neutral non-position opinion in scales with an odd number of choices; thus, an even number of options is believed to be effective for encouraging students to express a definite opinion (Brown, 2001). Additionally, there is an open-ended question at the end of each sub-section.

The questionnaire was developed in English and then translated by the first researcher, who is a native Japanese speaker. It is believed that 'the quality of the obtained data increases if the questionnaire is presented in the respondents' mother tongue' (Dörnyei & Taguchi, 2010, p. 49). The wording of the translated questionnaire was checked by three Japanese secondary school teachers in Japan. One of them teaches the Japanese language, and the other two teach English language. One of them also obtained a Master's degree in Applied Linguistics in a UK university. Furthermore, three Japanese university students completed the writing tasks and filled in the translated questionnaire in the pilot to ensure that the wording of the questionnaire was easy to understand for Japanese university students.

3.3.4 Online writing task survey

The online writing task survey was designed upon the Contextual Parameter Proforma (Chan, 2013; Shaw & Weir, 2007), scoring rubrics (Step Eiken¹¹, TOEFL iBT, IELTS) and the Course of Study (MEXT, 1999). It aimed to provide a general picture of what writing tasks are commonly required in Japanese universities. The survey consisted of 20 items: 12 closed-ended and 8 open-ended. It is noted that this is part of a larger-scale survey, which is included in the report funded by the British Council Assessment Research Awards and Grants (Moore, 2015b).

The online survey was trialled by four lecturers in Japanese universities to ensure that the wording of the questionnaire would be easy to understand for academics in Japanese universities, especially for those lecturers who might not be familiar with some of the terminologies.

3.3.5 Interview

Retrospective interviews were conducted to examine further the participants' cognitive processes on Part 4 of the Aptis Writing test. Of the total participants, 20% were interviewed individually by one of the researchers immediately after the test event in Japanese, as the participants felt more comfortable to be interviewed in their L1 rather than in English. All interviews were voice recorded. The recordings were transcribed by the researcher who interviewed them. The transcripts were then translated into English (for data coding and analysis see Section 3.5).

¹¹ STEP Eiken is informally called EIKEN which is an English language test conducted by the Eiken Foundation of Japan (formerly the Society for Testing English Proficiency, Inc. [STEP]) and backed by the Japanese Ministry of Education, Culture, Sports, Science and Technology (MEXT).

3.3.6 Contextual and cognitive parameter proforma

A contextual and cognitive parameters proforma was adapted from Chan's study (2013) to analyse the contextual and cognitive parameters of the writing tasks of Japanese university entrance exams collected in the study.

The proforma had two sections: contextual parameters and cognitive parameters. The first section contained seven items. They addressed the contextual features of the task in terms of *purposes, topic domain, genre, cognitive demands, and language function to be performed; clarity intended reader,* and *knowledge of criteria*. The second section contained six items. They addressed the cognitive processes required to complete the task in terms of *task representation and macro-planning, connecting different ideas and generating new representations, translating and micro-planning, organising ideas, low-level monitoring and revising, and high-level monitoring and revising.*

3.4 Data collection

3.4.1 Predominant writing activities in Japanese universities

As the first step was to identify the predominant writing activities in Japanese universities, an online survey was conducted. The online survey (see Section 3.3.4) was set up in November 2014. The target universities identified were as follows:

- 1. universities which administered entrance writing examinations
- 2. universities which had been promoting pedagogical practices in English writing.

The first researcher visited the websites of the target Japanese universities to identify the lecturers who met the purposes of our research, and then identified 75 lecturers who either assigned their students' academic essays in English or taught academic writing. They were approached by email. They were asked to forward an invitation to their colleagues to participate in the survey. In addition, an invitation was sent to academics in Japan via mailing lists of professional associations. As a result, a total of 91 lecturers from 49 universities responded to the online survey.

After conducting the online survey to investigate common writing activities in Japanese universities, an in-depth task analysis was conducted in a single university in Japan, i.e. Fukuoka University. A total of 521 Year 1 syllabi were collected from different disciplines at the university (e.g. Humanities (Culture, History, Japanese Language and Literature, Education and Clinical Psychology, English, German, French and East Asian Studies), Law, Economics, Commerce, Science and Engineering). However, the results showed that most subject modules did not require Year 1 students to write in English, apart from two modules: American culture and literature and EAP.

It was then decided to focus the investigation on EAP modules, due to a higher student population. As a result, two EAP syllabi and 25 in-class writing tasks used in these EAP modules were collected. The lecturers who were teaching these modules were interviewed about how they used these writing tasks to instruct English writing to the participants, as well as how they assessed the writing products.

3.4.2 Writing process data

This study investigated participants' writing processes on the Aptis Writing test Part 4, both qualitatively and quantitatively during their writing classes on two separate dates. The following procedures were followed.

- The researcher explained to the participants the aims of this study and the ethical issues, and then asked them to sign the consent form.
- The participants completed Part 4a (writing an informal email to friends based on a notice) in 10 minutes, immediately followed by filling in the Cognitive Process Questionnaire.
- The participants then completed Part 4b (writing a formal email to the sender of the notice) in 20 minutes, immediately followed by filling in the same Cognitive Process Questionnaire. It is of great importance to complete the questionnaire immediately after finishing each task as the Cognitive Questionnaire aims to reveal the processes they used in each of the tasks.
- Immediately after the second questionnaire was completed, the researcher conducted one-to-one semi-structured interviews with four participants on the first data collection day and three participants on the second data collection day. The interviews were conducted in Japanese. All of the interviews were voice-recorded.

A total of 38 students participated in the study. Three participants were excluded due to incomplete data sets. Therefore, a total of 70 scripts (35 on Part 4a and 35 on Part 4b) were collected. The data from all 70 questionnaires were entered into a SPSS spreadsheet.

3.5 Data analysis

RQ1: What is the contextual cognitive construct of academic writing in English at a Japanese university?

The data collected in the online survey were analysed descriptively to reveal the general writing construct across Japanese universities. For the classification categories, results of the percentage of each option are presented. For the rating categories, the mean and standard deviation on the 4-point Likert scale are presented. Graphical presentation of the data is provided for further illustration where necessary.

In addition, content analysis of module syllabi and writing tasks was conducted to identify the construct of writing in a single Japanese university. The 25 real-life tasks collected were analysed using the contextual and cognitive parameters proforma on seven contextual categories, i.e. *purpose*, *topic domain*, *genre*, *cognitive demands*, *language functions to be performed*, *clarity of intended reader* and *knowledge of criteria*; and six cognitive categories, i.e. *task representation and macro-planning*, *connecting different ideas and generating new ideas*, *translating and micro-planning*, *organising ideas*, *low-level monitoring and revising*, *and high-level monitoring and revising*. For the classification categories, results of the percentage of each option are presented. For the rating categories, the mean and standard deviation on the 4-point Likert scale are presented. Graphical presentation of the data is provided for further illustration where necessary.

RQ2: To what extent does Aptis Writing test Part 4 resemble the contextual features of Year 1 writing tasks sampled at a single Japanese university, and elicit the cognitive processes students employ to complete these tasks in real-life?

The cognitive processes employed by the test-takers in the Aptis test were investigated through the Writing Process Questionnaire (see Section 3.3.3) and retrospective interview. Descriptive statistics of individual questionnaire items were obtained and analysed. Descriptive analyses were then made to compare the cognitive processes required by these real-life writing tasks and those tested by the Aptis task. Descriptive statistics, instead of inferential statistics, were used due to the small sample size.

The interview data was also analysed. The recordings were transcribed and imported into NVivo 10, where all the transcriptions were coded into nodes based on cognitive models reviewed previously; see Figure 1 (Chan 2013; Chan et al 2014; Shaw & Weir, 2007).

Figure 1: Summary of coding of interview data into nodes

Nodes

Name	3	Sources	Refere
Cognitive phases (test task)		0	0
Conceptualisation		7	18
High-level monitoring and revising (Nodes)		7	24
Low-level monitoring and revising		7	15
Meaning and discourse construction		7	26
Organising		7	18
Cognitive processes between 4a and 4b		7	10
Cognitive processes between test-task and real-life task		7	17
Computer-based		0	0
Advantage of computer based task		2	5
Disadvantage of computer based task (Nodes)		6	15
Disadvantage of timed writing task		7	14

4. FINDINGS

4.1 The prominent writing activities in Japanese universities

The target writing constructs in Japanese universities were investigated in two ways:

- 1) a larger scale online survey identified the most commonly used writing tasks in Japanese universities across disciplines
- 2) an in-depth scrutiny of 25 real-life writing tasks collected in a Japanese university identified key features.

English writing genre commonly used in Japanese universities

The results of the online survey are presented below: 91 lecturers from 49 universities responded to the online survey. The results presented here concern the writing tasks used in Year 1 studies only. The full results regarding other years will be reported in the first author's doctoral thesis. The reason we focus on Year 1 in this study is because, if Aptis is to be used as a university entrance exam in Japan, we need to examine what students are expected to produce when they are admitted to the university. In other words, Aptis' function will be to determine whether the test-takers have met the minimum English language threshold to study in a Japanese university. Most Japanese universities provide in-house EAP training for their students to cope with the increased demand of English language skills in Year 2, 3 and 4 studies. Our purpose here is to investigate the immediate English writing needs of students after they have been admitted on a program in a Japanese university.

As shown in Table 5, the most commonly used writing genres for Year 1 students in Japanese universities included essay (33%), followed by summary from a single text (23%), report (20%) and explanation of graphs/pie chart (10%). The least common writing task was a case study (3%).

Table 5: Genre commonly used in Year 1 courses in Japanese universities across disciplines

Writing genre	Percentage
Essay	33%
Summary (single text)	23%
Report	20%
Summary (multiple texts)	11%
Explanation of graphs/pie chart	10%
Case study	3%

These results indicate that Year 1 Japanese students are expected to construct a range of academic writing tasks, which include essay, summary, report and explanation of non-verbal input and, to a lesser extent, case study.

Topic domains

The respondents were asked to indicate the topic domain (i.e. personal, social, academic or professional) of the writing tasks they assigned to the Year 1students (see Table 6).

Table 6: Topic domains of writing tasks used in Japanese universities

	All	Essay	Report	Summary (single text)	Summary (multiple texts)	Explanation of graphs/ pie chart	Case study
Academic	40%	30.5%	44%	43%	48%	42%	32%
Social	31%	30.5%	28%	29%	25%	31%	41%
Personal	18%	30%	17%	19%	13.5%	17%	12%
Professional	11%	9%	11%	9%	13.5%	10%	15%

Most writing tasks assigned were based on academic topics (40%), followed by topics in the social domain (31%); in contrast, professional topics were least common (11%). This is because most Japanese universities have been promoting pedagogical practices in academic English writing. Therefore, the lecturers are encouraged to assign writing tasks based on academic and social topics, more than professional topics to their students.

An interesting result is that 30% of the essay tasks assigned were on personal topics; however, personal topics were less common in other genres (12–19%). According to the comments from the lecturers in an opened-ended question, this is because essays in personal topics are often used as scaffolding tasks in Japanese universities to prepare students for more demanding topics later on. Nearly a third (30%) of the essays assigned were based on social topics and another 30% on academic topics. Only 9% were based on the professional topic domain.

There is a similar pattern of the use of different topic domains in the remaining genres, i.e. report, summary (single text), summary (multiple texts) and explanation of graphs/pie chart. The most common topic domain was academic which accounts for almost 50% of all tasks, followed by the social domain, which was assigned in 30% of the tasks. In contrast, only about 10% of the tasks were in the professional and personal domains. As for case study tasks, social topics (41%) were more prominent that academic topics (32%). The proportion of personal and professional topics was similar to those in other genres.

