## A THESIS

ANALYZING THE QUALITY OF FINAL TEST FOR SENIOR HIGH SCHOOL AT THE SECOND GRADE SMA NEGERI 3 PAREPARE (ITEM ANALYSIS)


ENGLISH EDUCATION PROGRAM
TARBIYAH FACULTY
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PAREPARE

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FIRMAN AHMAD FAIZAL
Reg Num. 16.1300.092

Submitted to the English Education Program of Tarbiyah Faculty of State Islamic Institute of Parepare in Partial of Fulfilment of the Requirements for the Degree of Sarjana Pendidikan (S.Pd.)

# ENGLISH EDUCATION PROGRAM <br> TARBIYAH FACULTY <br> STATE ISLAMIC INSTITUTE (IAIN) <br> PAREPARE 

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As a Part of Fulfilment of the Requirement for the Degree of Sarjana Pendidikan (S.Pd.)

English Education Program

Submitted by

Firman Ahmad Faizal Reg Num. 16.1300.092
to

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## ENDORSEMENT OF CONSULTANT COMMISION



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Parepare, March $25^{\text {th }} 2021$
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## DECLARATION OF THE RESEARCH AUTHENTICITY

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State that this skripsi is his own writing and if can be proved that it was copied, duplicated or complied byany other people, this skripsi an the degree that has been gotten would be postponed.



#### Abstract

Firman Ahmad Faizal. Analyzing the Quality of Final Test for Senior High School at the Second grade SMA Negeri 3 Parepare.(Supervised by Dr. Abd. Haris Sunubi, M.Pd. and Mujahidah, M.Pd.).

This research is about item analysis of the quality of final test related to the difficulty level, discrimination, the effectiveness of distractor, validity and reliability of the final test for senior high school at the second grade SMA Negeri 3 Parepare. The research question of this research is how is the difficulty level, the discrimination, the effectiveness of distractor, validity and reliability of final test for senior high school at the second grade SMA Negeri 3 Parepare. This research aims to find out the difficulty level, discrimination, the effectiveness of distractor, validity and reliability of the final test for senior high school at the second grade SMA Negeri 3 Parepare.

The researcher applied the quantitative descriptive method which the data was obtained from the final test for IPA and IPS class. The subject of this research was final test designed to test the students who were registered as the second grade student of IPA and IPS class in the academic year 2020/2021 at SMA Negeri 3 Parepare. The test was tried out to the students and the the researcher analyzed the difficulty level, discrimination, the effectiveness of distractor, validity and reliability of each item of the test.

Based on the whole analysis of the 30 test items, it can be conclude that the difficulty (p) level of the final test for senior high school at the second grade SMA Negeri 3 Parepare at the medium level, the test was not to easy or not too difficult. On the discrimination (D) there were $6(20 \%)$ items have excellent classification, 1 ( $3,33 \%$ ) item satisfactory and 23 ( $76,6 \%$ ) items have good classification. The effectiness of distractor are also poor, as $12(40 \%)$ items have very poor distractors because they have score under $5 \%$ and need to be replaced. On the validity 9 (30\%) items were invalid and need to be replaced. However, 21 (70\%) items were valid. The final test for senior high school at the second grade SMA Negeri 3 Parepare is reliable since the reliability index 0,972 , it was higher than the table value of critical of product moment it has shows that the final test was reliable.


Keywords: UAS, English Test, Quality of Test.

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## CHAPTER I

## INTRODUCTION

## A. Background

The test is the most important part of the learning process. The objective of the learning process can be obtained or achieved when students pass the test and have standards scores that have been established by the teachers. Otherwise, the remedial test will be the next test or their ticket for students to stepping forward into the next learning activities if they cannot pass the test with a standard score.

When students cannot pass the test the most teachers think that students' abilities are decreasing without concern for the quality standard in designing a test. They only do their obligation in designing the test. Actually, by giving a test teacher can obtain about students' achievement being measured. However, the accuracy of the information can only obtain by the precision of the measurements it's means of a god test. ${ }^{1}$ Based on information obtained informally on February, 13th 2020 by interviewing some teachers who are conduct teaching at school in Parepare, they simply design, create, and check the final test without analyzing the test.

