

Academic English and Curriculum Development: Materials Evaluation Under a Content Based Instruction (CBI) Rationale

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Summary

The research reported in this paper represents an extension of previous research into the development of a curriculum for the School of Agriculture at Tokai University, but with modifications to research design which improve upon the past research, and which strengthen inferences. The research compares student evaluation of material selected under a (past) generalist agenda with material selected under a new Content Based Instruction (CBI) agenda (Agriculture), and under a repeated measures design. Additionally, the effects of English proficiency (as measured by GTEC scores) on these evaluations was explored, although inferences in this area are attenuated by qualifications, given a lack of design control around the independent variables of teacher and proficiency level of the class. Findings suggest that the CBI reading was perceived to be harder, although for Low Proficiency and Low-Intermediate Proficiency groups there was no perceived difference. There is possible evidence also for the CBI reading being perceived as more interesting in the High-Intermediate Proficiency group, although this did not extend to the High Proficiency Group.

1.0 Introduction

In this section, the previous studies leading up to this study and the rationale for this study are outlined. All of the work, past and present, is situated within an ongoing institutional process of curriculum development for the teaching of academic English in the School of Agriculture.

1.1 Pilot study1: Exploring Academic English for the New Curriculum at Tokai University

This investigation into the implementation of academic English as part of the curriculum for the School of Agriculture at Tokai University is part of an ongoing research trajectory which began as a pilot study in 2015. The results of the first pilot study were published in 2017 (1). The pilot study showed a positive outcome but was limited for having involved only self-selected participants, who were also small in number. A literature review conducted for the pilot study

explored a variety of approaches towards teaching academic English (2-7), including content-based instruction (CBI), language for specific purposes, content and language integrated learning (CLIL) and task-based language teaching (TBLT). CBI was chosen as the most appropriate methodology for the teaching context at Tokai University as it was the most balanced in terms of the technical knowledge required of the teachers, who were not subject matter experts, and it accommodated well with the language needs and interests of the students. CBI falls under the umbrella of communicative language teaching, and its aims are to provide learners with authentic and content-focused materials adapted for their second language (L2) needs. Adaptation might involve simplification of language presented in the materials or, and if this is difficult, scaffolding of difficult language to assist with understanding. CBI has been seen as bridging the gap between general English courses and the more technical readings (or *gaisho koudoku* [外書購読]) that are required after students become members of laboratories in their junior year. Among the three major varieties of CBI identified in the literature (5), which include *theme-based language instruction*, *sheltered language instruction* and *adjunct language instruction*, the theme-based approach appeared to

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be the most appropriate approach for the School of Agriculture at Tokai University given that foreign language teachers were not working in tandem with subject matter experts.

1.2 Pilot study 2: Developing Academic English for the New Curriculum at Tokai University

In order to overcome some of the limitations of the 2015 study, a second, more comprehensive study was conducted involving more than a small cohort of volunteers. Regular classes were used and this allowed for statistical analyses of larger group sizes to compare student perceptions of reading CBI academic English materials versus standard textbook materials (8). Whereas the 2015 study only involved 8 self-selected participants, the second study, conducted in 2017 was nearly 10-fold larger and involved both agriculture and non-agriculture students. This larger study provided some evidence that students studying in the School of Agriculture were more interested in the CBI materials. Due to the research limitations of this study which included the absence of matched pairs, it was determined that further research should be considered to overcome this. The main feature of this research would be the presence of matched pairs in a repeated measures design aimed at reducing Type I (false positive) and Type II (false negative) errors in the statistical analyses.