Language functions to be performed

The respondents were then asked to rate the importance of different language functions expected of their students in writing (see Table 7). They should rate "4" if a particular function is of great importance and "1" if it is of no importance. The percentage of each option is presented together with the mean and standard deviation.

According to the respondents, in terms of the average rating, the most important language functions were *organising*, followed by *summarising*, *describing* and *persuading*. Other important language functions (with an average rating of 3 or above) included *citing sources*, *comparing*, *reasoning*, *expressing personal view*, *synthesising*, *evaluating*, *defining*, *and classifying*. The functions of predicting and *recommending* appeared to be less important than the others.

Table 7: Language functions to demonstrate in the writing

Language function	1: Of no importance	2: Of little importance	3: Of some importance	4: Of great importance	Average rating	SD
Organising	0%	6%	20%	74%	3.68	0.58
Summarising	2%	4%	38%	56%	3.48	0.68
Describing	0%	10%	36%	53%	3.43	0.67
Persuading	0%	11%	37%	52%	3.42	0.68
Citing sources	3%	15%	22%	59%	3.37	0.87
Comparing	2%	6%	47%	45%	3.35	0.70
Reasoning	2%	14%	32%	52%	3.33	0.80
Expressing	4%	13%	32%	52%	3.32	0.83
personal views						
Synthesising	2%	17%	33%	48%	3.26	0.83
Evaluating	2%	10%	49%	38%	3.23	0.73
Defining	1%	14%	48%	37%	3.21	0.72
Classifying	8%	12%	47%	33%	3.04	0.89
Recommending	6%	28%	53%	13%	2.73	0.76
Predicting	8%	33%	51%	7%	2.57	0.75

This result shows that Japanese university students were expected to perform an extensive range of language functions in writing. They were expected not only to express their views on a given topic, but also to organise and summarise information, or even to synthesise information from reading input materials.

The use of verbal input

The respondents were then asked to rate the frequency of different verbal input texts assigned to students in writing ("4" indicates that a particular verbal input is often assigned and "1" indicates never) (see Table 8). The percentage of each option is presented together with the mean and standard deviation.

Table 8: The use of verbal input in the writing tasks

Verbal input	1: Never	2: Rarely	3: Sometimes	4: Often	Average rating	SD
News/magazine article	20%	11%	40%	29%	2.79	1.07
Journal article	30%	18%	29%	23%	2.45	1.15
Book chapter	38%	13%	18%	30%	2.41	1.28
Report	49%	12%	1%	17%	2.07	1.19
Review	57%	17%	19%	7%	1.76	1.00
Proposal	79%	8%	9%	5%	1.39	0.84

According to the respondents, news/magazine articles were the most commonly used, with an average rating of 2.79 (*SD*: 1.07). Journal articles, book chapters and reports were also used sometimes, with means of 2.45 (*SD*: 1.15), 2.41(*SD*: 1.28) and 2.07 (*SD*: 1.19) respectively. In contrast, proposal and review were hardly used; the average rating of the proposal and review were 1.39 (*SD*: .84) and 1.76 (*SD*: 1.00) respectively.

The use of non-verbal input

The respondents were also asked to rate the frequency of use of non-verbal input texts in the writing tasks ("4" indicates that a particular verbal input is often assigned and "1" indicates never) (see Table 9). The percentage of each option is presented together with the mean and standard deviation.

Table 9: The use of non-verbal input in the writing tasks

Non-verbal input	1: Never	2: Rarely	3: Sometimes	4: Often	Average rating	SD
Picture	28%	24%	31%	18%	2.38	1.08
Diagram	28%	25%	32%	15%	2.34	1.04
Table	36%	16%	38%	10%	2.23	1.05
Graph/pie chart	34%	24%	29%	13%	2.20	1.05

The use of non-verbal inputs in writing tasks did not appear to be frequent; their average ratings were lower than 2.40. The most common non-verbal input assigned to students was *picture*, followed by *diagram*. The average rating of *picture* was 2.38 (*SD*: 1.08) and that of *diagram* was 2.34 (*SD*: 1.04).

Discourse mode

The respondents were asked to report whether the following discourse modes: *narrative*, *descriptive*, *expository*, and *argumentative* were expected in students' writing. As shown in Table 10, Japanese students were expected to perform two discourse modes: *argumentative* and *expository* in almost 90% of their writing, followed by *descriptive* (65%). In contrast, less than 50% of the tasks required the *narrative* discourse mode.

Table 10: Discourse mode used in writing classes

Discourse mode	Expected	Not expected
Argumentative	89%	11%
Expository	86%	14%
Descriptive	65%	35%
Narrative	48%	52%

Marking criteria for writing

The respondents were then asked to rate the importance of a particular writing aspect in students' writing: *content, organisation, audience awareness, word choice, grammar* and *mechanics* ("4" indicates great importance and "1" indicates no importance) (see Table 11). The percentage of each option is presented together with the mean and standard deviation.

Table 11: Marking criteria of the writing

Marking criteria	1: Of no importance	2: Of little importance	3: Of some importance	4: Of great importance	Average rating	SD
Content	0%	0%	10%	90%	3.90	0.30
Organisation	0%	0%	15%	85%	3.85	0.36
Audience awareness	1%	9%	52%	38%	3.27	0.67
Word choice	1%	7%	61%	31%	3.22	0.61
Grammar	2%	9%	64%	24%	3.11	0.64
Mechanics	3%	10%	63%	23%	3.07	0.68

According to the results in Table 11, *content* and *organisation* were the most important aspects in the students' writing; the average rating of *content* and *organisation* was 3.90 (*SD*: 0.30) and 3.85 (*SD*: 0.36) respectively. Similarly, the other writing components: *audience awareness, word choice, grammar* and *mechanics* were rated "of some importance". The results imply that the Japanese students are expected to demonstrate writing quality in all these aspects.

In short, the online survey shows the construct of writing expected of Year 1 Japanese students across universities in terms of genre, topic domains, language functions, the need to read verbal and non-verbal input, discourse mode, and assessment criteria. The results show that a valid writing test for Japanese students should cover direct writing tasks, such as essay writing in argumentative or expository discourse mode, and summary with single text or multiple texts. Their writing should be assessed in terms of content and organisation, audience awareness, word choice, grammar and mechanics.

4.2 The features of the real-life writing tasks in a single Japanese university

The results of the online survey provide a general idea of the writing construct expected of Japanese Year 1 students. The next step was to collect actual real-life tasks from a single Japanese university for an in-depth security.

As mentioned previously, 25 tasks were collected from a single Japanese university for detailed examination of their features. These tasks were analysed using the contextual and cognitive proforma by the two researchers. The two researchers filled in the proforma independently and compared the results. The agreement rate was above 90%. For any different results, the two researchers discussed the difference and reached a final decision. The results on each parameter are presented below.

4.2.1 The contextual features of the real-life writing tasks

Genre

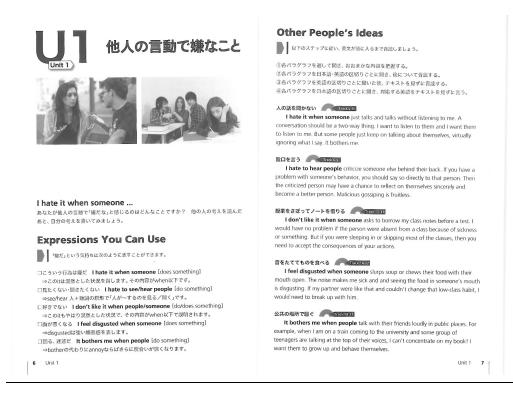
The 25 real-life writing tasks assigned to the students in the EAP modules at a Japanese university belong to three genres: a short continuous discourse (60%), a guided descriptive essay (24%), and an argumentative essay (16%), as shown in Table 12. As explained previously, the plan was to collect tasks from different disciplines. However, in this Japanese university, Year 1 students in other disciplines, such as Economics, Commerce, Science and Engineering, are not required to write in English.

Table 12: Genre of the Year 1 writing tasks in a Japanese university

Genre of writing task	Real-life tasks (n=25)
Short continuous discourse	60%
Guided essay	24%
Argumentative essay	16%
Email	0%
Report	0%
Case study	0%
Summary	0%

However, none of the other genres which are reported in Section 4.1.1 above, e.g., report, case study, summary, and explanation of graphs/pie chart were assigned. According to the lecturers, Japanese university students are generally weak in Academic English writing and need training in short and guided scaffolding tasks.

A short continuous discourse task required the students to write a paragraph of 50 words after reading model essays. A sample of the task is shown below.



Based on the interview with one of the lecturers, the students were asked to read some model essays, focusing on the structure of the essays, as well as vocabulary and idiomatic phrases which they were encouraged to use later in their writing. They were then allowed to choose one of the topics. They were expected to write their own views/experiences on the chosen topic in a paragraph. They were also asked to demonstrate the target syntax.

Another genre assigned to the students was a guided descriptive essay, as shown in the example below.



In a similar vein, this task required students to read a model essay and then write an open essay without the requirement of the number of words. According to the data from the interview, the lecturers used this task type as scaffolding to support the students in learning academic writing. The lecturers asked the students to discuss appropriate or useful language items for the tasks. They were encouraged to use a structured outline when planning their writing, in collaboration with the lecturer and/or with other students in the group. After that, the students would write the essay based on their writing plan.

The last genre assigned to the students was an argumentative essay with a short prompt of a minimum of 150 words.

2014 基礎演習B Final Task (Plan A)

Number.

Name:

Directions. A gift (such as a camera, a soccer ball, or an animal) can contribute to a child's development. What gift would you give to help a child develop? Why? Use reasons and specific examples to support your choice. Usually, a good essay will contain a minimum of 150 words.

According to the lecturers, students were asked to plan their ideas on the given topic in class, and then complete the essay at home. The students were asked to submit the essay by the next class.

It should be noted that none of the three types of writing tasks collected in this study were timed; therefore, the students could complete the writing tasks without specific time pressures. Furthermore, they could use an English dictionary while completing the tasks.

Purpose of the task

The clarity of purpose of the 25 real-life writing tasks were analysed by a 4-Likert scale: 1: unclear to 4: clear (see Table 13). Sixty per cent (60%) of the tasks were rated 1 (unclear) out of 4 (clear) with regards to clarity of the task. The average rating for clarity of purpose of the tasks was 1.40 out of 4 (*SD*: 0.50). Therefore, the purpose of these real-life writing tasks used in the Japanese EAP courses in this study is regarded as unclear. These tasks did not provide any information about the writing purpose in terms of communicative purpose and intended readers.

Table 13: Clarity of the purpose of the Year 1 writing tasks in a Japanese university

	All tasks (n=25)	Short continuous discourse (n=15)	Guided descriptive essay (n=6)	Argumentative essay (n=4)
1. unclear	60%	100%	0%	0%
2.	40%	0%	100%	100%
3.	0%	0%	0%	0%
4. clear	0%	0%	0%	0%

Topic domain

The results of the analysis for topic domains such as *personal*, *social*, *academic* and *professional* of the 25 real-life writing tasks are shown in Table 14.

Table 14: Topic domain of Year 1 writing tasks in a Japanese university

	All tasks (n=25)	Short continuous discourse (n=15)	Guided descriptive essay (n=6)	Argumentative essay (n=4)
Personal	76%	87%	100%	0%
Social	24%	13%	0%	100%
Academic	0%	0%	0%	0%
Professional	0%	0%	0%	0%

Seventy-six per cent (76%) of the tasks were rated in the personal domain, for example, to write about their ideal job, or about one person who had greatly influenced them. Twenty-four per cent (24%) of the tasks were in the social domain, such as education and social behaviours. None of the tasks collected in this study were in the academic and professional domain. This was probably because the modules from which data were collected were EAP modules instead of subject modules.