Related to the when the researcher does PPL in one of the schools in Parepare, he found that some teachers sharing each other for the item of test through short message service or Whatsapp. They made $50 \%$ for the third grade in senior high school, $30 \%$ for the second grade, and $20 \%$ for the first grade but sometimes they don't make it on their own, they ask another teacher for the item of the test. They also excuse why they don't make and design test with their own; a) because too many
${ }^{1}$ Indar, "Analyzing the Reability and Validity of Reading Test at the First Grade SMA N 1 Pattalassang" (Publish Thesis: State Islam University Alauddin: Makassar, 2016), p. 1.
class and teaching hours, b) some teachers teach more than one school, c) they tired after doing many activities at school.

According to the researcher's interview, several problems affecting the weaknesses of the test made by the teacher. Some of them are better on time, teacher's energy, and cost. However, the main factor of the failure is the teacher's own opportunity to do a trial run for the test or tested the test to measure and analyzed the item of the test.

Also because the test is made by the teacher, so they only use it for private, it is meant only for their students and not for the public that's the reason they often don't test the test. Because they don't test the test so the teacher tests are not equipped with information about the quality of the items, validity, and reliability of the items. ${ }^{2}$

Research on the final test result so far has only been conducted regarding the final result in the form of NEM and suspicion about the item of test it's started in Budi Harso's research about the validity and reliability of English tests for senior high school, Riandy's research about the item analysis of English final test for junior high school and Sumaningsih's research about the quality of English final test for junior high school. ${ }^{3}$ The three studies show that the items of each question and the items as a whole in the English final test are indeed low. We can imagine that not only because of the decreasing ability of students but also the quality of English final tests made by the teacher can be a consideration and included in the factor that causes student scores to decline. Therefore, the researcher is inspired to know about the quality of English teacher final test for senior high school in Parepare.

[^0]This research will be conducted in SMA Negeri 3 Parepare which focused on the second-grade students in the academic year 2020-2021. This school is one of the best senior high schools in Parepare, it also a school that is noted to be fast using curriculum 2013 or K-13 as their standard competence for teaching and learning since 2013. It proves that the school is quick to adapt to new changes, especially the new curriculum and which means students can learn well even with the new curriculum.

Based on all of the explanations above, the researcher is interested in research to know about "Analyzing The Quality Of Final Test For Senior High School At The Second Grade SMA Negeri 3 Parepare (Item Analysis)' ${ }^{\text {. }}$.

## B. Research Question

Based on the previous background above, the researcher formulates the problem statement of the research as follow :

1. How is the difficulties level of final test items for senior high school in SMA Negeri 3 Parepare?
2. How is the discrimination of final test items for senior high school in SMA Negeri 3 Parepare?
3. How is the effectiveness of the distractor of final test items for senior high school in SMA Negeri 3 Parepare?
4. How is the validity of final test items for senior high school in SMA Negeri 3

## Parepare?

5. How is the reliability of final test items for senior high school in SMA Negeri 3 Parepare?

## C. Objective of the Research

Based on research problem statement above, the aim of the research as the following:

1. To find the difficulty level of final test items for senior high school in SMA Negeri 3 Parepare.
2. To find the discrimination of final test items for senior high school in SMA Negeri 3 Parepare.
3. To find the effectiveness of the distractor of final test items for senior high school in SMA Negeri 3 Parepare.
4. To find the validity of final test items for senior high school in SMA Negeri 3 Parepare.
5. To find how is the reliability of final test items for senior high school in SMA Negeri 3 Parepare.

## D. The Significance of the Research

This research is expected to be beneficial for students, teachers, schools, and other future researchers. First, students can receive accurate information about their competence through measuring which has a good kind of test that they obtain as a result of this research. Second, for the teacher, they could find out the level of a good test item especially for difficulty level, discrimination, the effectiveness of distractor, validity, and reliability of the test that they have made and design. Third, for school, by this research, the school will know their teacher's ability in designing tests and use test truly measure what should be measured. Fourth, for other researchers, the result of this research will help them in finding references for further research.

## CHAPTER II

## REVIEW OF RELATED LITERATURE

## A. Some Previous Research Findings

In contrast to this research, the researcher is considering some previous research finding to support the research proposal. Those research are as follows:

1. Indar in her research about "Analyzing the Reliability and Validity of Reading Test at the First Grade SMAN 1 Pattalassang". She concludes that to construct an ideal test, the teachers should master the knowledge of language testing and make time for constructing the test items, she also found the item of the test was not valid and the kind of test which was not reliable and should be revised or even removed. As the difference, Indar focuses only on the validity and reliability of tests while this research not just focuses on validity and reliability but also focuses on difficulty level, discrimination, and effectiveness of distractor.
2. Muspira Humairah in her research about "Item Analysis of English Summative Test for Second Grade Student of MAN 1 Tanete Bulukumba". She concludes that the teacher should analyze the test before applying the test to the students. Furthermore review and try out each item of the test is important to get a valid and reliable test, she also found that there were six items of the test is valid and four items of the test are not valid or invalid.