1.3 New curriculum started in spring 2018

A new curriculum started in spring, 2018. Under this curriculum, Reading & Writing 1 and 2 were re-designated as Reading & Writing and Academic English, respectively, while Listening & Speaking 1 and 2 were re-designated as Listening & Speaking and Global Skills, respectively. Under this scheme, Reading & Writing and Listening & Speaking are first year classes, and Academic English and Global Skills are second-year classes. Therefore in the spring semester of 2018, there were two new curriculum classes underway, namely, Reading & Writing and Listening & Speaking. Both Reading & Writing and Academic English focus on reading and writing skills, though the second-year class (Academic English) does not include these terms in the actual course name. Academic English should also be developed with the cooperation of academic teachers of the respective students' field of specialization, which is, of course, agriculture. Agricultural-focused material, under the new curriculum, is introduced in the first-year class (Reading & Writing), and

this introduction began with the 2018 academic year. There were two topics in the first semester; one related to the global water crisis and the other to the environmental impact of raising cattle. Readings on the topic were provided and a related documentary about the topic was shown. Students were then required to complete a writing activity on the topic. After the water crisis topic was completed, students engaged with a unit from the Cambridge *Unlock Reading and Writing Skills 2* textbook (9). This textbook is to be adopted by the International Education Center at Shonan Campus, Tokai University, from spring 2019 both in Reading & Writing and Academic English. The Center is not operating under the CBI agenda, because there are many faculties at Shonan Campus, and it would be difficult to satisfy this diversity under a CBI agenda. Therefore, the Unlock textbook was chosen as under the rationale of having generalized content. There is some limited content focus in that while some units will be core units to be done by all students, others are for science majors or for humanities majors.

In the latter half of the semester, students studied the environmental impact of raising cattle, and a reading entitled *Cowspiracy* (10) was included as one of the materials for this topic.

In the first two studies (1, 8) agriculture material was found to be more appealing to the agriculture students than the regular reading, but the students were self-selected (1) or of intermediate level (8). Because the English level and motivation of intermediate level students were arguably higher than that of lower level students, this was considered a factor limiting generalization to the entire student body. In this study, students at all levels participated. The purpose was to examine whether the finding in the previous two studies applied more widely.

1.4 General Rationale for using CBI and the Present Study

Brinton, et al. (2) have elucidated at least five distinct rationales supporting the integration of CBI into language programs. The first is based on the need for the syllabus to reflect future usage goals of the learners, which in the case of the School of Agriculture has been shown to be the reading of academic articles in the students' fields. The second rationale is that learners' motivation potentially increases when the materials are aligned with their interests. Thirdly, CBI is seen to have a sound pedagogical foundation in that it builds upon previous knowledge and experience of the learner. The fourth

rationale lies in the situational context of the language use which allows learners to master higher levels of discourse and linguistic conventions by going beyond the more limited focus of sentence level features of discourse. The fifth rationale for using CBI is based on Krashen's input hypothesis (11, 12). Evidence shows that in order to achieve a high level of receptive skills such as listening and reading, it is necessary for the learner to have comprehensible input of the target language in which unfamiliar elements can be understood through context and other clues such as the learner's knowledge and existing schema.

Second language research supports the use of CBI, with studies showing that language studied under CBI can aid in acquisition (13, 14) and that CBI promotes the negotiation of meaning, thus enhancing acquisition (15). Furthermore, Cummin (16), in contrasting the notions of Cognitive Academic Language Proficiency (CALP) with Basic Interpersonal Communication Skills (BICS), emphasized that learners must focus on content in order to develop CALP. Finally, CBI is seen to help learners acquire language by virtue of its facilitation of mediation, consistent with the Vygotskian notion of the Zone of Proximal Development (ZPD), as learners engage in problem solving employing internally directed speech on the path towards task control (17, 18).

The rationale for this study was to provide better research design than in the previous study, allowing for more secure inferences, as well as to further explore the introduction of CBI into the English reading and writing curriculum in the School of Agriculture. This was achieved by expanding the scope of the study to include a comparison with the new curriculum materials proposed by the academic offices of the Shonan Campus of Tokai University, while at the same time including the new Global Test of English Communication (GTEC) test scores as part of the data (19).