Cognitive demands

We then evaluated the level of the general cognitive demands, which these real-life tasks place on the students. Table 15 shows that these real-life tasks required students to relate personal experience or viewpoints. Despite the fact that the students were provided with input materials for their writing, they were not asked to integrate such materials into their writing. In other words, students were not asked to summarise any given ideas or transform those ideas into new representations.

Table 15: Cognitive demands of the writing tasks in a Japanese university

	All tasks (n=25)	Short continuous discourse (n=15)	Guided descriptive essay (n=6)	Argumentative essay (n=4)
Telling personal experience or viewpoints	100%	100%	100%	100%
Summarising or organising given ideas	0%	0%	0%	0%
Transforming given ideas into new representations	0%	0%	0%	0%

Language functions to be performed

The language functions demanded by the real-life writing tasks are reported in Table 16. Four major language functions: *describing, reasoning, organising* and *expressing personal viewpoints* were predominantly required in all the real-life tasks collected in the study. The average rating of the four language functions of the tasks was 4.00 out of 4 (*SD*: 0.00). *Evaluation, classifying and comparing* were less required. The average rating of the three language functions was 1.12 out of 4 (*SD*: 0.60). None of the other language functions: *summarising, persuading, citing sources, synthesising, defining, recommending and predicting,* were required.

Table 16: Language functions to be performed in Year 1 writing tasks in a Japanese university

All tasks (n=25)	1: Of no importance	2: Of little importance	3: Of some importance	4: Of great importance	Average rate	SD
Describing	0%	0%	0%	100%	4.00	0.00
Reasoning	0%	0%	0%	100%	4.00	0.00
Organising	0%	0%	0%	100%	4.00	0.00
Expressing personal view	0%	0%	0%	100%	4.00	0.00
Evaluation	96%	0%	0%	4%	1.12	0.60
Classifying	96%	0%	0%	4%	1.12	0.60
Comparing	96%	0%	0%	4%	1.12	0.60
Summarising	100%	0%	0%	0%	1.00	0.00
Persuading	100%	0%	0%	0%	1.00	0.00
Citing sources	100%	0%	0%	0%	1.00	0.00
Synthesising	100%	0%	0%	0%	1.00	0.00
Defining	100%	0%	0%	0%	1.00	0.00
Recommending	100%	0%	0%	0%	1.00	0.00
Predicting	100%	0%	0%	0%	1.00	0.00

It should be noted that although we reached agreement on our judgement concerning the language functions, which were essential for completion of the tasks, it was possible that students might demonstrate language functions other than the four major language functions in the tasks.

Clarity of intended reader

The 25 real-life writing tasks were then analysed in terms of the clarity of intended reader. As shown in Table 17, we consider that in all of these real-life tasks, the intended reader is not clearly presented. The average rating for clarity of intended reader of the tasks was 1.00 out of 4(SD=.00). It could be obvious to the students that the real readers are the teachers; however, there was no information about intended readers in the tasks beyond the educational context.

Table 17: Clarity of intended reader in Year 1 writing tasks in a Japanese university

	All tasks (n=25)	Short continuous discourse (n=15)	Guided descriptive essay (n=6)	Argumentative essay (n=4)
1. unclear	100%	100%	100%	100%
2.	0%	0%	0%	0%
3.	0%	0%	0%	0%
4. clear	0%	0%	0%	0%

According to the interviews with the lecturers, they believed that the students were still unskilled writers and should focus more on lexical and grammatical accuracy and structures of paragraphs rather than audience awareness. Nevertheless, it is important to develop Japanese students' awareness of intended readers at an early stage (MEXT, 2009). There is a distinctive rhetorical difference between the Japanese and English writing. For example, English has been called a "writer responsible" language, whereas Japanese has been called a "reader responsible" language (Hinds, 1987). This means that texts written in English are expected to clearly express the writer's ideas so that readers do not have to infer them, while texts written in Japanese often contain ambiguity and imprecision as a way of involving the reader. If Japanese writers are not aware of the rhetorical difference between Japanese and English, their writing could be poorly received by English L1 readers. Therefore, it is important and beneficial for even novice Japanese writers to develop an awareness of the intended readers.

Marking criteria of the writing tasks

We then evaluated the clarity of marking criteria of the real-life writing tasks based on the prompts and the given verbal inputs as illustrated in Table 18. The marking criteria of the tasks used in the Year 1 writing tasks collected in this study are considered to be unclear. The average rating was 1.00 out of 4 (SD= .00). No information regarding the criteria was provided in the tasks.

Table 18: Knowledge of criteria of the tasks in the Year 1 writing tasks in a Japanese university

	All tasks (n=25)	Short continuous discourse (n=15)	Guided descriptive essay (n=6)	Argumentative essay (n=4)
1. unclear	100%	100%	100%	100%
2.	0%	0%	0%	0%
3.	0%	0%	0%	0%
4. clear	0%	0%	0%	0%

However, in order to explore how lecturers assess student performance, we specifically asked them to provide an in-depth account of the marking criteria used in the English writing classes.

Table 19 provides information about the marking criteria used by the lecturers to grade the writing. Both lecturers held similar views; *grammar*, *word choice*, *content* and *organisation* were "of some importance" or "of great importance". On the other hand, both lecturers regarded *audience awareness* as "of little importance".

Table 19: Marking criteria of the writing

Marking criteria	Of no importance	Of little importance	Of some importance	Of great importance
Grammar			0 •	
Mechanics (spelling, punctuation etc.)		0		•
Word choice			0 •	
Content (relevance clarity, logic etc.)			0	•
Organisation			0 •	
Audience awareness		0 •		

Note: • Lecturer participant A, O Lecturer participant B

According to the interview data, Lecturer A provided his advanced students with more comments/ feedback on the *content* and *organisation* of their English writing; in contrast, Lecturer B gave his unskilled students feedback more on the *grammar* and *word choice* of their writing.

Furthermore, what is interesting is that Lecturer A viewed mechanics as "of great importance", as opposed to Lecturer B's opinion "of little importance". Specifically, Lecturer A regarded *spelling* as of importance, while *punctuation* was "of no importance". He believed that a good essay should not contain any spelling errors. As for *content*, Lecturer A was very aware of the importance of the clarity and logic of his students' writing. He believed that it was important to convey the messages effectively.

4.2.2 Cognitive processes required by the real-life writing tasks

The cognitive processes required by the 25 tasks: short continuous discourse, guided descriptive essay, and argumentative essay were analysed based on the features of the tasks as well as the marking criteria provided by the lecturers. The results are presented in Table 20.

Table 20: Cognitive processes required in the Year 1 writing tasks in a Japanese university

Cognitive process	All tasks (n=25)	Short continuous discourse (n=15)	Guided descriptive essay (n=6)	Argumentative essay (n=4)
1. Task representation and				
macro-planning				
Not required	0%	0%	0%	0%
Required to a lesser extent	60%	100%	0%	0%
3. Required	40%	0%	100%	100%
2. Connecting different ideas				
and generating new ideas				
Not required	0%	0%	0%	0%
Required to a lesser extent	84%	100%	100%	0%
3. Required	16%	0%	0%	100%
3. Translating and micro- planning				
1. Not required	0%	0%	0%	0%
Required to a lesser extent	0%	0%	0%	0%
3. Required	100%	100%	100%	100%
5. Required	10070	10070	10070	10070
4. Organising ideas				
Not required	0%	0%	0%	0%
2. Required to a lesser extent	60%	100%	0%	0%
3. Required	40%	0%	100%	100%
5. Low-level monitoring and				
revising	-01	-01		-0/
Not required	0%	0%	0%	0%
2. Required to a lesser extent	0%	0%	0%	0%
3. Required	100%	100%	100%	100%
6. High-level monitoring and revising				
1. Not required	0%	0%	0%	0%
2. Required to a lesser extent	84%	100%	100%	0%
3. Required	16%	0%	0%	100%

The cognitive processes required in each of the real-life task types will be discussed in terms of their features.

First, the short continuous discourse task was meant to be used as a writing scaffolding exercise, which meant that the students were asked to write several drafts, with feedback on the drafts provided by the lecturer. The lecturer considered grammatical accuracy, appropriate word choices, content and organisation as important components of their writing. The students were encouraged to plan an outline of their writing. But as the task was short, the actual demand of *task representation and macro-planning*, especially in terms of the purpose of the task and readership, was not substantial. They were also required to write a draft with careful attention to text quality at lower levels, such as grammar or word choices, and then revise the draft based on the feedback given by the lecturer. The other three cognitive processes: *connecting different ideas and generating new ideas, organising ideas* and *high-level monitoring and revising*, are considered less essential for task completion. Students only needed to write 50 words; the demand of organising ideas and high-level monitoring was minimal. In other words, the short continuous tasks required students to engage in *translating and micro-planning* and *low-level monitoring and revising*, and, to a lesser extent, the processes of *task representation and macro-planning, connecting different ideas and generating new ideas, organising ideas* and *high-level monitoring and revising*.

Secondly, regarding the guided descriptive essays, the students were asked to categorise the given input texts into topic sentences, supporting sentences and conclusion, and to highlight idiomatic phrases. The lecturer assessed the student's writing in terms of grammatical accuracy, spelling, content and organisation. In order to meet the lecturer's marking criteria, the students needed to pay attention to their grammar and vocabulary, which required *lower-level monitoring* as well as *translating* and *micro-planning*. The processes of *task representation and macro-planning* and *organising ideas* can play an important role in writing a well-organised essay. However, as the guided descriptive tasks were mostly in the personal topic domain, the need for connecting different ideas and generating new ideas and high-level monitoring and revising was not substantial. For example, students were asked to describe their personal life; a paragraph on, for example, *what did you do last weekend?*

Lastly, the argumentative essays provided students with information about an opinion, an argument or a problem, and required them to produce an extended piece of argumentative writing in response. For example, the students needed to consider an opinion or to weigh the pros and cons of an argument before presenting their own view on the issue. They also needed to discuss various aspects of the issue, and to show examples to support their arguments. The lecturer allotted time to the students for planning, before they started to write the essay in class. This was because the lecturer believed that a good plan helps students to write a good essay of quality. In this respect, the argumentative essays required the students to engage in all cognitive processes in order to meet the task's requirements, as well as their lecturer's expectations.

Considering the results from the online survey across Japanese universities and the in-depth task analysis from a single Japanese university, there is a considerable discrepancy between the demands of the Year 1 writing tasks and what is ultimately expected of them. It is important to note that, in the Japanese context, most university entrance examinations do not assess their candidates' writing skills via direct writing tasks. According to the lecturers, although their Year 1 university students have a higher English proficiency than students in the other departments, their English writing skills are weak. These students would only learn how to produce academic writing in other more advanced genres, such as report, case study and summary, in Year 2 or Year 3.

4.3 Aptis Writing test Part 4

The report now moves on to present and discuss the results regarding the Aptis Writing test Part 4.

4.3.1 Participants' performance on the Aptis Writing test Part 4

The distribution, mean and standard deviation of the participants' (n=35) performance on the Aptis Writing test Part 4 task is presented in Tables 21 and 22. The figures are the total of Part 4a and Part 4b. The scoring was completed by the test providers, following the standardised operational procedures. The writing scale for each task is provided in Aptis Advanced Candidate Guide (The British Council, 2014) Each script can be assigned a band from 0 (Below B1), 1 (B1.1), 2 (B1.2), 3 (B2.1), 4 (B2.2), 5 (C1) to 6 (C2).

Table 21: Participants' writing band on Part 4

	Mean	SD
CEFR mark	1.11	1.022

Note: we were provided one combined band for both performances on Part 4a and Part 4b.

According to the Aptis rating scale, the result showed that the average writing score awarded to the participants was 1.11 which is closest to the equivalent B1.1 level of CEFR. As can be seen from Table 22, only 5.7% of the performance was at the B2 level, 54.3 % was at the B1 (B1.1 and B1.2), and 40% below B1.

