

ASSESSING NON-ENGLISH DEPARTMENT STUDENTS' MASTERY OF ACADEMIC CONTENT AREA READING

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Abstract: Assessing Non English Department Students' Mastery of Academic Content Area Reading.

This study addresses mainly college students' comprehension on academic texts. It involves 400 respondents of three state and three private universities in Malang with study programs with 'high', 'fair', and 'low' bases on the proportion of the study programs accredited A by the National Board of Accreditation (BAN). Quantitative data were analyzed descriptively and comparatively. The results show reading comprehension of most respondents ranges from 'average' to 'low'. Most word attack skills and text content attack skills are low. Text structure attack skills are not adequately mastered. The respondents' comprehension across state universities does not significantly differ, but there is a difference across private universities, limited to certain private universities. A significant difference between the comprehension of students of state universities and private universities and a significant difference between the comprehension of science and social studies students are evidenced. Most respondents are not yet ready for academic comprehension of English.

Keywords: comprehension, academic text, non-English language

Abstrak: Asesmen Kemampuan Membaca Pemahaman Teks Akademik Mahasiswa Non-Jurusan

Bahasa Inggris. Penelitian ini bertujuan untuk mengungkap penguasaan keterampilan memahami teks akademik mahasiswa. Penelitian ini menggunakan rancangan *expost facto* yang melibatkan 400 responden dari tiga PTN dan tiga PTS di Malang yang memiliki proporsi program studi terakreditasi A oleh BAN pada kategori 'tinggi', 'sedang', 'rendah'. Data kuantitatif dianalisis secara deskriptif dan komparatif. Hasil penelitian menunjukkan bahwa tingkat penguasaan keterampilan membaca sebagian besar responden cenderung rendah. Sebagian besar *word attack skills* masih rendah penguasaannya. Tidak ada satu pun keterampilan *text structure attack skills* yang sudah dikuasai secara memadai. Penguasaan keterampilan *text content attack skills* pada umumnya masih tergolong rendah. Juga, tidak ada perbedaan kemampuan mahasiswa lintas PTN. Namun ada perbedaan antara rerata kemampuan responden lintas PTS, meskipun terbatas pada PTS tertentu saja. Ada perbedaan signifikan antara kemampuan mahasiswa dari PTN dan PTS. Ada perbedaan signifikan antara kemampuan mahasiswa dari IPA dan IPS. Sebagian besar responden belum siap untuk memahami teks akademik berbahasa Inggris.

Kata kunci: pemahaman, teks akademik, non-bahasa Inggris

As has been observed by Sulistyono (2010), according to the decree of the Minister of Education and Culture No. 096/1967 dated December 12, 1967, the teaching of English in non English departments at the college levels is specifically aimed to equip students to comprehend literature and other reference sources written in English. Based on the aforementioned goal, the priority of English teaching in colleges as a study skill is logically teaching reading skills. This focus seems to be in line with the demands of science and technology the literature on which is mostly still written

in English especially in the global era (Graddol, 1997; Kaplan, 2000). This political will in a way may be considered instrumental in orientation, in that English should be taught with the function, among others as a tool for mastering modern science and technology in various fields that are still written English. Nationally, the teaching of English aims to equip students with functional skills in English to the epistemic level in order to facilitate them in making the best use of information, science and technology written in English.

However, several studies have revealed that the teaching of English in non-English departments in colleges has not yet been effective and this condition seems to have lasted at least nearly three decades or more. About three decades ago Djihadono's experimental research (1982) revealed college students' low ability in the English course in reading comprehension before the treatment. Even after treatment, the students' reading comprehension was still low. The root of the low quality of learning English in non-English majors may be traceable from the results of research conducted by Alwasilah (1997) who reported that respondents of three leading universities in Bandung felt that the English teaching did not meet their expectation. They even admitted that they did not know the course objectives.

Another piece of evidence is a vocabulary study by Nuswantara (1998) who revealed students' low vocabulary mastery. This finding was echoed more strongly by research findings of Nurweni and Read (1999) who also found out that the first semester students' vocabulary was still low at about one-third of the competency required in order for the students to read with adequate comprehension. A study with the third year students majoring in an accounting study program at Padang State Polytechnic revealed that over half of respondents had a pretest score in the moderate category similar to that after the posttest. This means that even if there is an increase after the treatment, the increase in their score was of no functionality in the college students' ability to comprehend academic texts.

Emaliana (2011) also examined the effectiveness of the use of KWLM techniques in teaching reading comprehension to students in non-English majors. The teaching technique statistically demonstrated its effectiveness in improving the students' reading comprehension skills. However, similar to the findings of other previous studies, the results of pre-test both the control group and the experimental group were considered still low. This means that seen from the input, the students' ability to comprehend academic English reading students was naturally low. The results of treatment by using KWLM were also not very high in the control group even though the increase was claimed to be statistically significant.

Kartika and Mastuti (2011) revealed the findings of their survey results that the students of the psychology faculty who were respondents in their study were only motivated to read English literature upon their lecturers' assignment to do so. They interpreted that the students were less motivated to read English literature. This finding supported the fact that the students only read in a range of 30 minutes to 1 hour

per day in a week even though they recognized the importance of reading literature in English.