2.0 Design and Research Questions

The research design was primarily intended to help establish whether there were significant differences across the two materials (Regular Reading Material and *Cowspiracy* Reading Material) in terms of how students evaluated them for 1) level of interest, 2) level of difficulty, and 3) level of familiarity. The questionnaire survey for each of the two material items used followed the use of the material (i.e. in class

and on separate days), and these separate administrations were matched participant for participant. This allowed for a dependent measures design to compare the evaluation of the two materials. Classes were streamed using scores on the GTEC, and each class had a different teacher. This placed a design limitation on the study in terms of subsequent inferences; i.e. with respect to how proficiency might have influenced outcomes on the dependent variable (i.e. response scores to items on the survey questionnaire). This was because the teacher variable was confounded with the proficiency variable, given that each class had a different teacher rather than the same teacher. Given institutional constraints on design flexibility, and the requirement to deal with intact classes for the execution of the study, these limitations could not be overcome. These constraints on inference, therefore, have to be entered as qualifications when interpretations are made with respect to proficiency in the discussion section. The research questions were as follows:

- RQ1: Was there a significant difference in how students evaluate level of interest for the regular reading and the Cowspiracy reading?*
- RQ2: Was there a significant difference in how students evaluate level of difficulty for the regular reading and the Cowspiracy reading?*
- RQ3: Was there a significant difference in how students evaluate level of familiarity for the regular reading and the Cowspiracy reading?*
- RQ4: Were any of the evaluations for interest, difficulty and familiarity moderated by proficiency level in English?*

3.0 Method

The method for the study is presented in terms of the participants in the study (Section 3.1), the materials used (Section 3.2) and the procedures undertaken (Section 3.3).

3.1 Participants

Students from four reading and writing classes participated. All of them were from the School of Agriculture and there were four classes which were streamed according to level of English proficiency, and these classes could be summarized as follows:

Class 1 (Teacher 1): *Low Proficiency Group*

Class 2 (Teacher 2): *Low-Intermediate Proficiency Group*

Class 3 (Teacher 3): *High-Intermediate Proficiency Group*

Class 4 (Teacher 4): *High Proficiency Group*

(Note: These labels are relative to the groups, and do not reference an external criterion)

Students were placed into the above groups using results from the GTEC which has 21 listening multiple-choice questions and 16 reading multiple-choice questions. New students are required to take this test on entering the University. The version of the test taken by Tokai students is called the GTEC Academic version, and only includes a listening portion and a reading portion. The total test time is approximately 30 minutes, with 21 questions for listening and 16 questions for reading. Each portion of the test has a maximum score of 250 points, for a total maximum of 500 points. The test questions can become harder or easier based on the responses, so it is an adaptive test. The range of the placement test results was 29-111 (Class 1), 113-158 (Class 2), 159-189 (Class 3) and 190-257 (Class 4). These ranges were established when classes were created, and are not the ranges for the final sample extracted for this study, because the final sample involved the removal of some cases (see below) from each class. The agriculture students are generally not confident in their English proficiency; and this includes even students in the most proficient class.

Due to the Kumamoto earthquakes of 2016, the Aso Campus, where the School of Agriculture was located, was severely damaged. From July, 2016, agriculture students started taking their classes at the Kumamoto Campus. Mainly because of this relocation, student enrollment declined by about 10% in 2018. At the same time, there were more students from the affiliated high school in Kumamoto. This resulted in differences between the first-year students and the more senior students. Anecdotally, some of the first-year students have expressed that they were not specifically interested in agriculture, and it is possible that the profile of interest of the new demographic has shifted slightly.

From the four classes selected, there were a total of 116 cases in the initial dataset. However, due to the dependent measures design for this study, it was required that participants reply to the survey on two occasions in the form of matched pairs (once after the regular-material class, and once after the *Cowspiracy*-material class). Given this

requirement, a number of cases had to be removed because 1) a student had attended one administration of the questionnaire but been absent for the other, or 2) a student had omitted to write his/her identifying ID for one, or both, administrations of the questionnaire preventing a matched pair. There were 84 cases remaining after this process was complete. Finally, three further cases were removed, because comments provided by the respondent on the questionnaire indicated that they had focused on all materials used in the class while completing the questionnaire, rather than on the specific material they had been asked to evaluate. The removal of these three cases left a final sample of 81 matched pairs.