Table 22: Distribution of the participants' performance

CEFR mark	Frequency	Percent
Below B1	14	40.0
B1.1	5	14.3
B1.2	14	40.0
B2.1	2	5.7
Total	35	100.0

This result is perhaps not surprising. While university students in the UK are expected to be at B2 or above, the English proficiency of Japanese university students is known to be lower than this. For example, according to ETS (2014b), the total score mean of TOEFL iBT of Japanese test-takers is 70, which is the equivalent to CEFR B1. According to the lecturers, the participants normally construct a piece of writing by using a Japanese-English dictionary in EAP class. Also, they usually write without any time constraints.

4.3.2 The contextual features of the Aptis Writing test Part 4

The contextual features of the Aptis Writing test Part 4 were analysed following the same procedures of the analysis of the real-life tasks reported in Section 4.2.1.

Genre

The Aptis Writing test Part 4 consists of two tasks:

- 1) Part 4a: an informal text writing of 50 words in 10 minutes
- 2) Part 4b: formal text writing of 120-150 words in 20 minutes.

Test-takers were required to read a short email and respond it in their writing.

The Part 4a and 4b tasks which the students completed in this study are shown below.



Purpose of the Aptis Writing test Part 4a and 4b tasks

The clarity of purpose of the Aptis Writing tasks were analysed using a 4-Likert scale ("4"=clear to "1"=unclear). According to the researchers, the clarity of both tasks was clear. It was clear from the task that the test-takers were to write to a friend to express personal feelings regarding a notice in the first part, and then to write to the Customer Service Team expressing their feelings regarding the same notice, and to suggest possible alternatives to address the change in the second part. It was considered that the task provided test-takers with a communicative purpose beyond the immediate test conditions.

Also, the Aptis Candidate Guide, which is available to the public, provides the purpose of the Aptis Writing test from page 19 to page 25 (http://www.britishcouncil.org/sites/britishcouncil.uk2/files/aptiscandidate-guide-web.pdf). The purpose of the writing tasks is to 'build around a series of interrelated activities', such as joining a club or applying for a visa.

Topic domain

The topic domains of the two Aptis tasks used in this study are personal and social. The students were asked to read a notice from a sports club and then write two different emails. In Part 4a, they were asked to write an informal email to explain their feelings about the notice, and in Part 4b, they had to write an email to the Customer Support Team.

Cognitive demands

The two Aptis tasks examined in this study were considered to demand the cognitive process of telling personal experiences or viewpoints for task completion, but not at the levels of 'summarising ideas' and 'transforming ideas'. Despite the fact that a short verbal input was included in the tasks, the students were not asked to integrate information from the materials into their writing. Therefore, it is considered that the tasks did not require students to summarise given ideas or transform the ideas into new representations.

Language functions to be performed

It is considered that the most important language functions demanded by the two Aptis tasks are describing, reasoning, expressing personal views, organising, evaluating and persuading. The tasks require students to: 1) express their own feelings, and 2) suggest alternatives. To express their own feelings about a rather sudden change, it is likely that the student would describe their feelings and the reason why they felt a particular way, based on the evaluation of the event. Suggesting alternatives would require the students to persuade the readers to accept their alternatives with the appropriate supporting details.

Clarity of intended reader

The clarity of intended reader of the Aptis Writing test Part 4 tasks is rated 4 (clear) on both tasks. It is clearly mentioned in the prompt that the intended reader of the Part 4a is a friend. Likewise, the Customer Service Team is the intended reader of Part 4b.

Knowledge of marking criteria

The knowledge of clarity of the two Aptis Writing test Part 4 tasks is rated 4 (clear) on both tasks. In addition to the task, *The Aptis Advanced Candidate Guide* (The British Council, 2014) provides the rating scale (i.e. 0–6) (for details of the rating scale, see Section 4.3.1) and its corresponding CEFR level. Detailed criteria of each rating in terms of the degree of task completion, grammar, mechanics, content and organisation are also provided. Hence, test-takers were provided with sufficient knowledge of the marking criteria on the task.

In addition, *The Aptis Candidate Guide* (The British Council, 2013) states that test-takers should demonstrate their understanding of appropriate registers (formality or informality) in their writing. *The Aptis Candidate Guide* also provides the test-takers with other details about the expected registers: in the first part, an intimate or casual register should be used and in the second part, a formal register, as the correspondence is between strangers or is in a technical context.

We now move to report and discuss the findings regarding the actual processes reported by the test-takers on Aptis Writing test Part 4.

4.3.3 The cognitive processes elicited by Aptis Writing test Part 4

The cognitive processes elicited by the two Aptis Writing test tasks (Part 4a and Part 4b) were investigated through a self-report questionnaire (all participants) and retrospective interview (20% of the participants). All of the questionnaire data was computed into a SPSS spreadsheet for analysis, and the interview data was transcribed and coded for analysis (for details of data analysis, see Section 3.5). The questionnaire data is presented below, supplemented by the interview data.

4.3.3.1 Overall pattern of the cognitive processes on Part 4a and Part 4b

As described in Section 3.3.3, the Writing Process Questionnaire was designed to measure the extent to which test-takers employ processes of the five cognitive phases, i.e. *conceptualisation*, *meaning and discourse construction*, *organising*, *low-level monitoring and revising*, and *high-level monitoring and revising*, on the Aptis Writing test Part 4a and 4b.

First of all, Figure 2 illustrates the overall pattern of the cognitive processes on Part 4a and Part 4b reported by the participants. The percentage indicates the average percentage of participants who selected either 'agree' or 'strongly agree' to the questionnaire items in each group.

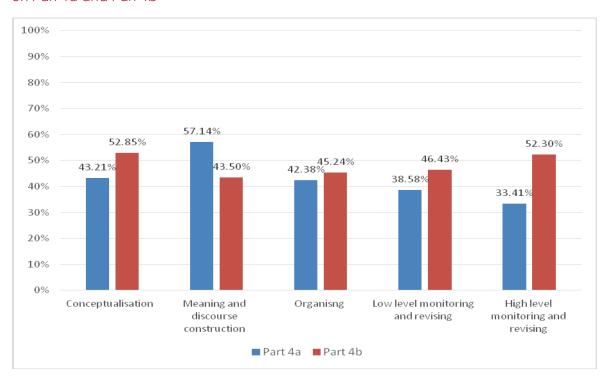


Figure 2: Mean percentage of participants reporting different groups of cognitive processes on Part 4a and Part 4b

The most prominent group of cognitive processes reported on Part 4a was meaning and discourse construction (57.14%), followed by conceptualisation (43.21%), organising (42.38%) and low-level monitoring and revising (38.58%); whereas just above 30% of the test-takers reported using the processes of high-level monitoring and revising on the task. On the other hand, over half of the participants reported employing the processes of conceptualisation (52.85%) and high-level monitoring and revising (52.30%) on Part 4b, followed by low-level monitoring and revising (46.43%), organising (45.24%) and meaning and discourse construction (43.50%).

There are several interesting findings in terms of the general pattern of cognitive processes reported by the test-takers, as presented in Figure 2. Firstly, more participants reported employing four of the cognitive processes (*conceptualisation, organising, low-level monitoring and revising and high-level monitoring and revising*) on Part 4b than Part 4a. However, more participants reported using the processes of meaning and discourse construction on Part 4a than 4b. It appears that Part 4b (Formal text writing) is more cognitively demanding than Part 4a (Informal text writing). This is because, in addition to the difference in author—writer relationship, test-takers only needed to write 50 words on the first task but up to 150 words on the latter. The formality of register on Part 4b also required test-takers to monitor and revise their email more at a high level.

The most distinctive differences between the two tasks lie in three process groups, which include conceptualisation, meaning and discourse construction, and high-level monitoring and revising. It is interesting that more test-takers reported using the processes of meaning and discourse construction on the first task, even when the second task was arguably more demanding. This implies that more test-takers focused on constructing and generating ideas when they were completing the first task than the second. This is probably because test-takers were allowed to use the same content (e.g. personal feelings and suggestion for alternative) in the second task.

4.3.3.2 The five cognitive phases on Part 4a and Part 4b

We now move on to discuss the cognitive processes employed by the participants on Part 4a and Part 4b in greater detail, with regards to each cognitive phase as reported by the students in the Writing Process Questionnaire. In addition, semi-structured interviews with seven participants allowed an in-depth understanding of their cognitive activities during the tasks. The interview data is also presented and discussed where appropriate. (The students' corresponding CEFR level, based on their Aptis band, is presented).

Conceptualisation

Table 23 displays the mean and standard deviation of the rating (4=strongly agree; 3=agree; 2=disagree; 1=strongly disagree) and the percentage of agreement of each question item (n=8) of the conceptualisation phase on Part 4a and Part 4b.

Table 23: Individual question items of conceptualisation phase on Part 4a and Part 4b

		Part 4a			Part 4b		
No	Question item	Mean	SD	% of agree/ strongly agree	Mean	SD	% of agree/ strongly agree
Q2	I thought of what I might need to write to make my writing relevant and adequate to the task while reading the task instructions.	2.80	0.87	62.90%	2.83	0.89	71.40%
Q3	I thought of how my writing would suit the expectations of the intended reader while reading the task instructions.	2.06	1.00	37.20%	2.60	0.95	60.00%
Q4	I was able to understand the instruction for this writing test very well while reading the task instructions.	2.14	0.88	40.00%	2.46	0.98	51.40%
Q5	I thought about the purposes of the task while reading the task instructions.	1.77	1.19	31.40%	2.37	1.06	48.50%
Q10	I read the task instructions again while reading the notice.	2.46	1.20	60.00%	2.37	1.17	51.40%
Q14	I changed my writing plan (e.g. structure, content) while reading the notice.	1.54	1.09	20.00%	1.86	1.17	40.00%
Q21	I re-read the task instructions while writing.	2.86	1.24	65.80%	2.66	1.03	54.30%
Q23	I changed my writing plan, (e.g. structure, content) while writing.	1.83	1.27	28.50%	2.09	1.04	45.80%

Over 60% of the test-takers reported re-reading task instructions (Q10 and Q21) and macro-planning of the content of their writing (Q2) on Part 4a. About 30% of the test-takers reported macro-planning about the purpose of the task (Q5) and 37% on the expectations of the intended reader (Q3). Twenty per cent (20%) reported changing their writing plan while reading the notice, and up to 29% while writing (Q14 and Q23). On Part 4b, more than 70% of the participants reported macro-planning the content of their writing (Q2) and 60% reported considering the expectations of the intended readers (Q3). Half of the participants reported re-reading task instructions (Q10 and Q21) and 40%–45% reported changing their writing plan (Q14 and Q23).

In terms of understanding the task instruction well on Part 4a, 40% of the participants reported this, whereas about 50% reported this on Part 4b (Q4). The data from interviews with the participants show that they were positive about doing the tasks, as shown in Extract 1.

Extract 1

"While I was doing the tests, I enjoyed writing emails." (Participant 2: below B1)

There were several interesting differences in cognitive processes reported by the test-takers between Part 4a and Part 4b. One difference was the degree of awareness of intended readers: 60% of participants considered how to meet the expectations of the intended reader on Part 4b, whereas only 37% did so on Part 4a. The participants seemed to be more aware of the intended reader on Part 4b than on Part 4a. The majority of the students who were interviewed mentioned specifically the difference in writing style expected by Part 4a and Part 4b. A comment from one of the participants is presented in Extract 2.

Extract 2

"On Part 4a, as I was asked to write to my friend about how I felt after reading the notice, I thought that all I would need to do was to just write down my feelings on email. But on Part 4b, I thought that an email to the Sport Customer Centre should be very formal." (Participant 4: below B1)

As shown in Extract 3, they were used to writing essays, but not accustomed to writing emails.