Based on the findings of the studies discussed previously, the following conclusions are drawn. First, the ability of students to comprehend the content of academic reading materials is substantially still low. The causes include inadequate linguistic mastery. In addition, internally students' motivation to read is low; external factors include unclarity in the management of teaching English in non-English study programs. More importantly, although the application of learning strategies in several conducts of experimental research to improve student learning outcomes in English as it is also revealed in the study by Marhaeni (2003) is empirically sound, these strategies have not been able to empower students in comprehending academic texts in English. In other words, thus far, the use of innovative learning strategies has not been able to demonstrate significant functionality to enhance the students' learning progress. Consequently, English instruction at colleges seems to be ineffective.

Ineffectiveness in the achievement of the national goals in the teaching of English, especially reading skills, in general is also expressed by several researchers. Opinions about the failure of English teaching in non-English departments also came up as shown in the findings of research carried out at several universities in Sumatra by Ahmad (1999). The cause considered to contribute to such failure is that the class is too large (Gunarwan, 2000). At the secondary education level, the class-size phenomenon may be one explanation for the results of learning English shown in the the National Final Examination scores which are also still not satisfactory (Sulistyo, 2012), which allegedly plays a significant role to shape up the prospective college students' input quality. Some improvement in education has indeed been carried out by the Government, such as the establishment of institutions that guarantee the quality of national education, the National Education Standards Agency (BSNP). Moreover, the Ministry of Education has continued to reform the curriculum, a competence-based curriculum that is continually improved. However, the impacts expected by the change, particularly on high school graduates' English learning, have not been most advantageous as evidenced in the reports of the national examination (2008, 2009, and 2010). Also, in terms of reading skills, including math and science, Indonesian students rank 55 out of the 65 participants according to the assessment made by the PISA 2009 (Programme for International Student Assessment) (OECD PISA 2009 database). The situation may be a factor that explains why the human development index for Indonesia is still low, which

ranks at 124, even among countries in Asia. The above situation, certainly very worrying, still happens from decade to decade. If this dark picture is true, there must be something wrong in the practice of our national education, especially in teaching and learning English.

Casual observations in the implementation of English instructions in non-English majors imply that there is a fundamental miscomprehending in the interpretation of the role of this course. The general concept often times used as the reference in the English instruction in non-English majors is English for Specific Purposes (ESP). The use of this reference is basically not dubious. However, the specific needs of English required by students in their study have been interpreted by facilitators of the course from various perspectives. Personal interviews with several lecturers in non English majors have revealed that they interpret the English course as a kind of empowerment required in their future profession. This may be due to the fact that the course is labelled as English for professions. As a result, the instructional materials used in the class are often adapted to the students' fields of study such as English for Agriculture, English for Economics, etc, which are more oriented towards the EVP, namely English for Vocational Purposes (Duddley-Evans & St. John, 1998). For a course with a load of 2 credits, however, such an orientation is not appropriate. What seems more appropriate for such a load seems to be English for Academic Purposes (EAP) with a particular emphasis on English skills. For the students, study skills are more urgent in the Indonesian context, particularly study skills in reading. The strengthening of reading study skills should be the goal of learning in non-English majors in the early years of the students' study.

Reading has been believed to be a complex process that involves a host of activities on readers' physical, cognitive, and emotional sides. Good readers may be defined as readers who have the skills to read and to be able to use these skills in reading activities effectively and efficiently resulting in comprehending of what they read correctly. However, several experts define reading differently, yet they have a similar focus. Commonly, reading is viewed as an activity to get the author's message contained in words or word meaning. Reading is defined as a process to comprehend the meaning of printed or written material and interpret the meaning contained in it (Finnochiaro & Bonomo, 1973).

Another definition considered to be a classical one states that reading is thinking (Smart, 1972). Meanwhile, similar to the previous definition, reading is defined as an activity required to construe meanings

from written materials (Grellet, 1981). Reading is the ability to interpret written or printed symbols (Mitchell, 1982). Based on these definitions, reading requires at least the presence of the following elements: the linguistic symbols in the form of words or sentences as a medium of communication, and the meaning contained in the writing, and activities to explore the message contained in the text. The focus of these definitions of reading relates to a mental activity to mean a written text.

Another definition of reading is concerned with not only internal and mental activities, but also physical and external processes as well. A proposed definition of reading by Nuttall (1985) may be classified into 3 (three) layers, but these three layers are interrelated in the process of the actual reading process. These three terms are as follows: the first layer interprets reading as a process to comprehend, interpret, define; the second one interprets reading as an activity to decode, decipher, identify, and the like, and the third layer defines reading as articulating, saying, etc.

The grouping of reading activities into three layer is not without intention. The first layer, namely reading associated with the idea of comprehending, interpreting, defining is more likely to mean reading activities as suggested by previous experts such as Mitchell (1982), for example. This definition emphasizes the importance of mental processes and internal reading mechanisms. The second layer, which associates reading with acts of decoding, deciphering, identifying, and so on, refers to the process of utilizing linguistic knowledge in terms of activation of words, phrases, sentences, including organizational structures of the text. The third layer is reading as articulating, saying, and so on is closely related with the idea of reading activities that involve the use of speech organs.

The definition of reading with a wider perspective seems to begin to grow. Similar to the definition of reading that calls for not only mental and internal orientation, but also external and physical processes (Nuttall, 1985), another definition has claimed that reading is a receptive language process - a process that leads to the psycholinguistic construction in the reader's mind of the message encoded by the author. Similarly, there is also another definition of reading stating that reading is a complex process involving a variety of mechanisms not just revealing the elements of language alone but more than that. Reading also involves a variety of processes such as visual, cognitive, psycholinguistic, and metacognitive activities. With this definition, the activities of reading words aloud are not considered as reading comprehension. Nuttall (1985) differentiates reading skills into several levels. The classification is based on how meaning is created in

the empowerment of linguistic aspects: word attack skills, sentence attack skills, text structure attack skills, and text content attack skills.