There were seven cases where the student had not taken the GTEC test, and there were three cases where either one, or both, components of the test (Listening and Reading) received a score of zero. These three cases were treated as equal to the other seven cases; i.e. the student had not done the test. This is because the most likely explanation for this score of zero is that the student had attended the test nominally, but not attempted it seriously, or given up half-way through. Thus there were 71 cases out of the total of 81 cases where a GTEC score was also available.

3.2 Materials

Each class used two kinds of material. The first was a unit from the regular reading textbook and the second was a reading entitled *Cowspiracy* (10).

The regular reading was selected from Unit 6 of the reading textbook (9), *Unlock Reading & Writing Skills 2*, and the reading selection chosen was *Reading 2*, entitled *Surviving the Sea of Sand —How to stay alive in the Sahara Desert*, by Brad Rogers.

The *Cowspiracy* reading was selected because it was among the materials used in the earlier small-scale pilot study (1) and the more recent study (8); with both of these studies having been conducted under a different design. The topic for the material, under the CBI rationale, was aligned with the subject specialization of the participants, namely, agriculture. The material is essentially a reading which covers a documentary film; essentially explaining the context of the film and its impact on the audience (mostly younger people). *Unlock Reading & Writing Skills 2* is CEFR level A2 and *Cowspiracy* is set at CEFR level B1. This means that in terms of the CEFR scale, the *Cowspiracy* reading was more difficult

than the regular reading, but only by one level on the six levels comprising the CEFR scale (20).

3.3 Procedure

Both material items were taught mainly by a grammar-translation approach, and especially for Class 1 students this may have been a little challenging.

After each material item had been taught, participants responded to a survey, for which the three Likert-scale items comprised the primary data for this report. These items covered the level of interest (Item 1), the level of difficulty (Item 2), and the level of familiarity (Item 3) experienced by each participant having completed working through the material under the instruction of the teacher. The Likert scales for each item were anchored in the following way:

1. Interest – *highest level of interest equals 5 and lowest level equals 1*
2. Difficulty – *lowest level of difficulty equals 5 and highest level equals 1*
3. Familiarity – *highest level of familiarity equals 5 and lowest level equals 1*

Students put their student numbers on the survey so that matched pairs between the first and second administration were possible. The study was conducted under informed consent for both participants and the institution.

4.0 Results

The results are reported in terms of descriptive statistics (Section 4.1) and inferential statistics (Section 4.2). The descriptive statistics describe score distributions for the sample. The inferential statistics address the specific research questions for the study.

4.1 Descriptive Statistics

With respect to the descriptive statistics, these are reported separately for the GTEC scores and the scores from the separate administration of the two questionnaires under a matched-pairs design, and for the two respective materials, namely, the regular material and the *Cowspiracy* material.

4.1.1 Descriptive Statistics for Scores on the GTEC

Descriptive statistics were calculated for scores on the

GTEC; with data available for 71 out of the overall 81 cases in the sample. The minimum and maximum scores were calculated, as well as the mean (as a measure of central tendency) and standard deviation for the mean. Finally, the critical ratio for skew and kurtosis was also calculated. Results are available for inspection in Table 1 below.

Table 1. Descriptive Statistics for scores on the GTEC (N=71) by Listening, Reading, and Total Score

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
GTEC Listening	71	27	131	88.06	23.109	-.760	-.280
GTEC Reading	71	5	132	69.89	30.990	-.830	-1.480
GTEC Total	71	41	257	157.94	50.935	-.820	-1.010

Notable aspects of the results from Table 1 include the lower mean score for reading when compared with listening, as well as the higher standard deviation around this mean when compared to same. Skew and kurtosis on all measures were slightly negative. Assuming a threshold of acceptability for the critical ratio of 2.0, these results are all acceptable, although kurtosis for reading seemed to be higher than for listening, and this affected the overall kurtosis for the total score as well.