Extract 3

"I normally write essays on my own views/opinions about given topics; however, as these tasks today asked me to convey information which I got from a notice, I read with awareness of the reader and I attempted to meet the expectation of the test tasks." (Participant 5: B1.2)

As L2 learners' cultural schemata can affect the way they write and the writing they produce (Hyland, 2003), genre-based instruction may play an important role in encouraging the students to consider audience, providing unfamiliar rhetorical forms (e.g., Hyland, 2003; Yasuda, 2011). An example of the participants' awareness of the rhetorical form is presented in Extract 4.

Extract 4

"I strongly considered showing politeness to the intended reader. I didn't want to be rude. So I tried to write the email in formal style, using the formal phrases and politeness. There are seasonal greeting phrases at the beginning in formal letters/emails in Japanese." (Participant 6: B2.1)

In this regard, the participant attempted to consider the rhetorical differences between formal Japanese and English emails in terms of greeting. Using their prior knowledge of textual structures, such as essay, the participants attempted to communicate with the intended reader by considering the linguistic properties and social functions when they approached email-writing tasks.

Other differences were found in revising their writing plan. Around twice the number of participants reported changing their writing plan on Part 4b than on Part 4a. This was probably due to the time constraints. Part 4a had to be completed in 10 minutes, during which the participants had to read the task instruction and the notice and then write an email to their friend. However, when they did the Part 4b task, they could spend less time reading the notice because they had already read it on the first task (Part 4a). This could be why the test-takers had more time and capacity to rethink their writing plan on Part 4b.

The interviews with the participants revealed that most of the interviewees perceived the importance of planning before starting to write. For example, as Participants 1 and 2 mentioned as per Extracts 5 and 6.

Extract 5

"I did planning before starting to write. I thought planning before writing would be very efficient and practical." (Participant 1: B1.2)

Extract 6

"Without making a plan, the email I would write would become incoherent and badlyorganised. In order to make the intended-reader understand my emails, I made a plan." (Participant 2: below B1)

However, a few participants, e.g. Participant 4, reported in an interview that they did not make a plan before starting to write due to time constrains, as shown in Extract 7.

Extract 7

"I did not plan before writing due to time constraints; instead, I did writing and planning about what I would write at the same time, but also going back to reading the notice in order to make sure about what I would need to write." (Participant 4: below B1)

It seems that Participant 4 was trying to do multiple tasks at the same time, which included planning in her mind, writing and reading the notice. However, researchers have argued that skilled writers have achieved high automaticity in most writing processes, and hence they tend to be able to perform multiple processes. In contrast, unskilled writers tend to need more time to perform each individual process. Although Participant 4 reported that she was trying to employ different processes at the same time, her final band on the tasks suggested that she failed to execute these processes successfully.

To sum up, over two-thirds of the participants reported conceptualising their ideas while reading the task instructions, and more than half of the participants carefully read the task instructions so as to familiarise themselves with the purposes and requirements of the tasks. There are several differences in the cognitive processes employed on Part 4a and Part 4b. More participants reported an awareness of the intended reader and revising their plan on Part 4b than Part 4a.

Meaning and discourse construction

Table 24 presents mean, standard deviations of the rating (4=strongly agree; 3=agree; 2=disagree; 1=strongly disagree) and the percentage of agreement for each question item (n=9) of the meaning and discourse construction phase on Part 4a and Part 4b.

Table 24: Individual question items of meaning and discourse construction phase on Part 4a and Part 4b

		Part 4a			Part 4b		
No	Question item	Mean	SD	% of agree/ strongly agree	Mean	SD	% of agree/ strongly agree
Q1	I read the task instruction carefully to understand each word in it.	3.17	0.75	80.00%	2.94	0.80	65.70%
Q6	I read through the whole of the given notice carefully.	3.17	0.86	77.20%	2.86	0.94	65.70%
Q7	I read the whole of the given notice more than once.	3.17	1.07	85.70%	2.69	1.16	62.90%
Q8	I searched quickly for parts of the notice which might help complete the task.	2.26	0.98	45.70%	1.97	0.86	25.80%
Q9	I read the relevant parts of the notice carefully.	2.31	0.96	48.60%	2.34	0.87	42.90%
Q11	I took notes on or underlined the important ideas in the notice.	1.14	0.69	8.60%	1.17	0.62	5.70%
Q13	I linked the important ideas in the notice to what I knew already.	1.83	0.92	28.60%	1.89	1.08	22.80%
Q20	I developed new ideas while writing.	2.74	0.82	62.80%	2.97	0.89	71.40%
Q22	I selectively re-read the notice while writing.	3.09	0.89	85.70%	2.57	0.98	51.40%

Of the participants, 85% reported re-reading the whole notice more than once (Q7) and re-reading the notice selectively while writing (Q22), and about 80% reported careful reading of the task instructions and the notice at a global level (Q1 and Q6) on Part 4a. Also, around 60% reported generating new representations while writing (Q20). However, about 30% reported connecting different ideas while reading the notice (Q13) and around 10% reported connecting and generating ideas by taking notes or highlighting the ideas in the notice (Q11).

In comparison, on Part 4b about 70% of the participants reported generating new representations (Q20) and about 65% reported global careful reading of the task instructions and the notice (Q1, Q6 and Q7). However, only about 25% reported searching reading (Q8) and connecting ideas (Q13). Just 5% reported connecting and generating ideas by taking notes or highlighting the ideas in the notice (Q11).

On Part 4a, 80% of the participants employed global careful reading of the notice, whereas only about 65% did so on Part 4b. This is most likely because they had already understood the notice with careful reading on Part 4a. This may have reduced the demand to employ careful reading on the same material on Part 4b (see Extract 8).

Extract 8

"I spent less time on Part 4b to read the notice before starting writing than on Part 4a. This is because I have already read the notice on Part 4a to understand the content." (Participant 6: B2.1)

Furthermore, 86% read the notice more than once (Q7) on Part 4a, while 63% did so on Part 4b. The interview gave us further details on the test-takers' cognitive activities while reading the notice, as presented in Extract 9.

Extract 9

"After reading the notice three times, I started to do planning in Japanese and then translated my ideas into English in my mind. The reason why I read the notice three times was I did skimming to understand the content of the notice at the first reading, I did careful reading thoroughly at the second reading and then I was thinking of what I would write on Part 4a at the third reading." (Participant 3: below B1)

Before starting to write an email on Part 4a, Participant 3 spent much time understanding the notice by reading it three times, then conceptualised her ideas in Japanese and translated them into English. Japanese language (L1) was frequently used for generating ideas. However, another interview presented a different reading behaviour from Participant 3, as shown in Extract 10.

Extract 10

"I read the task instructions very carefully in order to understand what I should do on the tasks and then read the notice. Due to the time constraints, I did not translate each sentence into Japanese; instead I did skimming." (Participant 4: below B1)

Participant 4 appeared to be very aware of the time constraints given on Part 4a and Part 4b tasks, which made her decide not to use translation (from L2 to L1) strategies while reading the notice, so as to save time for writing. It can be said that she engaged with conceptualisation of the tasks via the target language. She also commented in the interview that she frequently uses translation strategies in real-life conditions. Nevertheless, as she noticed that translation strategies would take too much time to complete the reading, she attempted to understand the meaning of the notice without using any translation strategies.

A similar pattern was found that only a few participants reported underlining the important ideas while reading the notice (Q11) on Part 4a and Part 4b, 9% and 6%, respectively. This is because the test-takers were completing the test tasks on a computer without using paper and pen. They tended to plan or highlight parts that were relevant to their writing in their mind (see Extracts 11 and 12).

Extract 11

"I wanted to make a plan before writing; however, as I did not have either a pen or a sheet of paper, I could not make a plan before writing." (Participant 5: B1.2)

Extract 12

"As I could not highlight important parts of the notice on the computer, I kept my eyes on the parts so as not to miss them." (Participant 6: B2.1)

These comments imply that they had the intentions of highlighting the important parts or writing down a plan on paper. It might have helped the test-takers if some sort of highlighting function on the reading texts had been allowed.

A comparison between Part 4a and Part 4b also demonstrates several interesting findings. First, there was a similar pattern in terms of developing new ideas while writing (Q20). On Part 4b, 71% reported developing new ideas; similarly, 63% reported doing so on Part 4a. Both tasks required test-takers to give suggestions based on their existing background knowledge of the topic. The small different degree of agreement could be because of the difference in word requirement. Part 4a required test-takers to write 50 words and Part 4b 120–150 words. The higher demand in number of words would impose a higher demand to generate new content.

Another interesting aspect was found in the way they read the notice. When reading the notice before writing, 46% of the participants reported scanning the notice (Q8) on Part 4a and only 26% agreed with this on Part 4b. However, while writing, 86% of the participants employed re-reading of the notice selectively (Q22) on Part 4a, compared to 51% on Part 4b. The results indicate that they did selective reading more while writing, than before writing. This implies that the participants firstly employed careful reading strategies to understand the notice comprehensively, and then once they started writing the emails, they selectively re-read the parts of the notice which they needed to refer to in their emails.

In summary, the majority of the participants carefully read the task instructions and the notice so as to construct a representation of the task on Part 4a, and 60–70% of them developed new ideas while writing on Part 4a and Part 4b.

Organising

Table 25 below presents mean, standard deviations of the rating (*4=strongly agree; 3=agree; 2=disagree; 1=strongly disagree*) and the percentage of agreement of each question item (n=6) of the meaning and discourse construction phase on Part 4a and Part 4b.

Table 25: Individual question items of organising phase on Part 4a and Part 4b

		Part 4a			Part 4b		
No	Question item	Mean	SD	% of agree/ strongly agree	Mean	SD	% of agree/ strongly agree
Q12	I prioritised the important ideas in the notice in my mind while reading the notice.	1.57	1.07	17.20%	1.43	0.92	14.30%
Q15	I organised the ideas I planned to include in my writing before starting to write.	2.06	1.00	34.30%	2.51	1.04	57.20%
Q16	I re-combined or re- ordered the ideas to fit the structure of my writing before starting to write.	2.03	1.15	40.00%	2.34	1.28	57.10%
Q17	I removed some of the ideas I planned to write before starting to write.	1.74	1.15	28.60%	1.83	0.99	25.80%
Q18	I tried to organise my writing based on the structure of the notice before starting to write.	2.11	1.05	42.80%	2.00	1.09	31.50%
Q19	I sometimes paused to organise my ideas while writing.	3.4	0.85	91.40%	3.37	0.73	85.70%

In this phase, the majority of the participants reported that they paused to organise their ideas while writing (Q19) on both Part 4a and Part 4b. In contrast, only a low percentage of the participants reported that they prioritised the important ideas while reading the notice (Q12) on Part 4a and Part 4b; 17% and 14%, respectively. This could be because the Aptis tasks use a notice as a prompt.

A closer look at the organising processes reveals a difference between Part 4a and Part 4b. On Part 4b, almost 60% of the participants reported that they had organised or reorganised their ideas to fit the structure of their writing (Q15 and 16), compared to less than 40% on Part 4a. This could be a result of their strong awareness of the differences in writing style (informal/formal) and intended readers (their friends/the sports centre) between the two tasks (see Extracts 13 and 14).

Extract 13

"As I had no ideas about appropriate words/phrases to show politeness, I kept thinking of how to organise to write the email on Part 4b." (Participant 4: below B1)

Extract 14

"I was struggling to organise relevant information before writing and to choose appropriate phrases, words and expression in a formal style." (Participant 5: B1.2)

Only a quarter of participants reported removing some ideas they had planned to write before starting to write (Q17) on both Part 4a and Part 4b. This implies that the majority of the participants adhered to the original plan that they made.

