AN ANALYSIS ON CBT NATIONAL EXAMINATION EFFECT: STUDENTS' COGNITIVE READINESS AND ANXIETY FACING ENGLISH TESTS

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Abstrak

Tujuan penelitian ini adalah untuk mengetahui pengaruh ujian nasional CBT dan PBT terhadap kesiapan kognitif siswa dan kesiapan mental menghadapi ujian nasional bahasa Inggris di Kabupaten Cilacap, pengaruh jurusan dalam hal kesiapan kognitif siswa dan kecemasan menghadapi ujian nasional bahasa Inggris. di Kabupaten Cilacap, dan interaksi antara ujian nasional dan jurusan. Penelitian ini bersifat deskriptif eksploratif dan metode ex-post facto. Populasinya adalah semua siswa SMA IPA dan IPS kelas XII di Kabupaten Cilacap barat. Jumlah sampel yang digunakan adalah 674 siswa. Hasil penelitian menunjukkan bahwa ada pengaruh signifikan ujian nasional dalam hal kesiapan kognitif siswa dan kesiapan mental menghadapi ujian nasional. Namun, ujian nasional CBT dan PBT tidak mempengaruhi kesiapan kognitif menghadapi ujian nasional, CBT dan PBT mempengaruhi mental siswa siswa menghadapi ujian nasional. Skor rata-rata kesiapan mental yang menghadapi ujian nasional CBT lebih tinggi daripada kesiapan mental siswa dalam menghadapi ujian nasional PBT. Tidak ada pengaruh yang disebabkan oleh perbedaan dalam hal kesiapan kognitif dan kesiapan mental dalam menghadapi ujian nasional bahasa Inggris; dan tidak ada interaksi antara berbagai jenis ujian nasional dan jurusan.
Kata kunci: CBT; PBT; kesiapan kognitif; kesiapan mental, ujian nasional

Abstract

The purpose of this study was to know the influence of CBT and PBT national examination dealing with students' cognitive readiness and anxiety facing English national examination in Cilacap regency, the influence of major in terms of students' cognitive readiness and anxiety facing English national examination in Cilacap regency, and the interaction between national examination and major. This research was descriptive explorative and the method was ex-post facto. The population was all of natural and social science high school students in grade XII in Cilacap regency. The number of sample used was 352 students. The results showed that there was significant influence of national examination in terms of students' cognitive readiness and anxiety facing national examination. However, CBT and PBT national examination did not influence the cognitive readiness facing national examination, CBT and PBT national examination influence in national examinations in terms of students' anxiety facing national examination. The

average score of the students' anxiety facing CBT national exam was higher than that of the students' anxiety facing PBT national examination. There was no effect caused by differences in majoring in terms of cognitive readiness and anxiety in facing English national examination; and there was no interaction between the different types of national examinations and majors.

Keywords :CBT; PBT; cognitive readiness; anxiety, national examination

التجريد

وكان الغرض من هذه الدراسة هو تحديد تأثير الامتحان الوطني CBT و PBT إلى الطلاب المعرفية استعداد والقلق الامتحانات الوطنية الإنجليزية في سيلاكاب ريجنسي الغربية، وتأثير الشركات الكبرى من حيث الطلاب الاستعداد المعرفي والامتحانات الوطنية القلق الإنجليزية. في منطقة سيلاكاب الغربية ، والتفاعل بين الامتحان الوطني والتخصصات. هذا البحث هو وصفي استكشافي وطريقة أخرى. السكان هو كل شيء طبيعي و IPS اطلاب المدارس الثانوية من الدرجة XII في سيلاكاب غرب حي. عدد العينات المستخدمة كان 352 طالبًا. وأظهرت النتائج أن هناك تأثير كبير للامتحانات الوطنية من حيث الطلاب المعرفي الاستعداد والامتحانات الوطنية القلق. ومع ذلك، فإن CBT الفحص الوطني و PBT لن يؤثر على استعداد المعرفي لمواجهة الامتحان الوطني، CBT و PBT تأثير الامتحانات الوطنية في الامتحانات الوطنية من حيث الامتحانات الوطنية القلق طالب. متوسط درجة القلق من الطلاب الذين يواجهون قلق الامتحان الوطني العالي CBT من الطلاب الذين يواجهون PBT الامتحان الوطني. ليس له آثار الناجمة عن الفرق من حيث الاستعداد المعرفي والقلق في مواجهة الامتحان الوطني باللغة الانكليزية؛ وليس هناك تفاعل بين أنواع مختلفة من الاختبارات والاختبارات الوطنية.

