APPLICATION OF COMPLETELY RANDOMIZED BLOCK DESIGN (CRBD) TO ASSESS THE EFFECT OF GENDER AND PERSONALITY ON STUDENTS' READING COMPREHENSION ABILITY

By Ujang Suparman

APPLICATION OF COMPLETELY RANDOMIZED BLOCK DESIGN (CRBD) TO ASSESS THE EFFECT OF GENDER AND PERSONALITY ON STUDENTS' READING COMPREHENSION ABILITY

Ujang Suparman[1] *, Hasan Hariri[2], Sen Y.Haenila[3], Mustofa Usman[4], Howard Nicholas[5]

[1]Department of Language and Arts Education, Faculty of Teacher Training and Education, Universitas Lampung, Indonesia, *Email: ujang.suparman@fkip.unila.ac.id

[2]Department of Education Administration, Faculty of Teacher Training and Education, Universitas Lampung, Indonesia.

[3]Department of Education, Faculty of Teacher Training and Education, Universitas Lampung, Indonesia

[4]Department of Mathematics, Faculty of Mathematics and Natural Science, Universitas Lampung, Indonesia

[5]School of Education, La Trobe University, Australia

Abstract

The objectives of the current study were to analyze the following problems: First, if there was any significant difference in engineering students' reading comprehension (RC) ability between male and female; and second, whether there was any significant difference in engineering students' reading comprehension ability among different types of personalities. The participants comprised 190 engineering students at Sumatra Institute of Technology (ITERA) South Lampung Indonesia taking English for Specific Purposes (ESP). The data are collected through an experiment, where the design experiment used in this study is Completely Randomized Block Design (CRBD), where the departments are considered as block. The data are analyzed by using analysis of variance and the results are that there is no difference in students' RC ability between genders; but there are significant differences in their RC ability across different types of personalities.

Keywords: Completely Randomized Block Design(CRBD), reading comprehension, ESP, gender, personality

摘要

关键词:

I. INTRODUCTION

This research was inspired by the fact that the number of students in Sumatra Institute of Technology (ITERA) Indonesia was very big. Each class comprised 90 students coming from 13 departments, male and female [1] , and having different types of personalities. The focus of the English curriculum was on academic reading comprehension because the students were expected to be able to comprehend texts written in English critically, and to write simple scientific writing in English logically, in addition, they were also encouraged to be able to present ideas they had read, summarized and synthesized in English presentation as preparation for becoming professional or at least semiprofessional engineers who were designed to develop Sumatra in particular and Indonesia in general. For that reason, they were supposed to have high ability in academic comprehension, academic writing and academic presentation.

However, it was not an easy task to teach English for Specific Purposes (ESP)([2], [3], [4], [5],[6],[7], that is, English for engineering students from various departments. They need materials which were suitable for all students coming from different departments; besides, they also need activities which could be used to encourage them to learn very happily, easily, and successfully.

For the first step, before going further, since the students derived from various departments, the researcher was interested in investigating the effect of students' departments on their reading ability. Besides, he was also interested in identifying the effect of gender and personalities on students' reading ability. To this end, the researcher put forward the following research questions: First, "Is there any effect of students' gender on their reading comprehension ability?" And second, "Is there any effect of students' personalities on their reading comprehension ability?"

Then the researcher identified the students' departments and gender based on the student list from the academic division before they started to learn English. The types of their personalities were identified by using personality questionnaire.

Concerning reading comprehension, especially in an ESP class, there have been several research that have been carried out to improve students' reading ability [8],[9]. Vo et.al [9] have found out that that there has been a gap between what the graduates need and what they had got in their university. Consequently, their English abilities did not meet the need of their workplace. The authors suggested that the university reconsider the design of teaching materials, and the professional development of the teachers so that the graduates could take part in their workplace effectively. Reading comprehension involves critical thinking. There is no reading comprehension without using critical thinking. Meanwhile, critical thinking itself has been defined in many ways. For example, Paul [10] defines critical thinking as learning how to ask and answer with analysis, synthesis, and evaluation. Critical thinking happens when readers intend to analyze, evaluate, interpret, or synthesize information and apply creative way of thinking to provide an argument, overcome a problem, or draw a conclusion, [11]. Buphate and Esteban [12] emphasize the importance of the need for students to learn English and to practice more critical thinking tasks and approaches in the classroom for them to be competitive in the real world. Similar to the critical thinking concept, other authors used creative thinking or creative practice terms [13],[14],[15],[16],[17],[18],[19],[20],[21],[22],[23]. Although the authors define critical thinking, creative thinking, or creative practice in different ways, the essence is relatively the same, that is, they pinpoint the importance of improving students' abilities and competences to analyze, synthesize, interpret and create meaning based on observable and/or perceived data. They agree that such abilities and competences should be applied to improve students' mastery in all the four language skills – listening, speaking, reading and writing.

Reading comprehension is the process of resulting in and making meaning by means of two major activities - communication and involvement with written text [24]. This process of resulting in and making meaning becomes a responsibility of not only reader and text fact but also situation that occurs within a wider community [25]. Similarly, Duke [26] defines comprehension as the series of activities where readers create meaning by communicating with the text by means of three variables - (a) a mixture of prior knowledge and experience, (b) fact in the text, and (c) the opinion of readers about the text. In other words, Duke [26] underlined the importance of a mixture of prior knowledge and experience in order to comprehend ideas conveyed in a text. Other authors consider reading comprehension as the series of activities to produce meaning based on a text [27],[28]. According to them, the purpose of reading is not to get meaning from single words or sentences, but to get an understanding of the text instead. Psychologically, the product of reading is the mental description of a text meaning that is integrated and unified with the readers' existing knowledge. This psychological mental description is known as a mental model [29] or a situation model [27].