4.1.2 Descriptive Statistics for Scores on the Survey Questionnaires

The means, standard deviations, and critical ratios for skew and kurtosis were calculated for the three survey items, and for the first and second administrations of the questionnaire, respectively. These results are presented in Table 2, below.

The results indicate that standard deviation around the means (with means to be compared below in the section on inferential statistics) was just below 1 in all cases; but with standard deviation for the item measuring familiarity for the *Cowspiracy* reading being a little lower. The critical ratio for skew was relatively low in almost all cases, with only the item measuring interest for the *Cowspiracy* reading being a little higher, at just over 2.0. With respect to kurtosis, all results were acceptable. The scale was relatively coarse for these summary statistics, being a five-point ordinal scale, but the results overall are reasonable.

Table 2. Descriptive Statistics for Items on the Survey for Total Sample (N=81) by Regular Reading and *Cowspiracy* Reading

Reading Type and Item	N	Mean	Std. Deviation	Skew	Kurtosis
Regular Reading (Interest)	81	3.44	.975	-1.576	-0.673
Regular Reading (Difficulty)	81	3.15	.950	-0.803	0.516
Regular Reading (Familiarity)	81	2.86	.984	-0.765	-0.949
<i>Cowspiracy</i> Reading (Interest)	81	3.49	.989	-2.165	0.632
<i>Cowspiracy</i> Reading (Difficulty)	81	2.81	.910	-0.108	0.579
<i>Cowspiracy</i> Reading (Familiarity)	81	2.69	.889	-0.410	-0.409

4.2 Inferential Statistics

The inferential statistics conducted in this section were designed to address the research questions directly. In the case of each question, the initial test was a paired samples t-test which is a parametric test, and therefore assumes interval scales. Strictly speaking, the results from a Likert scale represent ordinal scales, and therefore assumptions for the t-test are not satisfied. Thus, the Wilcoxon Signed Ranks test was also used, because this test is the non-parametric substitute for a paired samples t-test when the data is not interval. The Wilcoxon Signed Ranks test lacks the statistical power of its parametric counterpart (paired samples t-test), meaning that it will be less sensitive to detecting a difference when there is one. Nonetheless, it has the advantage of not making assumptions which exceed the data in this case. In both the case of the t-test and the Wilcoxon Signed Ranks test, the alpha level was set in advance at .05 (or 5% probability of a Type I error).

With regard to RQ1, concerning the level of interest for the two respective readings, the results for both the t-test and the Wilcoxon Signed Ranks test were non-significant. This indicates that the two readings probably did not generate differing levels of interest. The p value for the t-test was (.673; 2-tailed) which is far from meeting the threshold of $p < .05$. In the case of the Wilcoxon Signed Ranks test the p value (.629; 2-tailed) was similarly far from meeting the threshold.

The results for RQ2, concerning the level of difficulty for the two respective readings, did produce a significant result, and in the case of both the t-test and the Wilcoxon Signed Ranks test. Both the p values for the t-test (.001; 2-tailed)

and for the Wilcoxon Signed Ranks test (.001; 2-tailed) met the alpha threshold of $p < .05$, and in fact, would have also met a more stringent alpha level of .01 (or 1% probability of a Type I error). Given the directionality of the Likert scale for both administrations of the questionnaire (lowest level of difficulty equals 5 and highest equals 1), the regular reading (mean of 3.15) was evaluated as less difficult than the *Cowspiracy* reading (mean of 2.81).

With respect to RQ3 which focused on the level of familiarity with the text, there was no significant difference between the regular reading and the *Cowspiracy* reading either with the t-test or the Wilcoxon Signed Ranks test. The p value for the t-test (.094; 2-tailed) and the Wilcoxon Signed Ranks test (.108; 2-tailed) both failed to meet the threshold of $p < .05$.