الكلمات الأساسية : CBT. PBT الاستعداد المعرفي القلق ، الامتحان الوطني

A. INTRODUCTION

As stated at Ministerial regulation number 20, 2003 that education is an effort to create an atmosphere of learning and the learning process consciously and deliberately as learners are actively developing the potential to have the spiritual power of religion, self-control, personality, intelligence, character, and skill needed by society, nation and state. The implementation of education is learning process

where the success of learning process measured from the implementation of learning objectives. According to Nitko (2011, p.20), the student's achievement of learning process implementation is specific goal. To know the result of learning process, Bichi & Moses (2015. P.290) mentioned that assessment takes an important role in the educational process and it is used as a tool in students' performance evaluation. Moreover, Ebbut & Straker (Marsigit, 2003, pp.5-6), clarify that the evaluation phase is the final stage of a learning process. Dealing with assessment, the government used national examination (UN) to determine the extent of competence achieved by students. As stated by Ministry of Education, national examination is the measurement and assessment of the national competency achievement in specific subjects. One of the subjects in the national examination in Senior High School is English. English national examination aims at measuring the ability of English from the first to the last year.

Based on the Permendikbud number 5 (2015, p.9), national examination in the academic year 2014/2015 on junior and senior high school are conducted in two types, namely Paper-Based Test (PBT) and/or Computer-Based Test (CBT). PBT national examination system is also called Pencil and Paper Test (PPT). It is because PBT needs pencils and papers in doing national examination. One of problem on PBT is paper distribution especially to remote areas in Indonesia. However, there are some advantages of PBT national examination system as students can perform the examination in an easy way because it allows students to do the examination without any special preparation. Bennett (2003, p.4), states that examination or lab tests with PBT systems for certain classes generate learning outcomes higher than to other systems, especially in English examination. In addition, the infrastructure used in PBT is simpler because its implementation does not require a lot of devices for preparation and costs for the development of facilities and infrastructure. AlAmri (2007, p.107), states that PBT national examination system is more convenient, comfortable, and already accustomed.

Recently, the government adopted CBT as the latest national examination systems. The use of CBT national examination for schools in Indonesia started in 2014/2015. In the early stage, the CBT national examination system in Cilacap Regency and followed by 8 schools included senior and vocational schools. In 2015/2016, the number of schools implementing CBT national examination was increase 14 high schools. CBT system, according to Anies Baswedan, needs three sessions with only one subject a day so the result are maintained. In addition, Temitayo, Adebisi, & Alice (2013, p.336), added that CBT is suitable way for school which has many students in evaluation or educational assessment. In

contrast, Thurlow, Lazarus, Albus, et al. (2010, pp.22-28) state that it is possible if the lack of computers and supporting infrastructure will cause anxiety among students since they are not accustomed to use it. Although, CBT national exam system is done in three sessions in a day, the third sessions will be done in the afternoon at 2:00- 4:00 p.m. as the result, the implementation CBT national examination system is longer than the PBT national examination system which can accommodate two subjects in one day.

Beside considering the students' anxiety aspect, the students' readiness is also important aspect. The national examination is conducted in every year and it demands the readiness of both students and schools. Readiness is important especially for students in class XII. It is because students will face national examination. Based on the results of a research conducted by Rumasoreng & Sugiman (2014, p.27), 58.95% of students in DIY give wrong answer in English national examination. It shows that readiness is very needed to face English national examination. Schools which implement CBT national examination also should prepare a sufficient number of computers or the number of the examinees, the internet network, the bandwidth capacity of at least 1 Mbps, Uninterruptable Power Supply (UPS), and two technicians. So, it takes more and longer preparation.