In Indonesian context, many studies on ESP have been carried out but in relatively more general issues. Very small attention has been paid on the effect of students' gender and personalities on their achievement in English. For example, Poedjiastutie and Oliver [30] carried out a study on the pedagogical difficulties in ESP course at Indonesian English as a Foreign Laguage (EFL)-atmosphere. They discovered that common English in ESP classroom contexts still has control over the amount of a particular substance of ESP itself. Another example is the research by Indrasari [31], emphasizing the preservice training for ESP teachers. She used a project-based activity as an effort to deal with the necessaries of successful ESP teaching for the nonprofessional teachers. Similar research carried out by Askar [32] focused on problems that people are talking and thinking about pertaining to ESP teaching and the future possibility of ESP which includes the development of professional ESP-teachers. His findings dealt with the future of ESP teaching in Indonesia. However, none of the studies above paid attention on the impacts of students' gender and personalities on their achievement. This might be caused by the belief that such variables were not related to the students' success in ESP in particular and EFL in general.

Lecturers in universities should find ways to make reading activities and ESP classes more, motivating, challenging and encouraging for students. The current study used authentic materials relevant to each department which were browsed by the students themselves, from international journals [33],[34],[35],[36],[37]. In addition, it also used student-centered learning where students were more

active than the lecturers [38],[39],[40],[41]. Student activities were assessed using authentic assessment so that it can reflect the students' real ability [39],[42],[43]. Weda [44] carried out an investigation on demotivational teaching using regular activities in EFL classroom especially in Indonesia context based on four major demotivating factors – English teachers, materials, classroom management and methods that teachers use. Out of the four factors, the author identified top 10 items that make classroom activities unmotivating; among these are the following: the teachers do not support students to take part in the classroom activity; the teachers do not encourage students to share information in English; the teachers do not behave in a pleasing manner; the teachers tend to educate them without taking into consideration the students' personalities and the learning outcomes; the teachers are not enthusiastic; the teachers use teacher-centered approach or learning; and teaching materials are not suitable for students' interests. To response to these demotivating classroom practices the current study used authentic materials browsed by the students themselves that were relevant and based on their own departments and interest; student active learning, and authentic assessment.

A. Gender

Gender refers to a wide range of attributes such as economy, society, politics, and culture and chances pertaining to becoming females and males [45]. However, the definition of gender varies among cultures and has potential to change over time. Jhpiego [45] further defines gender as a sociocultural expression of certain characteristics and positions relating to particular groups of men, women and children with reference to their sex and sexuality. Another author defines gender as an individual idea of oneself as male or female (or rarely, both or neither) [46]. This idea is closely associated with the idea of gender position, which is usually considered as the superficial appearance of personality that shows the gender indicator. According to Ghosh [46] gender indicator, in almost all situations, is self-identified, as a result of a mixture of inherent and extrinsic or environmental domains.

By contrast, gender position refers to appearance within a community of overt facts such as behavior and appearance. For instance, if an individual considers himself a male and is most pleasing referring to his personal gender in male terms, then his gender identity is male. However, his gender position is male only if he shows typical male characteristics in behavior, dress, and/or mannerisms. Another similar definition of gender is that it refers to five components: a set of positions, duties, rights, expectations and obligations that are related to being male or female culturally or socially [47]. In addition, it also includes the control relations between and among females and males, and girls and boys. It is based on commonly accepted beliefs and expected behaviors within a society or culture about male and female noticeable qualities and

positions. In short, it can be summarized that gender is an attribute that someone has that can be a combination of internal and external or environmental factors which determine whether someone belongs to male or female. Some researchers, like Seifoori [48] have carried out studies on the effect of gender on students' language performance. The author has found that there were some differences in the use of metacognitive strategies among the participants with different departments but he did not find differences in the use of metacognitive strategies between males and females except in the use of self-evaluation strategy that females less often use. As an implication, the author recommends that ESP students should be prepared more on the use of metacognitive strategies.

B. Personality

Encyclopedia Britannica [49] defines personality as someone's way of thinking, feeling, and behaving which covers moods, attitudes, and opinions and is most clearly expressed in communications with other society. Personality contains behavioral features as parts of it, both existing as a natural part and/or obtained that distinguishes one individual from another and can be observed in people's associations to the surrounding and to the social group. It is described in Encyclopedia Britannica [49] that there are many ways to define personality, but psychologically, personality has two primary meanings that have gradually developed. Firstly, it refers to the unchanging differences that are available between people: in this sense, a personality research is concentrated on categorizing and describing comparably firmly fixed human psychological features. The second meaning underlines those qualities that make all people similar and that differentiate psychological human being from other creatures. Another meaning of personality leads the personality expert to find out those regular patterns among all human being that specify the essence of man as well as the factors that influence the development of lives. Cherry [50] defines personality from psychological perspective. According to the author, it is briefly explained as the typical patterns of thoughts, feelings, and behaviors that make a person differ from one another. In other words, it is what makes you *you*. In short, although personality has been defined in many ways, the essence is similar, that is, it is a typical or noticeable quality of someone which determines the ways of his thinking, behaving, interacting with others, and learning that makes an individual unique.

In the current study, there were four types of personality – choleric, sanguine, melancholic and phlegmatic [51]. Each of the four types of personality has its own characteristics; strong points beside weak points. A choleric person is considered as an individual whose testosterone is dominant. A choleric person has a strong will; is busy, energetic and happy; easily gets angry and easily gets annoyed [51],[52]. In addition, a choleric person is also identified as independent, practical, confident and decisive, visionary, always

having a lot of ideas, a designer, focused, very physically and mentally dynamic, and strong and healthy, as well as rarely panics under pressure. Since a choleric person is very attentive to the bigger part of something, he/she often tends to ignore the details and analyze them, which may cause him/her to quickly make decision.