In short, the majority of the participants reported that they stopped to organise their plan while writing both on Part 4a and Part 4b, and about one-third of them organised their ideas before writing on Part 4a and half did so on Part 4b. However, few participants reported prioritising important ideas in the notice while reading, and removing planned ideas while writing.

Low-level monitoring and revising

Table 26 illustrates mean, standard deviations of the rating (*4=strongly agree; 3=agree; 2=disagree; 1=strongly disagree*) and the percentage of agreement for each question item (n=4) of the meaning and discourse construction phase on Part 4a and Part 4b.

Table 26: Individual question items of low-level monitoring and revising phase on Part 4a and Part 4b

		Part 4a			Part 4b		
No	Question item	Mean	SD	% of agree/ strongly agree	Mean	SD	% of agree/ strongly agree
Q31	I checked the accuracy of the sentence structures and the range of sentence structures while writing.	2.06	1.14	40.00%	2.26	1.07	45.70%
Q32	I checked the appropriateness of vocabulary and the range of vocabulary while writing.	2.09	1.01	37.10%	2.26	1.07	45.70%
Q39	I checked the accuracy of the sentence structures and the range of sentence structures after writing.	2.14	1.17	45.70%	2.23	1.19	48.60%
Q40	I checked the appropriateness of vocabulary and the range of vocabulary after writing.	1.94	1.16	31.40%	2.20	1.13	45.70%

In this phase, less than 50 % of the participants reported monitoring and revising at low level on either Part 4a or Part 4b. Participants seemed to focus a bit more on sentence structures (Q31 and Q39) than on lexical appropriateness and range (Q32 and Q40) on Part 4a. Such a difference is not evident on Part 4b. There is also no evidence of distinction between monitoring and revising processes performed during writing (Q31 and Q32) and those performed after writing (Q39 and Q40). The data from the interviews uncovered the interviewees' perceptions of the appropriate use of words (see Extracts 15 and 16).

Extract 15

"If I used inappropriate words or made mistakes on the spellings of the words, I was very much aware of them." (Participant 1: B1.2)

Extract 16

"The expressions I thought of as formal and polite might not be polite to the readers. For some people, the expressions may be rude. So I spent too much time choosing appropriate expressions and words in order to be polite to the readers." (Participant 4: below B1)

In real-life conditions, it is common that Japanese students use an English dictionary while writing, to find English words and ensure their appropriateness. In the test situation, however, they were not allowed to use a dictionary. This is perhaps why more than half of the test-takers did not report monitoring and revising the quality of their vocabulary.

High-level monitoring and revising

Table 27 provides details on mean, standard deviations of the rating (*4=strongly agree*; *3=agree*; *2=disagree*; *1=strongly disagree*) and the percentage of agreement of each question item (n=13) of the high revising and monitoring phase on Part 4a and Part 4b.

Table 27: Individual question items of high-level revising and monitoring phase on Part 4a and Part 4b

		Part 4a		Part 4b			
No	Question item	Mean	SD	% of agree/ strongly agree	Mean	SD	% of agree/ strongly agree
Q24	I checked that the content of the emails was relevant while writing.	1.94	1.14	31.50%	2.31	0.93	48.60%
Q25	I checked that the emails were well-organised while writing.	1.97	1.04	31.40%	2.37	1.06	48.60%
Q26	I checked that the emails were coherent, e.g. appropriate use of topic sentences, connectives and signals of changes in ideas etc. while writing.	2.11	1.16	37.20%	2.66	0.94	62.80%
Q27	I checked that I included all appropriate main ideas from the notice while writing.	2.00	1.14	28.60%	2.46	0.98	45.70%
Q28	I checked that I included my own viewpoint about the notice while writing.	2.11	1.13	37.20%	2.46	1.04	51.40%
Q29	I checked that I had put the ideas of the notice into my own words while writing.	2.00	1.11	37.20%	2.57	1.07	60.00%
Q30	I checked the possible effect of my writing on the intended reader while writing.	1.83	1.15	28.60%	2.51	1.04	51.40%
Q33	I checked that the emails were well-organised after writing.	2.14	1.00	31.40%	2.43	1.01	51.40%
Q34	I checked that the emails were coherent, e.g. appropriate use of topic sentences, connectives and signals of changes in ideas etc. after writing.	2.14	1.12	31.40%	2.37	1.06	48.60%
Q35	I checked that I included all appropriate main ideas from the notice after writing.	2.11	1.18	37.20%	2.34	1.08	51.40%
Q36	I checked that I included my own viewpoint about the notice after writing.	2.23	1.22	40.00%	2.49	0.98	54.30%
Q37	I checked that I had put the ideas of the notice into my own words after writing.	2.09	1.22	37.10%	2.43	1.09	57.20%
Q38	I checked the possible effect of my writing on the intended reader after writing.	1.83	1.10	25.70%	2.34	1.14	48.50%

On Part 4a, 40% of the participants reported monitoring and revising of their own viewpoint after writing (Q36); however, only 20–30% reported such monitoring and revising during and after writing when regarding the content, coherence, organisation and intended-reader. On the other hand, on Part 4b, 63% reported checking the coherence of their email (Q26) and 60% checked whether they had included the ideas from the notice in their own words (Q29). Fifty one per cent (51%) checked the possible effect of their writing on the intended reader (Q33). The reason why more participants reported these processes on Part 4b was perhaps because Part 4b required them to write a formal email. And they believed that one should be more careful with accuracy and appropriateness when writing a formal email.

Time constraint seemed to be another reason why only half of the participants reported monitoring and revising their writing on Part 4b and even fewer on Part 4a (see Extract 17).

Extract 17

"I did not have enough time to check my final draft and edit them at all. Unfortunately, I could not finish writing Part 4b task. If I had had more time, I could have checked the draft in terms of grammatical mistakes, word choices, organisation and content carefully." (Participant 6: B2.1)

While the findings here are indicative, Aptis might want to investigate further if Japanese students require longer task times to revise their writing than other L2 candidates.

4.4 The context and cognitive validity of Aptis Writing test Part 4 in the Japanese context

4.4.1 Comparisons of the contextual features between Aptis Part 4 and real-life tasks

As described in detail previously, the contextual features of the 25 real-life writing tasks and the Aptis Writing test Part 4 tasks were analysed by the two researchers independently using the contextual parameters proforma. We have presented the results in Sections 4.2.1 and 4.3.2 in detail. Here we focus on the discussion with regards to the context validity of the Aptis Writing test Part 4 in the Japanese context.

The summary of findings of the contextual parameter proforma item 1–7 are presented in Table 28 to compare the contextual features between the Aptis Writing test Part 4 and the real-life tasks. The results from the survey of the predominant writing activities in Japan (for details, see Section 4.1) are discussed where appropriate to shed light on the wider context.

Table 28: Summary of findings of the contextual parameter proforma

Overall task set	ting	Predominant writing activities by survey	Real-life tasks by analysis (n=25)	Aptis Writing Test Part 4 by analysis (n=2)	
1. Purpose n=mean: (1=unclear, 4=clear)		Not applicable	1.4	4	
2. Topic domain	Personal Social Academic Professional	18% 31% 40% 11%	76% 24% 0% 0%	50% 50% 0% 0%	
3. Genre	Short continuous discourse Guided essay Argumentative essay Email Report Case study Summary Explanation of graphs/pie chart	0% 0% 33% (Essay) 0% 20% 3% 34% 10%	60% 24% 16% 0% 0% 0% 0%	0% 0% 0% 100% 0% 0% 0%	
4. Cognitive demands	Telling personal experience or viewpoints Summarising or organising given ideas Transforming given ideas into new representations	Not applicable	100% 0% 0%	100% 0% 0%	
5. Language functions to be performed n=mean: (1=of no importance, 4=of great importance)	Describing Reasoning Organising Expressing – personal view Evaluating Classifying Comparing Summarising Persuading Citing sources Synthesising Defining Recommending Predicting	3.43 3.33 3.68 3.32 3.23 3.04 3.35 3.48 3.42 3.37 3.26 3.21 2.73 2.57	4.0 4.0 4.0 1.12 1.12 1.12 1.0 1.0 1.0 1.0 1.0	4.0 4.0 4.0 4.0 1.0 1.0 1.0 1.0 1.0 1.0 1.0	
6. Clarity of intendent n=mean: (1=und		Not applicable	1	4	
7. Knowledge of one nemean: (1=uncl		Not applicable	1	4	

Genre

The genre of both the Aptis Writing test Part 4 tasks was email. The participants were expected to write two emails with different registers: formal and informal. In short, they needed to demonstrate their understanding of the difference between writing to a friend and writing to an authority (The British Council, 2013). In contrast, the genres of the real-life tasks collected in this study included a short continuous discourse, guided essay and argumentative essay, which was one of the most predominant writing activities of the survey. Although the participants in this study were not required to produce emails during their Year 1 tasks, the Course of Study (MEXT, 1999) states that Japanese students are supposed to have mastered writing emails in English at secondary school. As presented previously, according to the lecturers, most Japanese university students are not able to produce a summary, report or case study in English until they progress to Year 2 or Year 3 of their studies. If Aptis is to be used as a university entrance test in Japan, a wider range of genres should be used to encourage teaching and learning of other academic genres.

The purpose of the task

The purpose of the real-life tasks were generally perceived as unclear, although the lecturers may have provided students with additional guidance in class. In contrast, the purpose of the Aptis Writing test Part 4 tasks was clearly mentioned. Acknowledgement of the purpose of the task was of great importance for test-takers, as the task is 'an activity that involves individuals in using language for the purpose of achieving a particular goal or objective in a particular situation' (Bachman & Palmer, 1996, p.44). Without knowing the purpose of the task, the participants would have been misdirected to complete the tasks, which could have led them to demonstrate writing constructs which were irrelevant to the tasks. All the interviewees clearly told us about their understanding of the purposes of the Aptis Writing test Part 4 tasks, see Extract 18 as an example:

Extract 18

"I thought of the content, organisation and style on Part 4b more than Part 4a. This is because Part 4a was to write one of my friends an email on which I should use an informal style, whereas Part 4b was to write an email to the sport club. I thought I should show them politeness on Part 4b." (Participant 2: below B1)

The task purpose is also provided in the Aptis Candidate Guide (The British Council, 2013), though the participants did not have access to this document. A clear presentation of the purpose of the Part 4 tasks seemed to motivate the participants to engage in the Part 4 tasks.

Topic domain

The topic domain of the real-life tasks collected in this study was largely personal (76%), followed by social (24%). Similarly, those of Aptis Writing test Part 4 were personal (50%) and social (50%). However, those topic domains are identified as less prominent than academic topics in the wider Japanese academic contexts.

Participants in this study appeared to be comfortable with the topic domains of the Aptis tasks, as they are required to write in the same domains in real life (see Extracts 19 and 20).

Extract 19

"The tasks were not too difficult." (Participant 1: below B1)

Extract 20

"The tasks were not too difficult to write. I really enjoyed doing the tasks." (Participant 6: B2.1)

However, one of the interviewees reported misunderstanding the social context of the tasks as shown in Extract 21.

Extract 21

"I then realised that I had totally misunderstood the notice. I thought the notice came from a club/society in a university." (Participant 5: B1.2)

The participant's assumption reflects the social experience in their community. It seems that joining a fee-charging sports club outside their university may not be so common for Japanese university students; instead, they tend to join a club within their universities. Despite the students' familiarity with the topic domains (personal and social), the content used in the Aptis task could have been unfamiliar to some of them. For example, the information from *The Aptis Candidate Guide* said that typical activities include 'applying for a visa' (The British Council, 2013, p.19). This might be less familiar to test-takers who live in their home country and have little necessity to apply for a visa; it could be more useful for people who are planning to study abroad or work overseas. Therefore, depending on the test-takers' familiarity with the topics in terms of their real-life experiences, their understanding of the task and the resulting writing performance could be affected.