English national examination in senior high school level is obligated to all majors chosen by students. The majors are natural science, social science, and language major. However, in general, most of senior high school offers social and science major. Burns (2004, p.119), state that the success of the exam is influenced by students' activities during preparations and their knowledge. Therefore, the students hope that the result will be in line with their knowledge and readiness. According to Harjanto, (2000, p.24) readiness is defined as a willingness to determine what type of actions as a result of it being received. Moreover, Hamalik (2005, P.39), states that readiness is a result of training or learning and maturity. The results of students' learning or maturity in national examination can be seen from students' cognitive readiness. Consequently, to know the students' cognitive readiness level, the school implemented test which is called "try out" of national examination.

According to Mardapi (2012: pp.6-7), national examination has both positive and negative effects. One of the negative impacts is teachers and students' anxiety. Although anxiety in certain limits is needed to motivate students to learn better, too high level of anxiety can lead students to become stressful. Woolfolk, Anita, and Loraine (1984, p.301), supported that test or examination are situation in

schools which mostly cause students' high level of anxiety. It is because the result of a national examination is considered to be an important factor to determine the next level of education that will be faced by students. In reality, some students still feel anxiety although the process of improving students' cognitive readiness has been done.

Each student faced different level of anxiety from one to another. As stated by Dobson (2012, p.4), different students will have a different anxiety response to face a situation. In addition, Woolfolk, Anita, and Loraine (1984, p.298), students' anxiety is the result of unsuccessful tasks. Students' anxiety in facing a national examination also can be caused by their high expectations of the national examinations result.

As mentioned in the background, this paper is intended to investigate the effects of CBT national examination system to students' cognitive readiness and anxiety in facing English national examination in Cilacap Regency. The study is purposed to determine the influences of the CBT and PBT national examination systems for students' cognitive readiness and anxiety in facing English national examination in Cilacap Regency, to determine the effects of taking major in natural and social science for cognitive readiness and anxiety in facing English national examination in Cilacap Regency, and to investigate the relations between national examination systems and the majors taken.

B. METHODS

This research is done in descriptive exploratory study with an ex-post facto method. The research was conducted to grade XII students in the academic year of 2016/2017 in 2 schools that implemented the PBT national examination system and 2 schools that employed the CBT national examination system in Cilacap regency. The study started on March 19th, 2017 until May 10th, 2017.

1. Population and Sample

The population in this study was all students of class XII from high schools in Cilacap in the academic year of 2016/2017. The school was determined by selecting state or private school which has huge number of students. The number of schools selected implementing CBT national

examination were the same with schools implementing PBT national examination. There were 783 populations. Based on Krejcie and Morgan's table, the number of minimum sample will be 176 students. This study used 352 students as samples.

2. Research Variables

The variables in this study consist of independent variables that is government policy on the CBT and PBT national examination system, and high school students who take natural and social science major. The dependent variables of this study consist of students' cognitive readiness and anxiety in facing English national examination in Cilacap Regency.

3. Instruments and Data Collection Techniques

The study was done before the national examination was held. The students were asked to do multiple choice test instruments to measure their English cognitive readiness. The test had been adapted by indicators of English national examination in 2016/2017. Supporting the data from the test result, the samples were also given a questionnaire to measure students' anxiety in facing English national exams using either CBT or PBT system. Time allocation was 120 minutes. The next step in this research was analyzing data from the results of students' cognitive readiness and anxiety test statistically. It was to determine effects of CBT national examination system for students' cognitive readiness and anxiety in facing English national examination in Cilacap regency.