The second type of personality is sanguine. A sanguine person tends to be lively, sociable, carefree, talkative, and pleasure-seeking [51],[53]. They can also be kind and loving as well as hopeful. It is easy for them to be familiar with new people because of their sociable nature as well as their being original, clever, and skillful; this also makes them have so many opinions. A person with sanguine personality tends to be not responsible and likely to change activities, jobs, and lovers. Because of this, a person of this type may have trouble in doing the tasks assigned to him/her and may at time be continuously late or forgetful. A sanguine person is socially extroverted. Apart from being attractively full of energy, enthusiastic, and talkative, they are also frankly emotional. But sanguine people have weaknesses, such as they are easily get bored and tend to talk more than listen to others, among others. The next type of personality is melancholic. A melancholic person [51],[54] can be easily identified by the following characteristics: he/she is a reflective and deep thinker, not humorous, serious, not interested in superficial things, talented, creative and artistic, introverted, not comfortable being in a large crowd, and well organized and has high standards. Melancholic people have some weaknesses, and among others are the following: pessimistic, have a low self-image, tend to remember the unpleasant events more often than the happy ones, set hardly reachable goals for the family and the children, and might not be willing to take on new responsibilities and projects. The last type of personality is phlegmatic. A phlegmatic person [51],[55] is known 10 the following characteristics: an introverted person, quiet, gentle, not willing to argue or state his/her opinions in a forceful way, submissive, avoids conflict, wants peace, ready to tell others that he/she is wrong just to avoid an escalation in any unfriendliness, tends to blame themselves a lot, extremely trustworthy, tends to postpone decisions with others when possible, and prefers to spend time alone.

II. RESEARCH METHOD

The research uses a completely randomized block design with factorial treatment structure – (gender and personality as factors; department as block, i.e., an external variable that cannot be controlled by the research). It is one of the simplest experimental designs from the standpoint of assignment of treatment level to subjects or experimental units and data analysis [56],[57]. According to the authors [56],[57] one of the advantages of the completely randomized block design is that the experimental units available for use are as homogeneous as possible in each block; i.e., there is no source of variation that can be recognized among them

under any grouping or arrangement. Furthermore, there are three other main advantages of the use of completely randomized block design: flexibility, that is, any number of treatments and any number of replications may be used; simplicity, that is, the analysis is simple even though with unequal replication, and is not complicated when some information is missing; and maximum degrees of freedom. Of course, the design also has disadvantages, where its precision being low if the experimental units are different in any way, is the biggest disadvantage. To overcome this disadvantage, the units can be grouped into blocks of homogeneous units which will result in increased precision [56]. It is not always easy in statistical practice to get the experimental units completely homogeneous. It is usual to group experimental units based on a stratification factor (e.g., in clinical population: categorized based on patient's age, degree of disease, etc.). A gain in efficiency compared to the completely randomized experiment is possible by grouping into blocks provided that we have such prior information. In such a case, the experimental units are united together in homogeneous groups (blocks), and then the treatments are put to the experimental units within each block by random. Consequently, the block effect, that is, differences between the blocks, can now be sorted out from the experimental error. This makes precision higher. The strategy of building blocks will make variability within each block as small as possible and variability among blocks as high as possible [58].

To determine whether there was an effect of gender, personality, and interaction of gender and personality with departments as a block, the model is as follows:

$$RC_{ijkl} = \mu + D_i + G_j + P_k + GP_{jk} + \varepsilon_{ijkl} \quad (1)$$

where RC is reading comprehension; μ, grand mean; D_i, the effect of ith level of department; G_j, the effect of jth level of gender; P_k, the effect of kth level of personality; and GP_{jk} the interaction of jth level of gender and k^{th} level of personality; ε_{ijk} the error term.

A. The Experimental Plan

Each treatment, in a completely randomized block design, is to be randomly assigned to several experimental units within each block. The block is the departments where the students studied. There were four departments involved in this study: Geometric Engineering, Civil Engineering, Urban Planning Engineering, and Informatics Engineering. There are several ways to do this. In this study, the randomization used random number, namely each treatment combination are assigned to each block. The current study underpins the student at four departments (as stated above); student gender, two (male and female); and student personality, four (choleric, sanguine, melancholic, and phlegmatic). This study was conducted in Sumatra Institute of Technology (ITERA), South Lampung Indonesia. The participants comprised 190 engineering students taking ESP in the

second semester - (2 times 100 minutes per session in every week). The students came from various regions throughout Indonesia. They had science majors when they were studying at senior high schools. ITERA only recruits new students from science majors in the secondary schools. To conduct the research with four departments, two genders and four types of personalities, this experiment required 32 experimental units which were numbered from 1 to 32.

III. RESULTS AND DISCUSSION

This study was intended to investigate the effect of departments, gender and personality on engineering students' English reading comprehension. The research questions whose answers were sought comprised the following: first whether there was a difference in student reading comprehension ability among different departments; secondly whether there was a difference in student reading comprehension ability between genders; and finally whether there was a difference in student reading comprehension ability among students with different personality types. The results of the data analysis for each question are described in detail in the following section.

First of all, to determine whether the model can be used to explain RC, the null hypothesis is that the model is not significant.

Table 1.
Analysis of variance for testing the model

Source	DF	Sum of squares	Mean square	F-test	p-value
Model	10	4704.45	470.44	26.94	<.0001
Error	179	3126.27	17.46		
Corrected total	189	7830.72			

$R^2 = 0.6008$

From Table 1 above, the test statistic is that F-test - 26.94 with p-value <0.0001; therefore, the null hypothesis is rejected and we could conclude that the model is very significant. R^2 - 0.6008 means that 60.08% of the variation of RC can be explained by the model.