The above results represent the entire sample. For further analysis, the same tests were conducted but by subsample (i.e. by each streamed class) to assist with an analysis of the extent to which results for the three items on the survey might be affected by English proficiency level. These results are tabulated for inspection below (Table 3).

It is important to note that the subsamples (streamed classes) tested are obviously smaller in size than the total sample, and therefore statistical power is lower in each case than it is for the entire sample; meaning that a Type II error becomes more likely. The following general observations can be made about these tabulated results. There were no significant results across any of the survey items for the *Low Proficiency Group* and *Low-Intermediate Proficiency Group*. For the *High-Intermediate Proficiency Group*, there were significant results for both Interest and Difficulty. The *Cowspiracy* reading was evaluated as more interesting than the regular reading by this group, and it was also evaluated as more difficult (consistent with the overall results for difficulty for the total sample). For the *High-Proficiency Group*, there was a significant result only for the difficulty level, with the *Cowspiracy* reading being evaluated as more difficult than the regular reading.

5.0 Discussion

Overall, the distributional properties of the data collected for this study were reasonable. Results presented in the descriptive statistics indicate that GTEC scores did not display serious skew or kurtosis, with this indicating that proficiency

Table 3. Tabulated Results for T-Tests and Wilcoxon Tests by Proficiency Group (Streamed and Intact Classes)

	Low Proficiency		Low-Intermediate Proficiency		High-Intermediate Proficiency		High Proficiency	
	T/Wilcox	Reg./Cow Mean	T/Wilcox	Reg./Cow Mean	T/Wilcox	Reg./Cow Mean	T/Wilcox	Reg./Cow Mean
Interest	.272/.253	3.48/3.17	.525/.458	3.18/3.32	.006/.014	3.54/4.23	.803/.796	3.61/3.57
Difficulty	.648/.644	2.83/2.74	.418/.405	3.09/2.95	.018/.021	3.31/2.54	.002/.005	3.43/2.91
Familiarity	.714/.723	2.65/2.74	.803/.803	2.82/2.86	.068/.080	2.92/2.38	.002/.004	3.09/2.65
	n=23		n=22		n=13		n=23	

levels among the students were relatively well distributed. Similarly, the actual items comprising the survey questionnaire also produced scores which did not evidence serious skew or kurtosis, and had relatively good distributional properties.

From the perspective of the main research questions, it is clear that for RQ1 there was no evidence for a difference in the level of interest for the two readings when the entire sample (N=81) was taken as a whole. The p value was very far from meeting the threshold of $< .05$ in the case of both tests (parametric and nonparametric). With respect to RQ2, a significant difference does appear when the responses for the difficulty item are compared across the two administrations of the survey; i.e. after the regular reading and after the *Cowspiracy* reading. Participants evaluated the *Cowspiracy* reading as being more difficult than the regular reading. This result is consistent with the CEFR levels for the two respective reading materials with the regular reading being CEFR level A2 and the *Cowspiracy* reading being CEFR level B1. The results for RQ3, which focused on the level of familiarity with the content of the readings, indicate no differences between the two readings.

The results become more interesting, and somewhat more difficult to interpret, on turning to RQ4. The first general issue with respect to these results is that there appears to be a general pattern of significant results being more likely to emerge with the *High-Intermediate Proficiency Group* and *High Proficiency Group* than the *Low Intermediate Proficiency Group* and *Low Proficiency Group*. No significant results were obtained on any of the survey items for the *Low Proficiency Group* and *Low-Intermediate Proficiency Group*. One explanation for this would be that both readings presented as so challenging for these groups that it would be difficult to distinguish between the two readings on any category of evaluation (interest, difficulty, familiarity).