4. Validity and Reliability Instruments

This study used content and construct validity. Content validity was used to prove the validity of test instruments. It was suited with indicators of English national examination in 2016/2017. Content validity was also used to prove the validity of the anxiety questionnaire. Construct validity was used to prove the validity of the questionnaires. Construct validity used

factor analysis. Results of construct validity for the anxiety questionnaire instrument shows that KMO's value is 0.620. It is more than 0.5 which means that samples used in the study are sufficient. In addition, from the analysis, it is shown that there are 9 factors obtained from the total factors. The number represents 59.14% of the variables. The construct validity result of the anxiety in facing PBT national examination system questionnaire is 0.640. It is more than 0.5 which means that the number of samples used in the study is sufficient. In addition, from the analysis, it is shown that there are 9 factors obtained from the total factors. The number represents 65.44% of the variables. Estimated reliability of the cognitive readiness instrument used was KR-20. It is because the instrument used multiple choice formats. Estimated reliability of students' anxiety used was internal consistency reliability shown by Cronbach alpha coefficient. The reliability test estimation result of cognitive readiness in natural science major was calculated using the KR-20. It is 0.681 and the SEM score is 1.453. The reliability test estimation result of cognitive readiness in social science major was also calculated using the KR20. It is 0.803 and the SEM score is 2.82. The results of the analysis of the anxiety reliability estimation in facing examination using CBT questionnaire is 0.724 to 5.79 in SEM values. The reliability estimation results of the anxiety in facing PBT national examination questionnaire is 0,880 and the SEM score is 5.78

5. Data Analysis Techniques

A descriptive analysis was conducted to obtain data descriptions of students' cognitive readiness and anxiety in facing CBT and PBT national examination. Descriptive analysis was presented in the average, median, mode, standard deviation, and the maximum and minimum score of each data. The next analysis was equalization. The purpose of this analysis is to produce scores that are interchangeable (Retnawati, 2014, p.93). It used horizontal equalization with equivalent group design. Equalization method

was based on the classical theory using *equipercentile* method. Percentile metric scores on two tests were matched according to the same percentile (Dragon, 1992, p.358).

The analysis was followed by hypothesis testing. Hypothesis testing was done by using two-ways MANOVA. However, before the hypothesis test, there were previous assumption tests of normality and homogeneity. Prerequisite test was used to test the normality of the data by looking at the samples. Multivariate normality test used Mahalanobis distance test.

$$d_j^2 = (x_j - \bar{x})' S^{-1}(x_j - \bar{x})$$

d_j^2 : Mahalonobis distance

x_j : jth-data, j = 1,2, ..., n

$\bar{x}$: Average of data

S^{-1} : Inverse matrix of covariates

A decision criterion is if the correlation coefficient is more than r table or sig. less than 0.5., it means that there is a significant correlation or normal distribution of data.

The second assumption used was homogeneity test. Homogeneity test aims to determine the variety of the population. It is shown by looking at the matrix covariance of cognitive readiness and anxiety in facing CBT and PBT national examination scores. Multivariate homogeneity test used was Box's M test. A decision criterion is if the significant value is more than 0.05 then the data is homogeneous.

Hypothesis testing used was two-ways MANOVA analysis. The first hypothesis test was to determine implementation effects of CBT and PBT national examination system for students' cognitive readiness and anxiety in facing English national examination in Cilacap Regency. Hypothesis:

$$H_0: \begin{pmatrix} \mu_{11} \\ \mu_{21} \end{pmatrix} = \begin{pmatrix} \mu_{12} \\ \mu_{22} \end{pmatrix}$$

(There was no influence of national examination system (CBT and PBT) for students' cognitive readiness and anxiety in facing English national examination in Cilacap Regency).

$$H_1: \begin{pmatrix} \mu_{11} \\ \mu_{21} \end{pmatrix} \neq \begin{pmatrix} \mu_{12} \\ \mu_{22} \end{pmatrix}$$

(There was influence of national examination system (CBT and PBT) for students' cognitive readiness and anxiety in facing English national examination in Cilacap Regency).