A. The Effect of Students' Gender and Their Reading Comprehension Ability

The first research question was put forward to investigate whether there was an effect of student gender on their reading comprehension ability. The null hypothesis is that there is no difference between genders.
Table 1 shows that, the analysis of variance for testing the model, the F-test is 26.94 with the p-value is <0.0001, and conclude that the model is very significant. With R-squares is 0.6008, this means that 60.08% of the variation of reading comprehension can be explained by the model. And in line with the results,

it can be inferred that the model can be used for further analysis. The following table shows the effect of gender on student RC ability.

Table 2.
Analysis of Variance

Source	DF	Sum of squares	Mean square	F-test	p-value
Dept	3	35.146	11.715	0.67	0.5710
Gender	1	50.574	50.574	2.90	0.0906
Pers	3	4556.584	1518.862	86.97	<.0001
Gender*Pers	3	62.1431	20.714	1.19	0.3165

Table 2 shows that the departments as a block is not significant different with F-test=0.67 with p-value is 0.5710>0.05. The test for the effect of Gender shows that the F-test is 2.90 with p-value is 0.0906 >0.05 and consequently there is no significant different between male and female student in RC, this result also in line with distribution of RC across gender (Figure 1). The test for the effect of Personality shows that the F-test is 86.97 with p-value is <0.0001 and consequently there is significant different among personalities in RC, this result also in line with distribution of RC across personalities (Figure 2). The test for the effect of interaction between Gender and personalities shows that the F-test is 1.19 with p-value is 0.3165 >0.05 and consequently there is no significant interaction between Gender and Personality in RC, this result also in line with distribution of RC across gender and personalities (Figures 3 and 4). Each student in each gender had the same or similar possibility to be successful or unsuccessful readers.
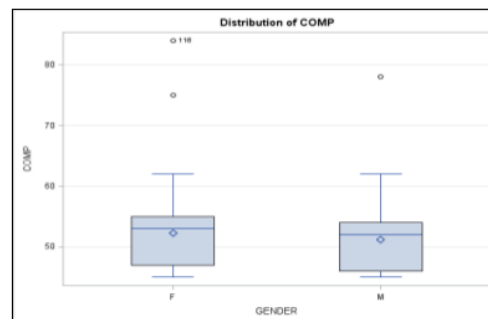

Figure 1. Box plot of the distribution of RC based on gender

The results of F-test above also appeared in Figure 2, Box Plot, where the effect was relatively the same. In other words, gender did not affect the students' reading comprehension ability. Both male and female students had the same opportunity to be successful or unsuccessful in reading comprehension. This can be seen from the lowest scores and highest scores in both genders which were similar. Although there were some scores which were very high, they were considered outliers. Based on these findings, it can be interpreted that equality between men and women involves the concept that all mankind not only men but also women have the same freedom to develop their personal

abilities and to freely choose without any restrictions predetermined by stereotypes, rigid gender roles and unreasonable opinions or feelings [59].

These findings were also similar to the previous research [60],[61] investigated whether learners' gender could differentiate their reading comprehension and use of reading strategies in descriptive and narrative macro-genres. The researcher found that there was no statistically significant difference between male and female students' reading comprehension in these macro-genres. It was also shown that there was no significant difference observed between male and female learners in the overall use and employment of reading strategies in the descriptive and narrative macro-genres. Likewise, Deveci and Nunn [61] conducted research on the development of students' emotional intelligence in project-based course. They found no statistically significant difference between male and female in their emotional development.

By contrast, Adel and Enayat, [62] and Arellano [63] found different results. Adel and Enayat [62], who investigated gender representation and stereotyping in ESP textbooks in Iran, found that male students were more active and competent in technology and tourism. Further, men were more frequently presented in workplaces and shown as breadwinners in commerce, nursing, and technology. This might have been caused by sociocultural aspects which might be different from those in the Indonesian context. Similarly, Arellano [63], who investigated male and female students' reading ability, found that female students got better global results than their male counterparts. Female students also got better scores in the specific objectives: identifying specific information, emphasizing general information, understanding the structure of text, and inferring contextual meaning.

B. The Effect of Personality on Engineering Students' Reading Comprehension

The final research question was whether there was a difference in engineering students' reading comprehension ability among the types of student personality. The null hypothesis is that there was no difference among personalities in students' reading comprehension. The results of F-test for personality are shown in Table 3 below.

Table 3.
The results of Tukey's Studentized Range (HSD) test for reading comprehension

Personality comparison	Differences between mean	Simultaneous 95% confidence	
		Lower limits	Upper limits
Ch - M	5.96*	3.79	8.14
Ch - S	11.23*	9.14	13.33
Ch - Ph	12.21*	9.87	14.56
M - S	5.27*	3.11	7.43
M - Ph	6.25*	3.85	8.65
S - Ph	0.98^{ns}	-1.35	3.31

Note: * means very significant

Pertaining to the results of the data analysis, as shown in Table 3, it was found that there were significant differences among different types of personalities. There were six categories of comparison shown in Table 3 above as follows: first, comparison between choleric and melancholic people showed significant difference; second, comparison between choleric and sanguine people also showed significant difference; third, comparison between choleric and phlegmatic people showed significant difference; fourth, comparison between melancholic and sanguine people resulted in significant difference; fifth, comparison between melancholic and phlegmatic people was significant difference; and finally, comparison between sanguine and melancholic people was found to be significantly different.
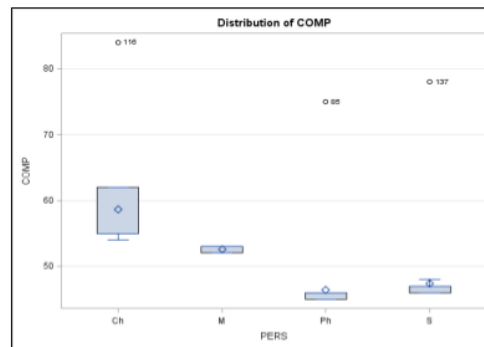