Up to now, no single study has apparently been made to reveal information about the mapping of reading skills of college students. The lack of data in this matter has resulted in the absence of accurate information of the actual profile of the ability of the students to comprehend the content of academic material in English. Thus, a persistent problem that has not been revealed is among others the areas of reading skills which the students still face when reading English text comprehension.

Accurate information on the profile of students' reading capabilities is critical at least to serve two purposes. First, factual information about the profile of the ability of the college students to comprehend academic materials in English will play a role as an empirical basis for the stakeholders in determining the direction of the English learning in non-English majors to improve the quality of learning and teaching English. Learning English as EAP is considered 'expensive' in terms of its implementation. This course has taken up considerable resources, and funding, but thus far there has been a negative impression that learning English as an EAP course in non-English majors have not been optimal. Second, the information about the students' reading real ability will provide policy makers at college or university levels with empirical evidence to design appropriate follow-up policies for the learning of English if college students are still expected to be more successful in their studies in universities.

With the context described previously, this study aims to describe the level of college students' mastery of reading skills to comprehend academic texts in English based on several sub skills. This study also aims at describing which essential sub skills of reading as a basis to comprehend academic texts in English have been mastered by college students, and describing whether or not there are differences in the mastery of sub skills for college students of several universities in Malang. In addition, this study also aims at describing the readiness of college students to comprehend academic texts in English.

METHOD

The present study employs a descriptive study (Gay, et al., 2006) because its usefulness (Wolfer, 2007) which addresses the objectives of this present study, namely analyzing the essential reading skills college students have mastered as a basis to compre-

hend the academic texts in English. In addition, this study can be classified as ex post facto research (Borg & Gall, 1989), in that the present study attempts to compare the college students' reading comprehension, in which the characteristics of respondents are present naturally as they are, not as a result of impacts of any attempted treatment made in this study.

The target population of this present study was all the first year college students of the non-English study programs of different departments and faculties in universities, both public and private, in the city of Malang. The sample was drawn from higher education institutions accredited by National Board of Accreditation with the categories as high (A), medium (B), and low (C) proportions with reference to the study programs with accreditation 'A', for both public and private universities. Three state universities are drawn as the sample, whereas of the six private universities, after the proportion of its accreditation 'A' was taken into account, 3 private universities were randomly also drawn as the sample of the present study. In all there are six university samples: three State Universities A, B, and C and three Private Universities A, B, and C, descending in that order in terms of the proportion of accreditation 'A' on their study programs.

Next, three study programs of each of the state and private university samples representing natural science, social science, and humanities study programs were determined as the study program samples. One study program was then determined randomly as a sample from each of these three study programs. A number of students were drawn at random from each of these study programs, resulting in a total of 400 respondents who were proportionally drawn from three study programs of natural science, social science, and humanities study programs.

The main instrument of this study is a set of reading test designed to reveal the college students' ability to comprehend English texts. The test is developed on the concept proposed by Nuttall (1985) as a construct of the tests of 95 items measuring reading skills as outlined in the test construct. The details of the construct are set in Table 1.

Prior to data collection, the test was first expert-validated and was then tried out to 80 subjects after revision based on three experts' feedback. The reliability of the test score figures at 0.822; the average of the *p* value of test items is 0.451 (moderate level of difficulty); the index of discrimination averages at a figure of 0.314 (marginally discriminating); the average of the *p-bis* of items is 0.232 (valid items). This means that the test is an appropriate instrument to

collect data. The data were collected by administering the reading test to classes determined as samples by first asking permission and negotiating with the English lecturer teaching the class for test administration. The test lasted for 120 minutes.

The data on the college students' mastery level were analyzed based on the proportion of their scores for all sub-test items that measure reading skills of all levels. While the data on the essential sub reading skills which have not yet been mastered by respondents were analyzed based on the p value (Salvia & Ysseldyke, 2001) with the following categories as 'non mastery yet' ($0.00 < p < 0.33$) 'low mastery' ($0.34 < p < 0.67$, and 'mastery' ($0.68 < p < 1.00$). These categories were then used as the basis for tracing back to the indicators measured by the corresponding items as outlined the test content specification above.

Students' ability to comprehend academic texts is first determined by calculating the theta (θ) value

of each respondent by using the program ASCAL 3:20 version. The theta (θ) value was then converted using the Woodcock-Johnson scales: $(9.1 \times \theta) + 500$ (Sulistyo, 2010). Finally, the criterion to determine the level of readiness is based on the criterion that has been determined arbitrarily, in that the score of 510 is put to be the cut-off score (80% of the conversion of the theta value in the range of 472.7 as the minimum and 527.3 as the maximum) when the maximum value is determined based on the *theta* value at +3 and the minimum value at -3. Meanwhile, in order to evaluate the difference between the average *theta* values of students of different universities, the data were analyzed using ANOVA and t-tests. All statistical calculations for data processing are performed using a computer software program, SPSS version 17.