In the case of both the *High-Intermediate Proficiency*

Group and *High Proficiency Group*, the *Cowspiracy* reading was evaluated as more difficult than the regular reading. In the case of both these groups, they may have moved into a sufficiently-high bandwidth of proficiency to be able to distinguish one reading from the other in terms of difficulty. Interestingly, however, the *High-Intermediate Proficiency Group* produced a significant result for level of interest (*Cowspiracy* being viewed as more interesting) while the *High Proficiency Group* did not. One would expect that if increased proficiency was resulting in a higher level of interest for the *High-Intermediate Proficiency Group* when compared with the two lower proficiency groups, then this would also extend to the *High Proficiency Group* as well. However, it did not, and no significant result was obtained for interest between the two materials in the *High Proficiency Group*.

There are two areas of explanation for this significant result on interest for the *High-Intermediate Proficiency Group* but not the *High Proficiency Group*. The first concerns the low number of participants in this group ($n = 13$) when compared with the other groups. Because all four classes were relatively equal in size, the small number of participants in this group represents attrition, either through absences or failure to fill out the survey in such a way that matched pairs could be established. One possibility is that this attrition was systematic in some way rather than random, and this affected the results for interest in this group. The second area of explanation, and possibly the more likely, is that the teacher variable is expressing itself in these results. Each class had a different teacher, and it is possible that the level of interest for the *High-Intermediate Proficiency Group* is bound up with the teacher's approach to the readings in that class, rather than the level of proficiency in it.

6.0 Concluding Remarks

The research reported in this paper overcomes some of the shortfalls which were evident in the previous study (8). In the previous study, matched pairs were not available and this prevented a repeated measures design. Matched pairs were available for this study, and the statistical analysis was therefore more secure. The previous study also did not have sufficient representation of lower proficiency levels, and this study addresses this limitation with a better overall representation of proficiency levels. This is an important issue, as the analysis in this study actually suggests, because if readings are far too difficult (which they may be for lower proficiency groups), then this may affect other evaluations with respect to the readings such as interest. With respect to future research, there are two main issues which present. The first is that the confounding of proficiency level with the teacher variable should be overcome if possible; though this is difficult given the institutional constraint of having to work with intact classes (and assigned teachers) which are there for the interests of the curriculum rather than the interests of a research study. Finally, the research in this study is generalizable only to the readings which were done (regular versus *Cowspiracy*). To address the issue of an CBI rationale for agriculture students, it would be beneficial to greater generalization if there were more than one regular reading and more than one CBI reading. The findings in such a study would be more generalizable to a class of material (regular versus CBI) rather than being bound to a single instance of each class of material.

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アカデミック英語とカリキュラム開発： 内容を重視した英語教育における教材評価

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抄録

東海大学農学部では2018年度の英語科目から新カリキュラムが始まり、2年生対象のアカデミック英語が新設された。アカデミック英語は農学部と連携した科目であり2015年度から内容（農学）を重視した教材開発を行っている。2015年度試行は希望者の参加であった為、少人数で英語力も高い方であった。2017年度は3クラスでの試行でより多くの学生が参加したが、英語力が高い方のクラスであった。本研究には農学部全学科1年1組全員が参加したので、英語力が低い学生から高い学生までいた。参加学生は農学ではない内容の教材を使用した授業を受けた後にその教材の難易度、興味深さ、内容に関する知識を評価するアンケートに回答した。そして、別の機会に農学に関係する内容の教材を使用した授業を受け、同じ項目のアンケートに回答した。2017年度の研究と異なり、学生一人一人の1回目のアンケート結果と2回目のアンケート結果を比較することが出来たので統計処理が改善され、より明らかな結果を得ることができた。さらに、入学時に受験したGTECで測られた英語力とアンケート結果の相関も検証した。しかし、習熟度別4つのクラスは同時開講であった為、4人の異なる英語教員が担当した。そこで、英語力の差による影響か、担当者の相違によるものかは分からない。結果は農学の内容の教材の方が難易度は高いようであったが、英語力が一番下と下から2番目のクラスでは差がなかった。上から2番目のクラスは農学の内容の教材の方が興味深いとの結果であったが、一番上のクラスはそのような結果にはならなかった。