Figure 2. Box plot of the distribution of RC based on personality

The results of the F-test were also reflected on Figure 3, Box Plot, above. As Figure 3 shows, it can be understood that all pairs of personality showed significant differences in student reading comprehension ability, where choleric students showed highest ability to read authentic materials taken from international journals, which were relevant with their disciplines. By contrast, phlegmatic students showed the lowest ability to read. These differences may be related to the natures of their personalities where choleric people have firm intention, high self-confidence, and fast problem solving skill and are brave to take risks, whereas phlegmatic people tend to have less firm intention, low self-confidence, and low problem solving skill, and are reluctant to take risks.

Another interpretation of these findings was that personality plays a very important role in education because it may make differences in knowledge and comprehending ideas, recalling facts (lower order thinking skills) in Bloom's Taxonomy [64], and making differences in application, analysis, synthesis and evaluation (higher order thinking skills) [65]. By considering the effects of student personality, lecturers may help students be more successful in comprehending, analyzing, synthesizing and creating new ideas based on texts they were reading, that is, in developing higher order thinking skills to improve their

success in learning. Unfortunately, based informal interview with the lecturers, almost all lecturers never pay attention to the students' personality.

C. The Interaction of Gender and Personality

As regards the interaction of gender and personality on students' reading comprehension ability, it was found out that, although there were significant differences among the different types of personalities and the students' reading comprehension ability, there was no interaction between gender and personality. This finding was shown by the following figure.
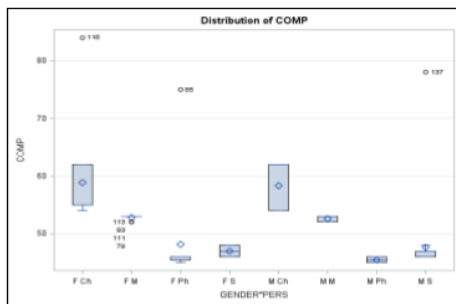

Figure 3. Box plot of the interaction of gender by personality

Figure 3 shows that the students' comprehension ability significantly differed among various types of personalities (choleric, melancholic, sanguine, and phlegmatic). As the figure shows, choleric students achieved the highest scores on reading comprehension, where the achievement of choleric students was significantly different from that of melancholic. The reading achievement of melancholic students was significantly different from that of phlegmatic students, whereas the reading comprehension achievement of phlegmatic students tends to be similar to that of the sanguine students. When the spread of scores was observed, it was found that the reading comprehension scores of choleric students were more widely spread than that of melancholic, sanguine and phlegmatic sstudents. It means that the reading achievement of choleric students was varied. By contrast, the reading achievement of melancholic, sanguine and phlegmatic students tends to be similar; therefore, their scores tend to be gathered in a small plot. Based on this finding, it can be summarized that gender and personality are two independent identities of the students which do not influence each other.

The interaction between gender and personality can also be seen in Figure 4.
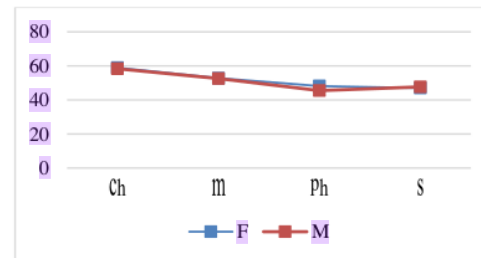

Figure 4. Interaction between gender and personality

Figure 4 shows that the differences between gender (male and female) on reading comprehension ability are very small; the lines showing the scores of reading comprehension abilities between male and female students are almost attached to each other, and the interaction between gender and personality is very small. This suggests that both male and female students' opportunity to get higher scores on reading comprehension using authentic materials is similar. They have the same right and chance to be successful on reading comprehension.

IV. CONCLUSIONS AND SUGGESTIONS

Based on the results of the data analysis, the following conclusions can be drawn: first, students' departments do not effect on their reading comprehension ability; second, likewise, the students' gender do not influence their reading comprehension ability; and finally, unlike students' departments and genders, their different types of personality affected significantly their reading comprehension ability.

However, some limitations of the current research have been found. The number of male and female participants was not balanced. This was due to the fact that almost all departments in ITERA were dominated by male students, which might be caused by the nature of the departments there, that is, engineering. Female students are generally not interested in engineering. And the other limitation was that the time allocation for ESP courses was very limited, that is, two-hour session in a week for only one semester. Although this course was found to be effective to improve their English ability, especially for reading comprehension and some writing as well as presentation, the sustainability is relatively low.

Therefore, the following recommendations are put forward: First, for next researchers, it is suggested to make the number of each gender (male and female) balanced so that the effect on students' reading ability can be found convincingly. The other suggestion is given that English plays a very important role in higher education especially in ITERA, it is recommended that ITERA authority should allocate more time for ESP so that the students can be served more completely and more advanced in all English language skills (listening, speaking (presentation), reading, and writing). Above all, given that almost no lecturer took into consideration

on student personality, it is recommended that all lecturers pay attention students' personalities so that they can serve their students more optimally and the students may achieve better what they have to achieve. Finally, decision makers in ITERA should design curriculum of ESP by taking into consideration student variable, especially their personality.