Tabel 1. Construct of Academic Content Area Reading

Level	Variable	Indicator
Word: <i>word attack skills</i>	1. deducing the meaning of words in sentential contexts	1.1 identifying the meaning of words in sentence context through a number of signals
Sentence: <i>sentence attack skills</i>	2. interpreting the meaning in sentences of different syntactic structures	2.1 identifying the meaning in sentences with different sentence (complex or compound sentence structures)
Text (Text Structure): <i>text structure attack skills</i>	3. identifying text structures/organizations	3.1 identifying text structures/organizations in paragraph and essay levels
	4. identifying ideas and important information in paragraphs	4.1 identifying main ideas of paragraphs inductively and deductively
	5. identifying topics and their supporting details	5.1 identifying mayor details and minor details
	6. identifying outlines of texts logically	6.1 identifying outlines of texts of different development logically (<i>ordering of ideas</i>) through flow charts or a table
	7. identifying rhetorical development of texts	7.1 identifying patterns of paragraph development (by relating topics with their supporting details)
	8. interpreting meanings of text relationships through coherence textual devices and transitions	8.1 identifying meanings of text relationships through coherence textual devices and transitions
Text (Text Content): <i>text content attack skills</i>	9. identifying specific and detailed factual information	9.1 identifying information (<i>fact-finding</i>) of who, what, where, or/and where and why and how of texts
	10. interpreting meaning relationships of text parts through cohesive devices	10.1 identifying meaning relationships of text parts through references or substitution
	11. understanding conformity between information in the texts and its visual representation	11.1 identifying the match between the information in texts and its visual representation in the form of pictures, diagrams, or curves
	12. determining propositional informative inferences dan propositional exploratory inferences	12.1 finding propositional informative and exploratory inferences
	13. evaluating expressions in texts	13.1 identifying values of expressions in the form of facts and opinions, evidence, definition, implication
	14. extracting meanings based on underlying information in texts	14.1 drawing logical conclusion: concluding and generalizing

Source: Synthesis from a variety of concepts

RESULT AND DISCUSSION

Results

The descriptive analysis in this part aims to look at the characteristics of the data on the mastery level of reading skills to comprehend academic texts in general seen from several statistics of the sample such as mean, standard deviation, variance, minimum score and score maximum. The minimum observed score of the respondents is 0.16, which means that none of the respondents (400) did all the test items (95 items) totally wrong. Meanwhile, the observed maximum score of 0.72 indicates that none of the respondents (400) who did the test items (95 items) scored totally right. As shown by the values of standard deviation and variance of the data, the respondents' scores varied considerably. Results of further analyses to determine the level of general mastery of respondents' reading skills are as follows. Most of the respondents (87.8%) have merely a moderate level of mastery. Several respondents (10.5%) are categorized into a low level of mastery. Meanwhile, only a few respondents (1.8%) have a high level of mastery.

Respondents' word attack skills are examined using 8 (eight) items. The results of descriptive statistics are as follows. All respondents were able to complete the eight items of word attack skills correctly. This is reflected in the observed minimum score which is 0 (zero)% and the observed maximum score figuring at 1.00 (100%). In general, based on the mean (0.5558), obviously less than half of the total of the eight items can be completed correctly by the respondents. Based on the value of the variance or standard deviation that is relatively small in value, i.e. 0.037 and 0.19319, the respondents' scores are naturally not widely distributed. That is, their score tends to be homogeneous. The following are the results of further analyses to examine the level of mastery on word attack.

The majority of respondents (62.3%) have word attack skills at the moderate category. Few (12.3%) have word attack skills at a low mastery category. Meanwhile, only few respondents (25.5%) have word attack skills in the high category. In general it can be summarized that in general respondents' mastery in word attack skills tends to be moderate.

Five items are constructed to examine respondents' sentence attack skills. Based on the mean (0.66), more than half of the items can be answered by the respondents correctly. Viewed from the variance or standard deviation of the data which are relatively small in value, 0.216 and 0.046, the respondents' scores are not widely spread. With regard to the observed minimum score, there are respondents who

failed to complete all the items on sentence attack skills correctly. On the other hand, there are respondents who are successful in completing all the five items correctly as shown by the observed maximum score, namely 1.00 (100%).

The results of further analyses to determine the level of mastery on sentence attack skills demonstrate that most respondents (48.3%) have a moderate level of mastery on sentence in attack skills. Few (5.5%) master sentence attack skills at a low mastery category. Meanwhile, respondents with high level mastery in sentence attack skills are almost similar in number to those who have sentence attack skills at the moderate mastery level, namely 46.3% only. There is tendency of respondents' level of mastery on sentence attack skills that leads to moderate and high level categories.

Respondents' text structure attack skills are measured using 46 (forty six) items. Based on the mean value (0.3772), the average level of respondents' mastery on text structure attack skills figures only one thirds of all respondents as examined using 46 test items. With regard to the observed minimum score, the data show that none of the respondents was successful in completing all the test items correctly. However, no respondent also managed to complete all of the forty six items correctly. The results of further analyses show that more than half of respondents (61.3%) gain a mastery level on text structure attack skills at the moderate category. More than one thirds (38.5%) reached a low level of mastery and only one person (0.3%) have a high level of mastery on text structure attack skills.

There were 36 (thirty six) items that are developed to measure respondents' mastery on text content attack skills. Based on the mean value (0.4984), the average level of mastery of respondents reaches nearly half of sub skills of text structure attack skills being tested. With reference to the minimum score, it can be stated that none of the respondents was unsuccessful in completing all the test items correctly. However, none of the respondents can do all of the items tested correctly. The results of further analyses to determine the level of respondents' mastery of text content attack skills demonstrate that most respondents (85.8%) have a mastery level on the text content attack skills at the moderate category. Few have a low mastery level (9.3%) and a few (5%) have a high mastery level on text content attack skills.