Cognitive demands

The level of cognitive demand of a writing task can be divided into three levels: 1) telling content based on existing background knowledge; 2) summarising or organising/reorganising content; and 3) transforming content from multiple sources (Bereiter and Scardamalia, 1987). The cognitive demand of both the real-life tasks and the Aptis Writing test Part 4 were perceived as telling content, based on the test-takers' existing background knowledge. The knowledge telling process enables 'less-skilled writers to produce enough on-topic-material whilst working within manageable cognitive complexity constraints' (Grabe & Kaplan, 1996, p.124).

While both the real-life and the Aptis tasks require students to generate content from their memory based on the topic and genre, it appears that the Aptis Writing tasks are more cognitively demanding as they require the test-takers to evaluate the issues presented and provide suggestions. The Aptis Writing test Part 4 requires test-takers to interact between input materials (the notice) and output (emails about the notice), to some degree. In contrast, the real-life tasks simply require the students to explain their own opinion. In addition, under test conditions, the participants were not allowed to use a dictionary and needed to complete the tasks within the allocated time. These differences are making the Aptis Writing test Part 4 more cognitively demanding than the real-life tasks for Japanese students in this respect. It is perhaps beneficial to highlight the differences between the conditions and emphasise the need for time management as test preparation in *The Aptis Handbook*.

Language function to be performed

The most important language functions on the real-life tasks included *describing*, *reasoning*, *organising*, and *expressing personal views*, whereas the most important language functions on the Aptis Writing test Part 4 included *evaluating* and *persuading*, in addition to the four functions required by the real-life tasks. The findings acknowledge that the four functions (*describing*, *reasoning*, *organising* and *expressing personal views*) are crucial for both the real-life tasks and the Aptis Writing test Part 4. According to the online survey, these functions were also identified as the prominent language functions demanded when writing in Japanese universities. Although *evaluating* and *persuading* were not reported as core functions in the real-life tasks collected in this study, these were reported as important functions in the wider Japanese context. This shows that the Aptis Writing test Part 4 demands a fair representation of the of the core language functions required in academic writing activities in Japan.

Clarity of intended reader

Writing is viewed as social interaction between writer and reader in a communicative dimension (Shaw & Weir, 2007). Knowing the target audience will help the writer to shape the written product to make it appropriate to the reader (Hyland, 2002). The Aptis Writing test Part 4 clearly provides information on the intended readers in the task instructions, while the real-life tasks did not provide specific information about intended readers.

According to the interviews with the lecturers, they thought that awareness of the audience was of little importance in their pedagogical practices. Despite the lack of importance assigned to awareness of intended the audience by the lecturers, the participants were very aware of the need to meet the expectations of the intended readers on the Aptis Writing test Part 4. This awareness could be a result of the clear presentation of the intended reader in the Aptis test.

Knowledge of criteria

It is important to provide test-takers with clear information about the marking criteria. This is because not having a clear idea of how the tasks will be judged would affect 'both planning and execution mechanisms in the cognitive processing involved in task competition' (Weir, 2005, p. 63). Therefore, test-takers should be informed of what components of their writing product will be assessed. As for the Aptis Writing test Part 4, specific information about its marking criteria is published in *The Aptis Candidate Guide* (The British Council, 2013, 2014). According to the guides (The British Council, 2013, 2014), the purpose of writing the two emails, which make up Part 4, is to judge whether the test-takers understand the difference of register between Part 4a and Part 4b. In detail, areas assessed by the test are 'task fulfilment and register, grammatical range and accuracy, vocabulary range and accuracy and cohesion' (The British Council, 2014, p.45).

In contrast, it is not clear whether the participants fully understood the marking criteria of the real-life tasks from the task prompts. From the interviews, we learnt that the lecturers gave students feedback on their writing in terms of grammar, word choice, content and organisation. Feedback on their draft of the real-life tasks from their lecturers could possibly foster students' awareness of these components in their revision or a new piece of writing.

In short, the Aptis task resembles the contextual features of the Year 1 real-life tasks in a single Japanese university collected in this study in a number of important ways. Nevertheless, according to the survey in the wider Japanese context, there is a seeming discrepancy between the demand of the Aptis task (as well as what is being used in Year 1 in the reality as evident in this study) and that of what will be ultimately expected of the Japanese students in the wider context. It is, however, beyond the scope of this report to discuss such issues.

4.4.2 Comparisons of the cognitive processes between Aptis Part 4 and real-life tasks

As explained previously, the real-life tasks collected in this study can be categorised into three types: short continuous discourse, guided descriptive essay, and argumentative essay. These task types are commonly used in Japanese universities, where writing in English is not always required in Year 1 studies, to prepare students for the demand of writing in English when they progress their studies. (This is different from where students are expected to write in English as soon as they start the university program in many other countries). These tasks required the students to perform a range of processes. Some of the processes such as *task representation, macro-planning, organising ideas, low-level monitoring and revising* appeared to be more important than others, such as *connecting different ideas and generating new ideas* and *high-level monitoring and revising* for the successful completion of the real-life tasks collected in this study, as shown in Table 20 above. However, it is important to note that short continuous discourse and guided descriptive essay are mainly used for pedagogical purposes, which means not all cognitive processes are required.

Here we, therefore, discuss the cognitive validity of the Aptis Writing test Part 4 with regards to the demands imposed by the argumentative essay tasks, in which all these processes are required. The cognitive processes elicited by the Aptis Writing test Part 4 have already been presented in detail in Section 4.3.3, based on the data from the questionnaire and individual interviews with the participants. Here we focus on the discussion of the extent to which the Aptis can adequately elicit all these target processes.

Conceptualisation

Conceptualisation (Kellogg, 1996; Field, 2004, 2011) is the first phase of productive skills where the writer develops an initial mental representation of a writing task. Processes involved at this phase include task representation (Flower et al, 1990) and macro-planning (Hayes & Flower, 1980; Shaw & Weir, 2007), including consideration of the target readership, of the genre of the text and of style (the level of formality).

Regarding the Aptis Writing test Part 4, the data from the questionnaire shows that, although there is large variation between the individual processes overall, less than half of the students employed the conceptualisation processes on Part 4a and slightly more than half did so on Part 4b. The findings show that about two-thirds of students reported conceptualising ideas, and 50–60% of them reported re-reading the task instructions to understand them on Part 4a and Part 4b. Interestingly, a greater proportion of the students reported being aware of the needs of the intended reader on Part 4b than on Part 4a (60% and 37%, respectively).

According to the data from the interviews, some students made a plan for their emails in their minds. Others did this while they were reading the task instructions and while writing. However, not many participants reported adjusting their writing plan, especially on Part 4a. This is perhaps either because of their satisfaction with the plan, or because of insufficient time left to revise it.

Meaning and discourse construction

The meaning and discourse construction phase involves three cognitive activities: 1) contextualising abstract meanings based on the contextual clues given in the writing tasks; 2) identifying what information is relevant to the context; and 3) identifying how information from different sources connects to each other (Field, 2013 as cited in Chan et al, 2014). Careful reading, searching reading, and connecting and generating ideas are commonly used in the phase (Chan, 2013).

The argumentative essay tasks collected in this study do not include any input texts. As a result, students only had to generate ideas from their long-term memory and contextualise them with regards to the essay task. In comparison, the Aptis Writing test Part 4 tasks impose a higher demand of the processes associated with this phase. Test-takers reported employing careful reading of task instructions and input texts (even though the text was rather short) as well as generating ideas in response to the task and connecting with them for the purpose of the tasks. Test-takers believed that an understanding of the task purposes and the prompt (i.e. the notice being crucial for them to effectively communicate with the intended reader, and careful reading) was essential.

However, there are some interesting differences between the two conditions. First, despite the participants' clear understanding of the task purpose as they reported in the interview, it seems they had great difficulty translating their abstract ideas in English within the allocated time. Matsuda (2001) argued that the difficulties faced by Japanese L2 writers in constructing their voice in English written discourse are due to the different ways in which voices are construed in Japanese and English, as well as the lack of familiarity with the strategies available in English. As reported in the interviews, the participants in this study seemed to struggle to find the appropriate rhetorical structures expected in a formal English email.

The other interesting difference in the participants' cognitive process in the meaning and discourse construction phase, when taking the real-life tasks and the Aptis Writing test Part 4, appeared to lie in the participants' use of the Japanese language. In the real-life tasks, they tended to construct their discourses in Japanese and then translate them into English, because they had sufficient time to spend contextualising their ideas. However, in the Aptis Writing test Part 4, the time constraints seemed to force them to generate the ideas "in English" and to immediately construct the ideas into written discourse in English without using Japanese. In Maarof and Murat's (2013) study, they examined strategies used in essay writing among 50 high-intermediate and low proficiency ESL upper secondary school students. The study found that the high-intermediate students tended to think, plan and outline in English before they started their writing task; in contrast, the low proficiency students used more translation strategy and bilingual dictionaries to help them in their writing task. The Aptis Writing test may encourage the participants to avoid the translating strategies, which are usually used by writers with low proficiency. However, this might have a negative impact on students' performance, especially for those who rely heavily on translating strategies in real-life. Therefore, it is important to provide some guidelines in the Aptis handbook.

Organising

Organising is a phase where "the writer provisionally organises the ideas, still in abstract form, (a) in relation to the context as a whole and (b) in relation to each other" (Field, 2004, p. 329). Regarding the Aptis Writing test Part 4, the data from the questionnaire shows that less than half of the students, generally speaking, employed the organising processes on the Aptis Part 4a and 4b tasks. In terms of individual processes, the majority of the students stopped to organise their ideas while they were writing Part 4a and Part 4b, whereas less than half of them reported organising their ideas while reading the notices and before writing on Part 4a, and half did so on Part 4b. These results imply that the participants tended to organise their ideas more as they wrote, than at other stages of the task. Furthermore, less than one-third reported removing some ideas which they had planned. This supports the result that only one-third of the participants reported changing their plan in the conceptualisation phase. It is important to mention that only one-sixth of them reported prioritising important ideas in the notice. The demand of such processes is more evident in the real-life tasks, which require students to read and produce argumentative texts.

The interviews from the lecturers show that they regarded organising as one of the most important processes. Students were encouraged to discuss how to organise their ideas with their peers. They also regarded a clear and effective organisation of their writing to be an important component of their marking criteria. Also, the data from the interviews with the participants showed that all the interviewees, to some extent, organised their ideas while reading the notices and while writing emails. Due to the time constraints, it seems spending more time producing a piece of writing rather than 'organising' ideas, was their first priority in order to achieve the task goal, which could result in less engagement with the organising processes before writing. It could be helpful to inform test-takers of the importance of the organising process in the Aptis handbook so that they can become good writers.

Low-level monitoring and revising

At a low level, monitoring and revising concerns the mechanical accuracy of spelling, punctuation and syntax (Shaw & Weir, 2007). According to the data from the questionnaire, about 40% of the participants employed monitoring and revising at a low level on the Aptis Writing test Part 4. These findings suggest that the participants appeared to employ these processes less on the Aptis Writing test Part 4 than the real-life tasks.

The data from the interviews with the participants revealed that they were fully aware of the importance of demonstrating accuracy of syntax and spelling, and a good range of vocabulary in their writing. They understood the effect of grammatical and lexical errors at a low level on the intended readers' understanding of a piece of writing. However, there was an obvious gap between what they believed was important and what they were able to perform under the test conditions. Some of them were aware that they were not able to do so due to time-constraints. It is commonly believed that L2 writers, especially those with lower proficiency in English, are less able to monitor the quality of their writing while writing because the cognitive effect is mostly engaged in producing the discourse. Therefore, they tend to, if they do at all, monitor and revise the quality of their writing at the end of the entire text production process.