ACKNOWLEDGMENT

REFERENCES

[1]ITERA NEWS. 2019. *Rektor Kukuhkan 3.660 Mahasiswa Baru ITERA* (*The Rector of ITERA officially declared 3.660 ITERA new students*). https://www.itera.ac.id/3-660-mahasiswa-baru-itera-dikukuhkan/

[2]SIDDIQUI, A., ILLYAS, R., JOKHIO, R.A. 2017. Defining the Role of Assessing Strategies to Evaluate Individual Language Differences within ESP Students. *International Journal of Language and Literature December 2017, Volume 5, Issue 2,* pp. 155-161. DOI: 10.15640/ijll.v5n2a16   URL: https://doi.org/10.15640/ijll. v5n2a16

[3]SIDDIQUI, A. 2018. Investigating the dilemma of noise within over-crowded classroom of a public sector school hyderabad, pakistan. *English for Specific Purposes World*, *Issue No.56, v.20,* 201, pp. 1-8.

[4]TZOANNOPOULOU, M. 2016. Foreign language anxiety and fear of negative evaluation in the Greek university classroom *Selected Papers of the 21st International Symposium on Theoretical and Applied Linguistics (ISTAL 21),* pp. 823-838

[5]KATHPALIA, S.S., ONG, K.K.W., & LEONG, A.P. (2019). Communication Needs of Science Graduate Students. RELC Journal, pp. 1-17. DOI: 10.1177/0033688218822152 journal.sagepub.com/home/rel t

[6]SHAHMORADI, Y., & IZADPANAH, S. 2017. Assessing the English Language Needs of Persian Literature University Students from Teachers' Perspective. *Journal of Recent Research in English Language Studies, Volume 4, Issue 1, 2017,* pp.33-68

[7]WIJAYA, H., & CIPTANINGRUM, D.S. 2019. Resource-based Learning: A Paradigm Shift in Materials Design. *Advances in Social Science, Education and Humanities Research (ASSEHR), volume 330. 6th International Conference on Educational Research and Innovation (ICERI 2018).* https://www.academia. edu/ 39955655/ Resource-based_Learning_A_Paradigm_Shift_in_Materials_De sign (http://creative commons.org/ licenses/by-nc/4.0/

[8]GILAKJANI, A.P. & SABOURI, N.B. (2016). How can students improve their reading comprehension skill? *Journal of Studies in Education, 2016, Vol. 6, No. 2,* pp. 229 – 240.

[9]VO, T.H.L., WYATT, M. & MCCULLAGH, M. 2016. Exploring the gap between Vietnamese workplace communication in English and English language teaching at a university. *The Asian ESP Journal, Volume 12, Issue 1, 2016,* pp. 8-38

[10]PAUL, R. (1990). *Critical thinking*. Rohnert Park, CA: Sonoma State University Center for Critical Thinking and Moral Critique.

[11]GREAT SCHOOL PARTNERSHIP, 2014. *The Glossary of Education*. 482 Congress Street, Suite 500. Portland: greatschoolpartnership.org

[12]BUPHATE, T. & ESTEBAN, R.H. 2018. Integration of critical thinking approaches in Thailand university classrooms: Receptive analysis. *The Asian EFL Journal Quarterly, 2018, Volume 20, Issue 6,* pp. 414– 428.

[13]CIROCKI, A. & WIDODO, H.P. 2019. Reflective Practice in English Language Teaching in Indonesia: Shared Practices from Two Teacher Educators. *Iranian Journal of Language Teaching Research 7(3), (Oct., 2019),* pp. 15-35. Available at http://ijltr.urmia.ac.ir

[14]FARRELL, T.S.C. (2018). *Research on reflective practice in TESOL*. New York: Routledge.

[15]FARRELL, T.S.C. (2018). *Reflective language teaching: Practical applications for TESOL teachers*. London, UK: Bloomsbury

[16]FARRELL, T.S.C. & BENNIS, K. (2013). Reflecting on ESL teacher beliefs and classroom practices: A case study. *RELC Journal, 44,* 163-176.

[17]FARRELL, T.S.C. & IVES, J. (2015). Exploring teacher beliefs and classroom practices through reflective practice. *Language Teaching Research, 19* (5), 594-610.

[18]FARRELL, T.S.C. (2019a). *Reflection as action in ELT*. Alexandria, Va, USA: TESOL International publications.

[19]FARRELL, T.S.C. (2019b). *Reflective practice in ELT*. London, UK: Equinox.

[20]DONYAIE, S., & AFSHAR, H.S. 2019. EFL Teachers' Reflective Journal Writing: Barriers and Boosters. *Iranian Journal of Language Teaching Research 7(3), (Oct., 2019),* pp. 71-90, available at http://ijltr.urmia.ac.ir

[21]RAHMATI, T., SADEGHI, K., & GHADERI, F. 2019. English as a Foreign Language Teacher Immunity: An Integrated Reflective Practice. *Iranian Journal of Language Teaching Research 7(3), (Oct., 2019),* pp. 91-107, available at http://ijltr.urmia.ac.ir

[22]PLAYSTED, S.A. 2019. Reflective Practice to Guide Teacher Learning: A Practitioner's Journey with Beginner Adult English Language Learners. *Iranian Journal of Language Teaching Research 7(3), (Oct., 2019),* pp. 37-52 available at http://ijltr.urmia.ac.ir

[23]GUTIÉRREZ, M.V.A., ADASME, M.A.N., & WESTMACOTT, A. 2019. Collaborative Reflective Practice: Its Influence on Pre-service EFL Teachers' Emerging Professional Identities. *Iranian Journal of Language Teaching Research 7(3), (Oct., 2019),* pp. 53-70, available at http://ijltr.urmia.ac.ir

[24]RAND READING STUDY GROUP. (2002). *Reading for under-standing: Toward a research and*

development program in reading comprehension. Santa Monica, CA: Office of Education Research and Improvement.