The eight items developed to measure respondents' word attack skills are meant to examine their mastery on identifying meanings of words through a number of sub skills, namely definition (1 item), context clues (3 items), word part clues (2 items), shade

of meaning (1 item), denotation/connotation (1 item). The summary of the results of the data analysis on these indicators is presented in Table 2.

Table 2. Status of the Mastery of Sub Skills of Word Attack Skills

Status	Frequency	%	Sub Skill
Non Mastery	1	12.5	• identifying word meanings based on definition
Low Mastery	6	75.0	• identifying word meanings based on <i>context clues</i> , <i>word part clues</i> , shades of meaning
Complete Mastery	1	12.5	• identifying word meanings based on denotation/connotation
Total	8	100	

As shown in Table 2, the respondents' mastery on most of the indicators of word attack skills (75%) is still low, and this happens on the sub skills to identify the meaning of words through context clues, word parts clues, and shades of meaning. The sub skill to identify the meaning of words through the definition has not been mastered (12.5%), while the sub skill to identify the meaning of words through denotation/connotation is already securely mastered (12.5%).

Five items were developed to measure the indicators of identifying meanings in sentences employing structure of predication, structure of modification, structure of complementation, and structure of coordination. The results of the analysis show that the skills to recognize the meaning of words through the structure of predication and structure of coordination is completely mastered by the respondents (50%), while the skills to recognize the meaning of words through the structure of complementation and structure of modification are low in mastery (25%) and not mastered (25%) consecutively.

The sub skills of text structure attack skills are measured using 46 (forty six) items which are aimed to reveal 13 (thirteen) indicators that follow 'identifying text structure in paragraph forms' (2 items), 'identifying text structure in essay forms' (2 items), 'identifying explicit main idea' (2 items), 'identifying implicit main idea' (1 item), 'identifying mayor specific information' (3 items), 'identifying minor specific information' (8 items), 'identifying text development by classification' (5 items), 'identifying text development by process' (6 items), 'identifying text development by reasons' (2 items), 'identifying paragraph development by examples' (3 items), 'identifying meaning of text relationships by reference or substitution' (3 items), 'identifying meaning of text relationships by

textual coherence signals' (5 items), 'identifying meaning of text relationships by transitional signals' (4 items). The results of the data analysis show that none of the skills to comprehend academic texts through text structure attack skills has been completely mastered by the respondents. In addition, the mastery of sub reading skills through text structure attack skills in general (61.5%) is still relatively low, and this occurs in eight of the following skills: 'identifying text structure in the form of paragraphs', 'identifying text structure in the form of essays', 'identifying explicit main ideas', 'identifying minor specific details', 'identify the text development by classification', 'identifying text development by process', 'identifying paragraph development by examples', and 'identifying meaning of text relationships by transitional signals'. Furthermore, there are four (38.5%) other skills that are not yet mastered by the respondents, namely 'identifying implicit main ideas', 'identifying mayor specific information', 'identifying the development of a paragraph by reasons', 'identifying the meaning text relationships by textual coherence signals', and 'identifying the meaning of text relationships by references and/or substitution.'

Respondents' mastery on text content attack skills is measured using 36 (thirty six) items meant to reveal 11 (eleven) indicators, namely 'finding specific factual information of what, who, when, where' (4 items), 'finding detailed information of why and how' (3 items), 'identifying meanings of text relationships through reference or substitution' (3 items), 'identifying the match between information in a text and pictures' (1 item), 'finding propositional informative inference' (3 items), 'finding exploratory inference' (4 items), 'evaluating expressions of facts and opinions' (4 items), 'evaluating expressions in the form of evidence' (2 items), 'evaluating expressions in the form of definition' (1 items), 'evaluating expressions in the form of implication' (4 items), 'drawing a logical conclusion by inferring' (7 items), and 'drawing a logical conclusion by generalization' (3 items).

The results of data analyses show that of 12 indicators that are measured, the respondents only mastered 2 indicators (16.6%), namely 'finding specific factual information of what, who, when, where' and 'finding detailed information of why and how'. Respondents' mastery on half of the other indicators is low, in particular in these: 'finding propositional informative inference', 'finding exploratory inference', 'evaluating expressions of facts and opinions', 'evaluating expressions in the form of definition', 'evaluating expressions in the form of implication', and 'drawing a logical conclusion by inferring'. The rest (33.3%) of the indicators in text content attack skills is not mas-

tered at all by the respondents of the study. There indicators are 'identifying meanings of text relationships through reference or substitution', 'identifying the match between information in a text and pictures', 'evaluating expressions in the form of evidence', and 'drawing a logical conclusion by generalization'.

The results of the descriptive analysis of reading abilities of the college students of State Universities A, B, and C demonstrate that there is a difference in the mean of reading ability (θ) of the respondents from the three universities although at first glance the difference is slight. The mean score of the respondents of State University C is the highest (502.96) and the lowest is the mean of the respondents of University A (500.78). Similarly, the highest maximum score is still observed in the score of the respondents of State University C (517), while the lowest maximum score is observed in the score of the respondents of State University B (514) although the difference was unimportant. The highest minimum score is observed in the score of the respondents of State University B (485), while the lowest minimum score is observed in the score of respondents of State University A (472).