The second hypothesis was to determine influences of the majors (natural and social science) for students' cognitive readiness and anxiety in facing English national examination in Cilacap Regency. Hypothesis:

$$H_0: \begin{pmatrix} \mu_{11} \\ \mu_{12} \end{pmatrix} = \begin{pmatrix} \mu_{21} \\ \mu_{22} \end{pmatrix}$$

(There was no effect of majors on the students' cognitive readiness and anxiety facing English national examination in Cilacap Regency)

$$H_1: \begin{pmatrix} \mu_{11} \\ \mu_{12} \end{pmatrix} \neq \begin{pmatrix} \mu_{21} \\ \mu_{22} \end{pmatrix}$$

(There was effect of majors on the students' cognitive readiness and anxiety facing English national examination in Cilacap Regency).

The third hypothesis test was to determine relations between the national examination system and majors. Hypothesis:

$$H_0: \mu_{11} - \mu_{21} - \mu_{12} + \mu_{22} = 0$$

(There were no interaction between national examination system and majors).

$$H_1: \mu_{11} - \mu_{21} - \mu_{12} + \mu_{22} \neq 0$$

(There were no interaction between national examination system and majors).

μ_{11}: An average score of students who did the CBT national examination system on natural science major.

μ_{21}: Students' average score of students who did the CBT national examination system on social science major.

μ_{12}: Students' average score of students who did the PBT national examination system on natural science major.

μ_{22}: Students' average score of students who did the PBT national examination system on social science major.

If the hypothesis test showed that there is an influence of the national examination system for students' cognitive readiness and anxiety in facing English national examination in Cilacap Regency, it is continued by looking at tables Test of Between-Subject Effects to determine the differences between variables.

C. RESULTS AND DISCUSSIONS

The data description of cognitive readiness of students facing CBT national examination is presented in Table 1.

Table 1. Description of Students' Cognitive Readiness in Facing CBT National Examination

	Natural science	Social science	Total
Number of Students	186	166	352
Average	21,467	20,717	20,284
Median	19	19	19
Modus	15	19	19
Standard Deviation	6,174	5,809	6,064
Maximum score	35	33	35
Minimum score	10	10	10

Table 1 shows that the students' cognitive readiness in facing CBT national examination. Natural science students' average score of cognitive readiness is lower (20.467) than social science students (20.717), while the overall average score is 20.284. Both natural and social science students have the same median score which is 19. The mode score of natural science students is lower than social science students'. The natural science students' mode score is 15 and the social science students' is 19. It is the same mode score overall. Standard deviation scores of natural science students is higher (6.174) that social science (5.809). Both groups have the same minimum score that is 10 but they have different maximum score. Natural science students have 35 as the maximum score while the maximum score of social science is 32. Actually, the overall maximum score is 35 It implies that the range scores of cognitive readiness in facing CBT national examination is 10-35 and overall score range is 0-40. Table 3. Description of Students' Cognitive Readiness in

Facing PBT National Examination. The data description of students' anxiety in facing English national examination is presented in Table 2.

Table 2. Description of Students' Cognitive Readiness in Facing PBT National Examination.

	Natural science	Social science	Total
Number of Students	186	166	352
Average	22,567	19,817	20,834
Median	20	22	20
Modus	25	19	25
Standard Deviation	5,748	4,096	5,644
Maximum score	35	32	35
Minimum score	10	10	10

Table 2 shows that the study conducted to 186 students majoring natural science and 166 sudents majoring social science. Natural science students' average score of cognitive readiness is lower (22.567) than social science students (19.817), while the overall average score is 20.83. Median score of students majoring natural science is same with overall median score that is 20. But it is lower than students majoring social science median score that is 21. However, the students majoring natural science mode scores that is same as the overall mode score 25 is higher than students majorng social science mode score that is 19. Students majoring natural science standard deviation score is also higher than social science. Although the students majoring natural science have higher maximum score (35) than social science

(32), but the minimum score of the two majors are same that was 10. It implies that the range score of cognitive readiness in facing PBT national examination is same with the range scores of cognitive readiness in facing CBT national examination that was 10-35.

Table 3. Description of Students' Anxiety in Facing CBT National Examination.