[25]McNAMARA, D.S., & MAGLIANO, J. P. (2009). Towards a comprehensive model of comprehension. In B. Rose (Ed.), *The psychology of learning and motivation* (pp.297-384). New York, NY: Academic Press

[26]DUKE, N. (2003). *Comprehension instruction for informational text*. Presentation at the annual meeting of the Michigan Reading Association, Grand Rapids, MI.

[27]KINTSCH, W. (1998). *Comprehension: A paradigm for cognition*. Cambridge, UK: Cambridge University Press.

[28]VAN DIJK, T. A., &KINTSCH, W. (1983). *Strategies of discourse comprehension*. New York: Academic Press. http://dx.doi.org/10.1177/1461445606059565

[29]JOHNSON-LAIRD, P.N. 1983. *Mental model: Towrds a cognitive science of language, inference and consciousness*. Cambridge, Messachusetts: Harvard University Press.

[30]POEDJIASTUTIE, D., & OLIVER, R. (2017). English learning needs of ESP learners: Exploring stakeholder perceptions at an Indonesian University. *TEFLIN Journal*, 1.

[31]INDRASARI, N. (2016). Project Based Learning in English for Specific Purposes (ESP) Course for Pre-Service Teacher. *English Education: Jurnal Tadris Bahasa Inggris, Volume 9, Issue 2*, pp. 366-379.

[32]ASKAR, K. (2013). Reformulating English For Specific Purposes (Esp) In Indonesia: Current Issues and Future Prospects. *Proceedings of ISELT FBS Universitas Negeri Padang, 1*, 36-48.

[33]ABBASIAN, G.-R., MAHMOUDI, H. M., & SHAHBAZI, A. (2016). An Investigation into the Effect of Authentic Materials on Improving Intermediate EFL Learners' Pragmatic Competence. *Journal of Applied Linguistics and Language Research, Volume 3, Issue 5*, pp. 264-275.

[34]AKBARI, O., & RAZAVI, A. (2016). Using authentic materials in the foreign language classrooms: Teachers' perspectives in EFL classes. *International Journal of Research Studies in Education, 5*(2), 105-116.

[35]GHANBARI, N., ESMAILI, F., & SHAMSADDINI, M. R. (2015). The effect of using authentic materials on Iranian EFL Learners' vocabulary learning. *Theory and Practice in Language Studies, 5*(12), 2459-2468. doi:10.17507/tpls.0512.05

[36]KILIÇ, Z. V., & İLTER, B. G. (2015). The effect of authentic materials on 12th grade students' attitudes in EFL Classes. *ELT research journal, 4*(1), 2-15.

[37]KUSUMAWARDANI, R., SANTOSA, R., & ROSCHSANTININGSIH, D. (2018). Explore the Use of Authentic Materials to Teach Reading for Junior High School. *International Journal of Multicultural and Multireligious Understanding, 5*(4), 298-307.

[38]ASOODEH, M. H., ASOODEH, M. B., & ZAREPOUR, M. (2012). The impact of student-centered learning on academic achievement and social skills. *Procedia-Social and Behavioral Sciences, 46*, 560-564.

[39]DANO-HINOSOLANGO, M. A., & VEDUA-DINAGSAO, A. (2014). The Impact of Learner-Centered Teaching on Students' Learning Skills and Strategies.

[40]KAPUT, K. (2018). Evidence for Student-Centered Learning. *Education Evolving*.

[41]NAIR, S. P., SHAH, T., SETH, S., PANDIT, N., & SHAH, G. (2013). Case based learning: a method for better understanding of biochemistry in medical students. *Journal of clinical and diagnostic research: JCDR, 7*(8), 1576.

[42]FREY, B. B., SCHMITT, V. L., & ALLEN, J. P. (2012). Defining authentic classroom assessment. *Practical assessment, research & evaluation, 17*(2).

[43]KEARNEY, S. (2013). Improving engagement: the use of 'Authentic self-and peer-assessment for learning' to enhance the student learning experience. *Assessment & Evaluation in Higher Education, 38*(7), 875-891.

[44]WEDA, S. 2018. Demotivational teaching practices in EFL classroom: Perceptions of English among Indonesian learners. *The Asian EFL Journal Quarterly, 2018, Volume 20, Issue 6*, pp. 399 – 413.

[45]JHPIEGO (John Hopkin University Affiliate Jhpiego), 2019. *Gender concepts and definitions*. 1615 Thames Street Baltimore, MD 21231-3492, USA. Source: https://gender.jhpiego.org/analysistoolkit/gender-concepts -and-definitions/

[46]GHOSH, S. MD. 2015. *Gender identity and gender role*. Source: https://emedicine.medscape.com/ article/917990-overview.

[47]JOHN HOPKINS UNIVERSITY. 2017. *Key gender concepts*. https://sbccimplementationkits.org/gender/key-gender-concepts/

[48]SEIFOORI, Z. 2014. Discipline and gender variation in ESP learners' use of metacognitive strategies. *Iranian Journal of Language Teaching Research 2(2), (July, 2014)*, pp. 13-34

[49]ENCYCLOPEDIA BRITANNICA (2019) by Encyclopedia Britannica, Inc.

[50]CHERRY, K. 2019. *Theories and terminology of personality psychology*. https://www.verywellmind. com/personality-psychology-study-guide-2795699

[51]LITTAUER, F. 1992. *Personality plus*. Erina, NSW, Australia: Strand Publishing

[52]CHRIS, J. 2016. *Choleric Personality type*. Houston: Corporate HQ. http://www.josephchris. com/choleric-personality-type.