The results of the test for homogeneity of variance are met in the data of respondents of State University A, State University B, dan State University C (p -value = 0.984 with Levene statistic = 0.016 at $df_1=2$ and $df_2=207$; this value is greater than 0.05, or Sig. 0.984 > Sig. 0.05). However, the results of the test for normality shows that data normality of the three sets of data of the three state universities is not met for both the Kolmogorov-Smirnov or Shapiro-Wilk tests (data set at State University A and State University C shows a smaller value than 0.05, namely Sig. 0.020 at State University A, and Sig. 0.028 at State University C smaller than Sig. 0.05). As a consequence, further statistical analyses are performed using Kruskal Wallis non parametric procedures.

The results of the analysis demonstrate that the significance of Chi-square statistics is Sig 0.128. This value is much greater than the value at Sig. 0.05 (Sig. 0.128 > Sig. 0.05). This shows that the mean difference of the respondents of State Universities A, B, and C (A = 500.7; B = 501.26; and C = 502.96) is statistically insignificant. In other words, empirically there is no difference in the reading abilities of the respondents of State Universities A, B, and C. Considering this, therefore, there is no need to conduct a further *post-hoc test*.

The results of the descriptive analysis of reading abilities of the college students of Private Universities A, B, and C clearly show that a difference in mean ability (θ) of respondents from the three private universities is observed although at first glance

the difference is not far. The highest mean is observed in the data of Private University A (501.56) and the lowest mean is found in the data of Private University C (495.98). The highest maximum score is observed in the data of Private University A (516) while the lowest maximum score is in the data of Private University C (508). The highest minimum score is found in the data of Private University B (483) while the lowest minimum score is observed in Private University C (476).

The results of tests for homogeneity of variance demonstrate that the variance of the data of the three private universities is homogeneous (observed Sig. 0.782 > Sig. 0.05 at Levene statistic = 0.247, $df_1=2$ and $df_2=187$). The tests for data normality show normally distributed data at both Kolmogorov-Smirnov and Shapiro-Wilk tests of the data sets in Private Universities A, B, and C (F values greater than 0.05 with the Sig. values in the range of 0.52 at Private University C at the Shapiro-Wilk test, to Sig. value = 0.412 at Private University C which is greater than 0.05). Considering this, therefore, ANOVA is employed to examine the mean difference of more than two groups when the statistical assumptions are satisfactorily met.

The results of ANOVA show that the observed F value is 11 443 which is much greater than the value of F (2.186) of the critical table, namely 0.300. Additionally, the observed significance is much smaller than 0.05 (0.000 Sig. > Sig. 0.05). This means that the mean of the ability (θ) of the respondents of Private Universities A (501.56), B (501.08), and C (495.98) is statistically significantly different. To find out which shows significant differences, further post hoc analyses are performed to determine which mean scores show actual statistical differences. Given the number of the sample of the three private universities is not the same at all, the further appropriate analysis is the Scheffe test.

The test results show the comparison of the ability of respondents of different private universities as follows. The significance of Private Universities A and B is 0.932; the significance of Private Universities A and C is 0.00, and the significance of Private Universities B and E is 0.001.

The significance of the mean difference of the respondents of Private Universities A dan B (0.932) is much greater than 0.05. This means that the null hypothesis stating that there is no difference in the means of the respondents across state universities can be rejected. This implies that there is a statistical difference in the means of the respondents of Private Universities A and B. Meanwhile, the significance of the mean difference of the respondents of Private

Universities A and C is 0.00, which is much smaller than 0.05. This indicates that the null hypothesis that there is no difference in the means of the respondents across state universities cannot be rejected. This means that there is no significant statistical difference between the means of the respondents of Private Universities A and C.

The observed significance value of the mean comparison of the reading abilities of respondents of Private Universities B and C (0.01) is much smaller than the value of 0.05 significance. This means that statistically there is a significant difference evidenced in the reading abilities of respondents of Private Universities B and C. The results of the Tamhane test show similar evidence of a statistical significance to those of the Scheffe test. This means that there is a statistical significant difference between the reading abilities of respondents of private universities A and C and those of respondents of Private Universities B and C; meanwhile there is no statistical significant difference evidenced between the reading abilities of respondents of Private Universities A and B.

The results of the descriptive analysis of reading abilities of the college students of state and private universities show that visually there is a difference of means of reading abilities (*theta* θ) of college students of state and private universities (state university = 501.49 and private university = 499.65). The maximum score of respondents of state universities (517) and that of respondents of private universities (516) visually is not of difference. So is the minimum score, (state university = 472 and private university = 476), a four-point difference.

Homogeneity of variance on the data of the reading abilities of the students of state and private universities is satisfactorily met (the observed *p*-value = 0.860 at Levene statistic = 0.031 with $df_1=1$ and $df_2=398$ is greater than 0.05 or Sig. 0.860 > Sig. 0.05). Meanwhile, data normality is not fulfilled (the values of significance level that range from Sig. 0.00 with private university data at the Shapiro-Wilk test, to Sig. 0.0112 with data both from state and private universities < Sig. 0.05). Therefore, a further appropriate analysis performed is a non parametric statistical analysis. The results of ranking the means of respondents of both state and private universities demonstrate that there is a difference in the mean of the respondents of private and state universities after the means are ranked with the mean of the data of state university students = 215.14 and that of private university students = 185.32. To evaluate the mean difference, a non parametric statistical test of the Mann-Whitney test is employed when the fulfilment of statistical assumptions are not satisfactorily met, namely when homogeneity of vari-

ance and normality of the data are not satisfied. The results of the Mann-Whitney test show that the observed Z value is small (-2.665) and the observed significance value *p* is much smaller than 0.05 (Sig. 0.008 > Sig. 0.05), indicating that there is no empirical evidence to accept the null hypothesis stating that there is no statistical difference in the mean of the abilities of the students of private and state universities. This implies that statistically there is a significant difference in the mean of the abilities of the students of private and state universities in comprehending academic reading texts written in English.