	Natural science	Social science	Total
Number of Students	186	166	352
Average	88,75	86,43	87,64
Median	89	85	88
Modus	87 and 88	84	87
Standard Deviation	14,46	14,90	14,68
Maximum score	120	118	120
Minimum score	50	50	50

Table 3 shows that the study conducted to 186 students majoring natural science and 166 students majoring social science facing CBT national examination. Natural science students' average score of anxiety is higher (88,75) than social science students (86,43). It states that natural science students feel more anxious than the other group. Natural science students' median score of anxiety is also higher (89) than social science (85). It is also higher than the overall median score. Natural science students' mode score of anxiety facing CBT national examination is also higher at 87 and 88 than

social at 83. Standard deviation score of natural science students is 14,46 and social science is 14,90.

Maximum and minimum anxiety score of natural science student is also higher than social science, maximum is 120 and minimum is 48, than social science that has maximum score is 118 and minimum score is 50. It implies that the overall range anxiety scores facing CBT national examination is 45-118.

Table 4. The data description of students' anxiety in facing PBT English national examination.

	Natural science	Social science	Total
Number of Students	186	166	352
Average	82,75	78,35	81,89
Median	84	81	82,5
Modus	85	85	85
Standard Deviation	12,46	11,85	13,83
Maximum score	115	108	115
Minimum score	40	50	40

Table 4 shows that the study conducted to 186 students majoring natural science and 166 students majoring social science facing PBT national examination. Natural science students' average score of anxiety facing national exami- nation is higher (82.75) than social science students that students'

average scores is 78.35. While the overall average score is 81,89. Natural science students' median score is also higher at 83 then social sciences that are 84. Overall median score is 82,5. Natural science, social science, and overall mode score is same that is 85. The standard deviation of natural science students is higher (12,46) than social science that is11,85. Maximum score of natu- ral science students (115) is higher than social science (108). Meanwhile, minimum score of natural science student facing PBT national examination is lower (40) than social science students (50). It implies that overall range anxiety scores facing PBT national examination is 40-118.

The anxiety criteria of each student in facing national examination are different. Students' anxiety criteria in facing CBT and PBT national examination systems are categorized in Table 5.

Table 5. Categorization of Students' Anxiety

Category	Criteria
$120 < X \leq 150$	Very high
$100 < X \leq 120$	High
$80 < X \leq 100$	Moderate
$60 < X \leq 80$	Low
$30 < X \leq 60$	Very low

Based on a range of anxiety criteria in Table 5, it explains that the average score of natural science students' anxiety in facing CBT national examination is 88,75 while the average score of social science students' anxiety is 86,43. The both of them categorized into moderate. Overall, the average score of students' anxiety in facing CBT national examination (87,64) is categorized into a moderate criterion. The average score of natural science students' anxiety in facing PBT national examination system (82,75) is categorized into a moderate criterion. The average score of social science (78, 35) is categorized into a low criterion.

However, overall average scores of students' anxiety in facing PBT national examination system (81,89) are categorized into a moderate criterion.

The result shows that the highest students' anxiety facing CBT national examination belongs to natural science students while the lowest belongs to social science students. In addition, it demonstrates that the average score of students' anxiety in facing CBT national examination is higher than those facing PBT. The hypothesis analysis was further examined by using two-ways Manova. Previously, prerequisite tests consisting of normality and homogeneity tests must be done. The normality test is used to determine whether the data obtained is a normal distribution or not. Mahalanobis distance analysis used SPSS application. It used a correlation between Mahalanobis distance and $\chi_p^2 \left(\frac{j-0,5}{n} \right)$ value. It is presented in Table 6

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Sample group	Sign.	Correlation	r_{table}	Result
CBT	0,000	0,993	0,1519	normal
PBT	0,000	0,982	0,1488	normal

According to Table 6, it is shown that the normality test conducted to a sample group of students implementing the CBT national examination has 0.00 significance values. It is less than 0.05 so that there is a significant correlation. In other word, the data have a multivariate normal distribution. Moreover, the correlation value 0.993 which is higher than r-table = 0.1519 states that data is normal. Students implementing PBT national examination has normality test score 0.000 which is less than 0.05. It shows that there is a significant correlation or the data have a multivariate normal distribution.