[53]CHRIS, J. 2016. *Sanguine personality type*. 4501 Magnolia Cove Dr. Ste. 203 - Kingwood Houston: Corporate HQ. http://www.josephchris.com/sanguine-personality-type

[54]CHRIS, J. 2016. *Melancholic personality type*. 4501 Magnolia Cove Dr. Ste. 203 - Kingwood Houston: Corporate HQ. http://www.josephchris.com/melancholic-personality-type

[55]CHRIS, J. 2016. *Phlegmatic personality type*. 4501 Magnolia Cove Dr. Ste. 203 - Kingwood Houston: Corporate HQ. http://www.josephchris.com/sanguine-personality-type.

[56]USMAN, M., ELFAKI, F.A.M. & DAOUD, J.I. 2008. *Experimental design for scientists and engineers. Se*langor: IIUM Press.

[57]MILLIKEN, G.A., & JOHNSON, D.E. 2009. *Analysis of messy data volume 1: Designed experiments, second edition*. London: CRC Press Informa UK Limited.

[58]TOUTENBURG, H., 1995. *Experimental Design and Model Choice: The Planning and Analysis of Experiments with Continuous or Categorical Response*, Berlin Heidelberg: Springer-Verlag.

[59]UNESCO United Nations Educational, Scientific and Cultural Organization. 2012. *Gender Equality and Equity: A Summary Review of UNESCO's accomplishments since the Fourth World Conference on Women Beijing* 1995. [pdf] Available at http://www.unesdoc.unesco.org/images/0012/001211/121145e.pdf [Accessed 17 January 2012].

[60]ASGARABADI, Y.H. 2015. Learners' Gender, Reading Comprehension, and Reading Strategies in Descriptive and Narrative Macro-genres. *Theory and Practice in Language Studies, Vol. 5, No. 12, December 2015*, pp. 2557-2564 DOI: http://dx.doi.org/10.17507/tpls.0512.17; https://www.researchgate.net/publication /287157437

[61]DEVECI, T & NUNN, R. 2016. Development in freshman engineering students' emotional intelligence in project-based courses. *The Asian ESP Journal, Volume 12, Issue 2, 2016*, pp. 54-92.

[62]ADEL, S.M.R. & ENAYAT, M.J. 2016. Gender representation and stereotyping in ESP Textbooks. *The Asian ESP Journal, Volume 12, Issue 3, 2016*, pp. 94-119

[63]ARELLANO, M.D.C., 2013. Gender differences in reading comprehension achievement in English as a foreign language in Compulsory Secondary Education. *Tejuelo*, nº 17 (2013), págs. 67-84. https://scholar.google.co.id/scholar?q=Arellano,+M.D.C.,+2013.+Gender+differences&hl=en&as_sdt=0&as_vis=1&oi=scholart

[64]KRATHWOHL, D.R. (2002). A Revision of Bloom's Taxonomy: An Overview. *Theory Into Practice, Volume 41, Number 4, Autumn 2002*, pp. 212-218. https://www.google.com/search?client=firefox-b-&q= Anderson +%28 2001%29+Bloom+Taxonomy

[65]ANDERSON, L. W. AND KRATHWOHL, D. R. (Eds..) (2001) *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives*. Allyn & Bacon. Boston, MA (Pearson Education Group)

参考文:

APPLICATION OF COMPLETELY RANDOMIZED BLOCK DESIGN (CRBD) TO ASSESS THE EFFECT OF GENDER AND PERSONALITY ON STUDENTS' READING COMPREHENSION ABILITY

ORIGINALITY REPORT

5%

SIMILARITY INDEX

PRIMARY SOURCES

1   Xiao-song Xie, Xun-sheng Feng, Qi-liang Ren. "Adjustment Plan of Passenger Traffic Special Line Optimization Study", Logistics, 2009
Crossref
28 words — 1%

2   repository.uinjkt.ac.id
Internet
26 words — < 1%

3   eudl.eu
Internet
26 words — < 1%

4   doaj.org
Internet
23 words — < 1%

5   "CIES Bibliography 2012", Comparative Education Review, 2013.
Crossref
18 words — < 1%

6   Xin Chen, Gengsheng Xiao. "A Survey Study of Chinese College Engineering Students' Use of Metacognitive Strategies in English Writing☒", Theory and Practice in Language Studies, 2016
Crossref
17 words — < 1%

7   Mary Ann Maslak. "Higher Education and Women: Deconstructing the Rhetoric of the Education for All (EFA) Policy", Higher Education in Europe, 2005
Crossref
14 words — < 1%

8	dspace.lboro.ac.uk Internet	14 words — < 1%
9	Teresa M. Shaft. "Responses to comprehension questions and verbal protocols as measures of computer program comprehension processes", Behaviour & Information Technology, 1997 Crossref	14 words — < 1%
10	www.readbangkokpost.com Internet	13 words — < 1%
11	digital.library.okstate.edu Internet	11 words — < 1%
12	researchportal.port.ac.uk Internet	11 words — < 1%
13	vbn.aau.dk Internet	10 words — < 1%
14	etheses.iainponorogo.ac.id Internet	10 words — < 1%
15	globalscienceresearchjournals.org Internet	9 words — < 1%
16	www.ijeionline.com Internet	9 words — < 1%
17	digilib.iain-palangkaraya.ac.id Internet	9 words — < 1%
18	eprints.umm.ac.id Internet	8 words — < 1%
19	pt.scribd.com Internet	8 words — < 1%
20	www.iier.org.au Internet	8 words — < 1%

21 ph01.tci-thaijo.org
    Internet   8 words — < 1%

22 www.asian-efl-journal.com
    Internet   8 words — < 1%