High-level monitoring and revising

At a high level, monitoring can involve 'examining the text to determine whether it reflects the writer's intentions and fits the developing argument structure of the text' (Shaw & Weir, 2007, p.59). Less than 40% and about half of the participants employed monitoring and revising processes at a high level on the Aptis Writing test Part 4a and Part 4b. In common with the results of the low-level monitoring and revising phase, these findings show that participants tended to employ high-level monitoring and revising less on the Aptis Writing test Part 4 than on the real-life tasks. The data shows that most of the interviewees were unable to review or revise the whole piece of writing at a high level within the given time. Furthermore, the interview revealed other difficulties faced by the test-takers, mainly to do with unfamiliarity with writing on a computer and insufficient practice of time management.

To summarise, the Aptis Writing test Part 4 was able to elicit all core processes from the participants in this study. However, participants were less engaged in some processes than others due to a range of reasons discussed above. Recommendations to further engage test-takers with these core writing processes are provided in next section.

5. CONCLUSION

5.1 Summary of the main findings

This project aimed to investigate the cognitive validity of the Aptis Writing test in the Japanese university context. In particular, it explored the extent to which the Aptis Writing test Part 4 reflected the features of Year 1 academic writing tasks at a Japanese university and the processes employed by the students when completing these tasks. A mixed-method case study approach was employed to collect data in the wider Japanese university context as well as within a single university. In order to identify the construct of academic writing required in Japanese universities, an online survey was administered, and 91 lecturers from 49 Japanese universities responded. Thirty-five (35) first-year Japanese university students from a large Japanese university completed the Aptis Writing test Part 4a and Part 4b on a computer. Immediately after completing each task, the students filled in the Writing Process Questionnaire. Seven students selected by the participants' lecturers, based on the level of their English proficiency, were interviewed by one of the researchers. In addition, 25 real-life tasks were sampled from two EAP modules. The lecturers of the two modules were interviewed. The data from the questionnaires was statistically analysed using a computer program, SPSS, to identify the common patterns in the cognitive processes. The real life tasks and the Aptis tasks were analysed by both of the researchers using the Contextual and Cognitive Parameter Proforma. The data from the interviews were thematically analysed using a qualitative computer program, NVivo 10. We summarise the main findings of each research question.

RQ1: What is the contextual cognitive construct of academic writing in English at a Japanese university?

The online survey investigated the writing constructs expected of Year 1 students across Japanese universities in terms of genre, language functions and topic domains. The results show that the prominent genres are essay, summary and report. The topics are mainly in academic and social domains. The language functions which are expected to be performed are extensive, including describing, reasoning, organising, expressing personal view, evaluating, and synthesising. However, discrepancies were shown between the survey results and what is actually expected of Year 1 Japanese students at a single university. According to the initial task survey, academic writing in English was rare among Year 1 modules. Almost all subject modules require writing in Japanese only. As a result, 25 tasks were sampled from the English Department.

The analysis showed that the genres of these sampled tasks include short continuous discourse, guided essay and argumentative essay about personal and social topics. These tasks require the Year 1 students to relate personal experiences or viewpoints using language functions such as describing, reasoning, organising and evaluation, and expressing personal views. It should be noted that the former two task types were mainly used for pedagogical purposes to prepare student to complete the argumentative essay tasks. Therefore, only the argumentative essay tasks were used for analysis in RQ2.

RQ2: To what extent does Aptis Writing test Part 4 resemble the contextual features of Year 1 writing tasks sampled at a single Japanese university and elicit the cognitive processes students employ to complete these tasks in real-life?

Regarding the contextual features, the Aptis Writing test Part 4 resembles the argumentative essay tasks sampled at a single Japanese university in terms of key parameters such as topic domain, overall cognitive demands and language functions. The Aptis Writing test Part 4 tasks, on the other hand, outperformed the sample real-life tasks in terms of clarity of writing purpose, knowledge of criteria and intended readerships, all of which are considered to be essential for a valid writing assessment task. It should be noted that while the sampled real-life tasks did not provide such information, students were able to clarify some of the criteria with their lecturers. However, when considering the writing constructs ultimately expected of Japanese students in the wider academic context, a wider range of academic genres, such as summary and report, and some more demanding language functions such as synthesis, should also be represented in the Aptis Writing test.

The results obtained from the two Aptis Writing test Part 4 tasks provide empirical evidence of the target cognitive processes, which we would expect to be measured in a valid writing test. The results show that all target processes in each cognitive phase (*conceptualisation*, *meaning and discourse construction*, *organising*, *low-level monitoring and revising*, and *high-level monitoring and revising*) were reported by a reasonable percentage of the participants. On average, more than 40% of the participants reported using conceptualisation and organising processes on Part 4a (i.e. the informal email). Up to 58% reported using meaning and discourse construction processes. However, only 39% reported monitoring and revising their writing at a low level, and even less did so at a high level. Generally speaking, more participants reported these target processes on Part 4b, except for the meaning and discourse construction processes. About 45% of participants reported using meaning and discourse construction, organising and low-level monitoring and revising processes. More than 50% reported conceptualisation and monitoring and revising their writing at a high level on Part 4b.

Considering the comparatively lower proficiency in English of Japanese students and their unfamiliarity with direct writing assessments, the results are encouraging that they report employing target processes on the Aptis Writing test Part 4 as expected in real-life. More specifically, in the conceptualisation phase, the most prominent cognitive processes elicited by the Aptis test were careful reading of the task instructions and macro-planning of the content of their writing. It is interesting to note that more participants reported using two cognitive processes: the awareness of the intended readers and revising their plan on Part 4b than on Part 4a. Regarding the meaning and discourse construction phase, careful reading of the task instructions and the notice, and developing new ideas, are the most frequently reported processes; in contrast, taking notes or highlighting important parts in the notice was rarely reported due to lack of tools for doing so. Also, the process of linking important ideas seems to be under-elicited by Aptis. Regarding the organising phase, the majority of the participants reported stopping to organise their ideas while writing, whereas only some participants reported prioritising the important ideas in the notice or removing some of the planned ideas. Less than half of the participants reported using low-level monitoring and revising processes on both tasks, which is somewhat surprising because this is one of the dominant processes for lower proficiency writers in general. As mentioned previously, more students reported monitoring and revising their writing at a high level on Part 4b than on Part 4a, most likely because of the formal register of the second task.

According to the interviews, the participants attempted to perform all the cognitive processes in the same way as they completed the real-life tasks. However, some different strategies were reported, due to computer-based test conditions. The time management and typing skills of some participants appeared to hinder them from spending sufficient time planning, organising, and revising at low and high levels.

5.2 Limitations of the study

We acknowledge several limitations of this research project. Firstly, this was a small-scale study and the number of participants was limited; therefore, the findings can only be generalised to a specific context that is similar to the context of the study, i.e. a Japanese university. Secondly, due to the limited scope of the project, the project selected Part 4 only from the four tasks of the Aptis Writing test. Based on the background of the study, the aim of the study was to investigate the cognitive processes of test-takers while constructing a piece of continuous writing. Aptis Part 4, which is the only section assessing direct writing, was deemed most suitable.

In terms of methodology, although think-aloud or verbal protocol is widely accepted as a useful research technique, which helps to uncover cognitive and decision-making processes when performing tasks (e.g. Wang & Wen, 2002, Yu et al, 2011), this project used a Writing Process Questionnaire as the means of investigating the cognitive processes of the test-takers. This is because it was considered that there were several disadvantages to using think-aloud protocol in this project. First, it could be time-consuming to conduct the protocol with 38 participants within the allocated time of the classes. Also, this study aimed to investigate test-takers' cognitive processes, so asking them to think aloud under test conditions would raise issues of reactivity. Additionally, the participants were only able to verbalise the processes they are aware of. Japanese students are known to be weak in English writing proficiency. Nevertheless, future studies should use think-aloud or other concurrent methods to investigate Japanese test-takers' writing processes under test conditions.

In addition, further studies are advised to explore the cognitive processes of Japanese students at higher proficiency levels, despite the fact that the proficiency level of the participants in this study was between below B1 and B2 and could be considered appropriate for the context of the project due to the Aptis Writing test's testing English levels from A1–C. Japanese university students who major in English language tend to have better proficiency in English than those in other subjects. Future studies should investigate Japanese university students from a variety of disciplinary backgrounds (e.g. business, social sciences, natural sciences).

5.3 Implications of the findings

Despite the several limitations acknowledged, this project was the first attempt to investigate the contextual and cognitive validity of the Aptis test in the Japanese university. Based on a careful investigation of the contextual and cognitive features of the Aptis Writing test Part 4 tasks and the Year 1 writing tasks at a single Japanese university, the findings demonstrated empirical evidence of the contextual and cognitive validity of the Aptis Writing test Part 4 as a tool to assess whether Japanese students have sufficient English writing skills to study in Japanese universities. There are several implications for Aptis to better cater for the need of Japanese test-takers.

1) Genres of the Aptis Writing test Part 4 tasks

The genre of both the Aptis Writing test Part 4 tasks is email. This study reveals that Year 1 students in Japanese universities are expected to write essays in the EAP modules, and then case studies, reports and summaries in the wider Japanese academic contexts. Therefore, if the Aptis Writing test tasks are being used as a university entrance test, a wider range of genres such as essay and summary should be included. In addition, some more demanding language functions such as synthesis should also be represented in the Aptis Writing test.

2) Seemingly under-representation of some processes

While the results are encouraging that a reasonable percentage of the participants reported employing the target processes on the Aptis Writing test Part 4, some processes seemed to be under-represented. Further investigation should be carried out to confirm this. For example, the process of linking important ideas seems to be under-elicited because the Aptis prompt used in this study included only straightforward texts with limited information units. Less than half of the participants reported using any low-level monitoring and revising processes on both tasks. Students in this study reported that they did not have sufficient time to do so, but on the other hand, some students admitted they had difficulties doing so without a dictionary. It might be useful to state the importance of doing revisions in the test-takers' handbook and provide some guidelines.

3) Guideline on the delivery mode

It was found that the delivery mode could be another factor affecting Japanese test-takers' writing processes. Participants in this study reported that they were unfamiliar with computer-based writing tests and some had limited experience in typing. Future studies need to confirm this finding, but it seems important to include extra support regarding the delivery mode for Japanese test-takers.

4) Highlighting functions

The data showed that some participants intended to highlight the important parts of the test or write down a plan, but as there were no tools on the test interface to do so, they had to drop these processes, or do them in their heads. Previous studies have shown that less proficient writers have greater difficulties in planning or processing texts in their mind than more proficient writers, as their short-term memory is occupied by low-level writing processes. It might help the Japanese test-takers to employ these processes if some sort of highlighting function on the reading texts and note-taking were allowed.

5) Advice on time management

Time management is one of the factors that influence how test-takers employ cognitive processes while engaging in the test. The data of this study suggests that the majority of the participants did not have enough time to complete the test. It could be due to unfamiliarity with the test conditions, but it could also be a result of their poor time management. It might be beneficial for Aptis to publish information on how to manage time while taking the Part 4 tasks in *The Aptis Candidate Guide*.

6) Japanese students' use of L1 translation strategies

According to L2 writing literature, unskilled writers tend to rely heavily on the use of L1 translation strategies (Maarof & Murat, 2013). In this study, the participants also used these strategies, often with a dictionary, when they wrote in the real-life context. The findings reveal that, while some students gave up using L1 translation strategies under test conditions, others relied on them to complete Aptis Task 4. However, these students had great difficulties carrying out the L1 translation strategies without a dictionary. It might, therefore, be helpful to provide some advice regarding the use of L1 translation strategies under test conditions for Japanese students in *The Aptis Candidate Guide*.

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INVESTIGATING THE COGNITIVE CONSTRUCTS MEASURED BY THE APTIS WRITING TEST IN THE JAPANESE CONTEXT: A CASE STUDY

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