The prerequisite test aims to determine the homogeneity of variance of the population. Based on the multivariate calculation, it is known that the significance level is 0.051 or higher than 0.05. It means that the data is homogeneous. In other

word, the covariance matrix score of students facing CBT national examination system is the same with students facing PBT national examination system.

The first hypothesis test is to answer the problem formulation whether the CBT and PBT national examination system significantly influence students' cognitive readiness and anxiety in facing English national examination in Cilacap Regency. Based on the analysis, the significance value is 0,001. It is less than 0.05 so that H0 was rejected. It means that there is a significant influence of national examination systems on the students' cognitive readiness and anxiety.

The second hypothesis test is to answer the problem whether the majors taken affect students' cognitive readiness and anxiety in facing English national examination. Manova test results show 0.691 significance value, higher than 0.05 so that H0 was accepted. It states that there is no influence caused by different majors for students' cognitive readiness and anxiety. Some natural or social science students faced CBT national examination and others faced PBT national examination system. There is no significant difference in anxiety level among them. Moreover, sense of inadequacy was also felt by students in both majors. Each of the students had personal goals that must be achieved on the national examination. It triggered students' anxiety that appeared on each student's self.

The third hypothesis test is used to answer the problem formulation whether there are relations between the national examination systems and the majors. The score earned from multivariate analysis is 0.914. It is more than 0.05 so that H0 is accepted. It means that there is no relation between national examination systems and majors. In natural and social science major, there were different English materials. Besides, the majors got the same treatment from school to improve student's cognitive readiness. National examination indicators were different between both of majors.

Consequently, each student from both majors tried to get the best results in English national examination. In other words, the difference of national examination system did not influence if it was given to natural or social science students. It is because both national examination and the majors are different.

Based on the first hypothesis analysis, there are significant influences of national examination system for students' cognitive readiness and anxiety in facing English national examination. The next step used Table Test of Between-Subject Effects of two-ways Manova analysis.

The result states that significant value of students' cognitive readiness is 0.590. It was more than 0.05. It means that the national examination systems have no influence on students' cognitive readiness. It is because of all students who both types of national examination systems should prepare their cognitive readiness in facing national examination using the same indicators. The schools with both national examination systems provided more exercises and students understood about the subjects in national examination. This analysis is also supported by Retnawati (2015, p.135) that in general CBT and PBT are relatively similar in terms of the measurement of the ability of TOEP. In addition, these result are also consistent with the result of Piaw research (Piaw, 2012, p. 655) that the scores of pre-test and posttest on biology lesson are consistent between Paper-Based Testing and Computer-Based Testing. Furthermore, the results of Table Test of Between-Subject Effects are used to determine whether national examination systems influence students' anxiety in facing national examination. The analysis shows 0.00 as significant value which is less than 0.05 so that H0 is rejected. It means that there are significant influences of national examination systems for students' anxiety in facing national examination. Students' anxiety will increase when students should face new kind of national test examination systems such as CBT.

The new thing for students will give effects to their anxiety. Some students who are already accustomed to using computers will have lower anxiety in facing CBT national examination than those who are not familiar with computers in daily life. Besides, the anxiety level of students who did the PBT national examination system also increase. It is because of fear or worry about the results of national examination. It is in line with Wolfolk, Anita, and Loraine's theory (1984, p.298) that students who are not able to complete a task is often filled with anxiety. This finding supports Taylor's theory (Leonard & Supardi U.S., 2010, p. 342) that

anxiety is the effect of the inability of the individual in dealing with problems. However, anxiety of the students can be minimalized with the roles of the teacher. Dobson (2012, p.5) states that if the teacher is able to recognize the signs of students' anxiety, it will assist students in overcoming their anxiety.