The results of the descriptive analysis of the college students' readiness in academic text comprehension demonstrate that the mean of the respondents is 500.59. The observed minimum score is 472.41 of the ideal minimum score which figures at 472.70, indicating that the respondents have low reading comprehension. Meanwhile, the observed maximum score is 516.54, about a 10.80 point-difference, which indicates that no respondents achieve very high abilities in reading comprehension. The summary of results of data analysis to determine the college students' readiness to comprehend academic English texts show that out of 400 respondents only 9.5% of the respondents have actually had the readiness to comprehend academic texts in English. Most of the rest (90.5%) are not ready yet to comprehend academic texts in English.

Discussion

Reading may be seen as process and/or product. As process, seen from readers' side, reading comprehension is a complex process that involves not just readers' physical activity alone, but also their cognitive and affective factors (Nuttall, 1985). From the physical side, reading can be said to begin with the introduction of elements of the written language, letters. For novice readers, letter recognition is important. The next stage is the introduction of elements larger than letters called words. This is then followed by identifying larger elements such as phrases, sentences, and discourses, including identification of the functions of punctuation marks in the text. Along with the activities of the introduction of elements of written language, there are also processes of cracking meanings contained in the elements of written language forms ranging from discovering meanings of the lowest and smallest elements to revealing the largest elements in discourses. The concept of reading as stated above obviously reflects the views of structuralists' bottom-up theory. Reading is about to reveal the meaning contained in the text expressed by the writers. Meaning

is thus positioned to be located in texts. In this view, it is readers' tasks to dig up meanings conveyed in the texts through linguistic analyses and meaning transfers through language elements in the texts.

According to the bottom-up theory of reading, the success in reading in a foreign language, namely English, will depend on the success in identifying and interpreting foreign language elements. Failure in a chain process for identifying language elements can thus affect the success of identifying and interpreting other elements in the next processes. In the present study it is revealed that the level of mastery of the majority of respondents (75%) in identifying the elements of the meaning of words in word attack skills, which according to the theory of bottom-up elements, is categorized into an elementary level, or low mastery. The findings of this study obviously are in line with the findings of research conducted by Nuswantara (1998) and Nurweni and Reid (1999), namely that the vocabulary mastery of the respondents in their research figured only at about one-thirds of the requirement in the course. This means that at this early stage the level of the respondents' mastery in vocabulary has been problematic. Absence of solid mastery at the conceptual level of words according to structuralists will have a significant impact on further mastery beyond word levels i.e. sentence levels and beyond. This impact is empirically substantiated. In the present study, it is also revealed that the mastery of the respondents in identifying the meaning of sentences with different syntactic structures have not been solid. Fifty percent of respondents had a moderate mastery; the other fifty percent had a low level of mastery. In addition to these, respondents' level of both text structure and text content mastery is also not yet fully firm.

In the concept of bottom-up theories, as a product, reading activities of course also result from physical activities that involve multi-structural factors mentioned above. Reading as the product takes the form of readers' comprehension of what they read. The process of becoming adept at reading comprehension not only may occur through natural processes but can also take place through the process of 'engineering', among others, adopted through formal education. In the Indonesian context of learning English, mastery of reading skills particularly among students, takes place more through the formal process, namely formal education in schools, which according to Krashen (1982) is termed as the process of learning, in contrast to the so-called acquisition. The respondents of this study are those students whose reading ability and skills in English are shaped more by design, that is, through a process of education taking place at secondary school levels, be they upper middle or lower

middle levels with the assumption that the process of teaching and learning activities at those levels does occur effectively and efficiently. If all these arguments are accepted, then, the skills students learn to comprehend the academic content of the text as have been revealed in this study as being inadequate at all levels of sub skills may be a reflection of the ineffectiveness of teaching and learning at the secondary school levels. If this is true, then the learning-teaching English at the secondary school level are at stake. If the ineffectiveness is true, one of the roots of the problems could most likely be the class size that is too large as Gunarwan (2000:312-325) has suspected. Other contributing factors are most probably due to the level of teachers' professional competence as was revealed nationwide through teacher competence test results. Teachers only mastered about 45% of the material of the professional competence in pre tests of teachers' competences to join Teacher Education and Professional Training (PLPG) as expressed by the Director of Junior High School Management. Personal experiences during facilitation in a variety of technical assistance activities to enhance teachers' professionalism in the national examination also has confirmed the situation that the teacher mastered only about 50% of materials projected to be like items in the national examination for students (Sulistyo, 2011).