Teachers should understand different methods in overcoming students' anxiety. The next analysis was independent sample t-test. It was done if national examination influences students' anxiety. This analysis aims to determine the differences of anxiety average score between students facing CBT and PBT national examination. Based on the analysis, the tvalue obtained is 4.47. It is more than ttable = 1.963. It means that the average score of the students' anxiety in facing CBT national examination is not equal to the average score of the students' anxiety in facing PBT national examination. Based on students' anxiety average score, it proves that the average score of students who did CBT national examination is higher (85.371) than another (80.833). It means that the anxiety level of students who did the CBT national examination is higher and significantly different compared to another.

The next data analysis was to know the correlation between students' cognitive readiness and anxiety in facing national examination. Based on the analysis, the significance value is 0.016. It is less than 0.05, which means that there is a significant relation between students' cognitive readiness and anxiety. The value correlation is -0.94. It means that there is a very strong relation between the students' cognitive readiness and anxiety in facing national examination and vice-versa. If the students' anxiety level is high then the students get low cognitive readiness, and vice-versa. Agustiar & Asmi (2010, p. 13) clarify that the students who have high anxiety also tend to worry, anxious, and difficult to concentrate when they face a threatening situation as well as the national examination. Students who have low anxiety tend to be aware of situations such as national examination so that they can anticipate the situation.

Dobson (2012, p.26) states that students who have more time preparing the examination will have lower anxiety than others. The last data analysis was to

make an equalization data of students' anxiety in facing national examination systems. It was done because the measurement of students' anxiety was done by different instruments although the indicators were the same. The result aims to produce a score that can replace each other if only one of anxiety test instruments used. Graph 1 shows Middle Percentile Ranking result of students' anxiety scores in facing national examination systems.
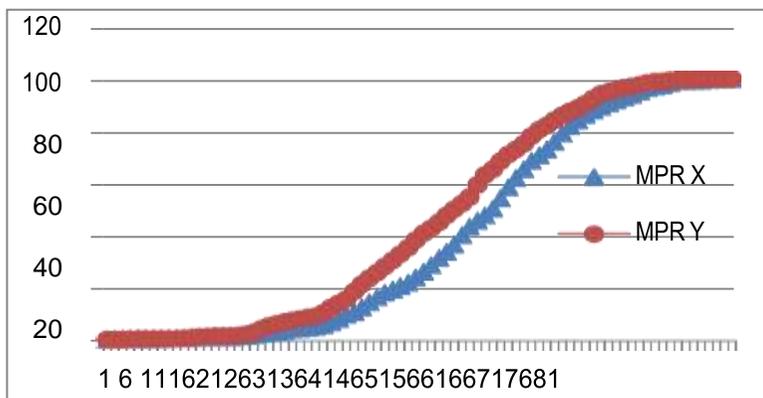
Graph 1. Graph of Middle Percentile Ranking result of students' anxiety scores in facing national examination systems. MPR X: Middle Percentile Ranking (MPR) of students' anxiety scores in facing CBT national examination. MPR Y: Middle Percentile Ranking (MPR) of students' anxiety scores in facing PBT national examination. Graph 1 shows that at a certain percentile, anxiety instruments in facing CBT national examination give students higher anxiety scores than anxiety instruments in facing PBT national examination.

The next step was converting scores of students' anxiety in facing English PBT national examination to students' anxiety score in facing CBT national examination. Converted score is range scores that exist in the both data of students' anxiety in facing CBT and PBT national examination systems.

D. CONCLUSIONS

Based on the results of the discussion, it can be concluded that there are significant influences of CBT and PBT CBT and PBT national examination system for students' cognitive readiness and anxiety in facing English national

examination. However, the national examination system has no effect for students' cognitive readiness. It only influences students' anxiety in English national examination. In addition, the average scores of the students' anxiety in facing CBT national examination systems are different from those who do PBT national examination system. The majors taken have no influence for students' cognitive readiness and anxiety in facing English national examination. There is no interaction between the national examination system and the majors. Based on these results, further research is expected to expand the coverage area and add a dependent variable in order to get an overview of the results of a broader research and include more aspect.

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