From the point of view of top-down perspectives, meaning of texts is a function of readers' prior knowledge or background knowledge in dealing with the content of the material being read. Meaning according to this theory is not to be found in the text. Meaning lies within the reader, that is how the readers with their prior knowledge or background knowledge they have mean the content of the reading materials. If this is true, meaning created through reading by each reader can vary depending upon their experience when they interact with the text they are reading. This present study utilizes reading test items to examine college students' ability to comprehend the content of texts with popular academic and general themes, not a technical text that specifically addresses a particular field. The question is that if personal experiences play a significant role in the respondents' comprehension, the question is: are the respondents constrained in comprehending the content of the texts with popular academic and general themes in this test? The answer is most likely negative because the majority of the respondents could answer even though the answer may be still incorrect.

In testing context, there is obviously a host of factors that have an effect on reading comprehension. If the test factors are thought to influence the measurement of the respondents' ability to comprehend

texts, what may explain respondents' scores is the test length not the test format as identified by Shohamy (1997). In this present study there were 95 test items developed for the purposes of examining the respondents' reading comprehension. Test length factors can affect respondents' physical and psychological states in completing the test. A long test could be expected to cause physical fatigue and to affect thinking processes, which could potentially have a further consequence, the possibility of decreasing the respondents' motivation in accomplishing test items assembled in the reading test. If this happens, the result will certainly be a decline in cognitive abilities to respond to the items on the test. While students may desire to demonstrate their optimum reading ability by trying completing all items correctly, their physical and mental condition may not support them. Very likely the respondents answered the questions in a way much by guessing; let alone the test format used in this study, i.e. a multiple-choice type lends itself to the respondents to answering items by guessing. Guesses are certainly not a true reflection of the respondents' ability to comprehend texts in English. Coupled with linguistic abilities that are not yet solid in mastery, the respondents then have a greater opportunity to answer the test items by guessing due to the format of the test.

The findings of this study empirically support the findings of several previous studies by Nuswantara (1998) and Nurweni and Reid (1999) for instance. The mastery of the majority of respondents which is at a medium level indicates that the respondent has not reached a solid mastery in reading skills. In other words, the respondents' mastery of reading comprehension skills is actually inadequate. The findings of the present study are also consistent with studies that have been conducted by several researchers in different decades for instance, Djiwandono's (1982) and Emaliana's (2011). Seen from different angles of mastery mentioned above, a sound explanation for such a situation, if traced further back, is most likely due to ineffectiveness in the learning practices of English at the secondary school level. The process of formal education at the secondary level seems to have the greatest share in the formation of reading comprehension skills. If this is true, then the old problems related to teaching reading comprehension that have occurred since a few decades ago up to the time this present research was conducted has still been going on and on, and has not found their accurate solution.

CONCLUSION

This writing has reached its purposes. Based on the data analysis, several points can be drawn as con-

clusion as follows. First, most of the respondents have a moderate level to comprehend academic English texts. Second, there is evidence of low mastery in most indicators of word attack skills and this happens on these sub skills 'recognizing the meaning of words through context clues, word parts clues, and shade meaning. Meanwhile, the indicator of recognizing the word meaning by definition has not yet been mastered, while the indicator of recognizing the meaning of words through denotation/connotation has been mastered little.

Furthermore, it can be concluded that the sub skills to recognize the meaning through a variety of sentence structures have not been securely mastered. It is revealed that the mastery of the meaning through the sentence structure of predication and that of coordination has been mastered by half of respondents, while the skills to recognize the meaning through the structure of complementation and that of modification tend to be unsecurely mastered.

In addition, no sub skill of text structure attack skills has been securely mastered. In general the mastery of sub skills to comprehend academic English texts through text structure attack skills is still relatively low, and this occurred in these sub skills: 'identifying text structures in paragraph forms', 'identifying the text structure in the form of essays,' 'identifying explicit main ideas ', 'finding minor details', 'identifying the text development by classification', 'identifying the text development by processes', 'identifying the paragraph development by examples', and 'identifying the meaning of discourse relations through transition markers'. Meanwhile, one thirds of skills that has not been mastered by the respondents are as follows: 'identifying the main idea', 'finding detailed mayor information', 'identifying the paragraph development by reasons', and 'identifying the meaning of text relationships by textual coherence markers'.

Next, of the thirteen indicators of the text content attack skills investigated, respondents only have mastered two indicators as follows: 'finding factual information on what, who, when, where' and 'finding factual detailed information of why and how'. Respondents had low mastery of half of the other indicators as follows 'finding out proportional informative inferences', 'finding out exploratory inference', 'identifying the value of the expressions containing opinions or facts', 'identifying the value of the expression in the form of the definition of', 'identifying the value of the expression in the form of implications ', and 'drawing logical conclusions through inferences in paragraphs developed by reasons', and 'identifying the meaning of discourse relations through textual coherence markers'. One thirds of other indicators are not yet mastered well by the respondents. These indicators in

question are 'identifying the meaning of discourse relations through reference elements or substitution', 'identifying the suitability of the information in the text with pictorial representations', 'identifying the value of the expression in the form of evidence', and 'drawing logical conclusions through generalization'.

Moreover, it can be concluded that there is no statistical difference in the ability of college students of state universities in terms of academic text comprehension. However, there is a statistically significant difference between the reading abilities of respondents of certain private universities. In addition, there is no statistical significant difference between the ability of students of state universities and private universities in terms of comprehending academic texts. Meanwhile, there is a statistically significant difference between the ability of students of natural science and social science study programs in comprehending academic texts. Finally, there is only a small proportion of respondents who actually have the readiness to comprehend academic texts in English. The majority is not ready yet to read academic English texts.

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