Also on test items used in second-grade students of MAN 1 Tanete Blukumba was reliable because the reliability index was 1.98 which was
higher than the table of the critical value of product-moment with a level significance of $95 \%$.

The difficulty of the test used on second-grade students of MAN 1 Tanete Blukumba showed there were four medium items, four easy items, one too easy item, and one difficult item but there is no discrimination level in her research, for the difference in this research the researcher focuses about the discrimination level each item of the test.
3. Sumaningsih reported her research finding on the "The Quality of English Final Test Item for MTs in Samarinda". In her research she found, analysis of the Quality of English Final Test Item for Mts in Samarinda showed not good result difficulty level of the test is in low and medium items, discrimination level of the test under $(0,50)$, distractor of the test was not good and too weak, and from 45 items only 5 items can be used and the other items should be revised and removed.

In addition, she points out that the information about the quality of test items is important because it will be effective to make further necessary changes to the weak tests, to adapt them for future use, or to create good tests. A good test is a test that meets the main requirements, namely; valid, reliable, and practical. A good test is a basic requirement in knowing the results of language learning because through a test teacher can get information about the accuracy of identification in test objectives, the suitability of teaching materials, the effectiveness of teaching method, is enough practice given, and student learning difficulties, it can all obtain if a test has a good characteristic.

As the conclusion of the third previous research findings that teacher English final test still need more attention, furthermore analyzing and do try out to the test before applying for students is important cause information about the quality of each item of the test will be effective to make a good test in the future and comprehend the teacher how to design a good test. Then, the previous research findings above have a very close relationship with this research which is the same as wanting to see an ideal test for the student.

## B. Some Pertinent Ideas

In this part, some pertinent ideas that explain basic concepts about the key issues of the research.

## 1. Concept of Item Analysis

a. The Definition of Item Analysis

Item Analysis is the process of gathering information about the quality of each test item that will be tested. ${ }^{4}$ Item analysis also the quality estimation of each item of a test tool to examine or to try the effectiveness of each item. Item analysis is coherence analysis between scores of each item with the whole scores, compares the students' answer to the whole test.

Furthermore, The qualities are validity and reliability. If the researcher's interpretations of data are valuable, the measuring instruments use to collect those data must be both valid and reliable. ${ }^{5}$ Therefore after designing a test, the teachers should execute item analysis to classify and to determine whether the item is valid and reliable or not.
${ }^{4}$ Nurgiyanto, Penelitian Pembelajaran Bahasa; Berbasis Kompetensi (Yogyakarta: BPFE-Yogyakarta, 2010), h. 190.
${ }^{5}$ Gay, at all, Educational Research; Competencies for Analysis and Application (USA: Charles E. Merril Publishing Company, 1981) $2^{\text {nd }} e d$, h. 134.

Besides an item analysis also a systematic procedure by which the teacher can get some information about the quality of the test item. Meanwhile, Madsen state that the selection of appropriate language item is not enough by itself to ensure a good test. Each question needs to function properly. ${ }^{6}$ Otherwise, it can weaken the exam. Fortunately, there are some rather simple statistical ways of checking an individual's items. The third procedure is called "item analysis". It is most often use with multiple-choice questions.

An item analysis tells us three things: how difficult each item is, whether or not the question "discriminates" tells the difference between high and low students, and which dictators are working as they should. An analysis like this is used with any important exam-for example, review tests and tests are given at the end of the school term of course. To prepare for the item analysis, first, score all of the tests. Then arrange them in order from the one with the highest score to the one with the lowest. Next, divide the papers into three equal groups: Those with the highest scores in one stack and the lowest in another. (The classical procedure is to choose the top $27 \%$ and the bottom $27 \%$ of the papers for analysis. But since language classes are usually fairly small, dividing the papers into thirds gives us essentially the same result and allows us to use a few more papers in the analysis).

Also, being on the right level and converting material that has been discussed in class, good tests are valid and reliable. A valid test is one that produces essentially the same result consistently on different occasions when the condition of the test remains the same. ${ }^{7}$

[^1]Therefore, item analysis relates to the several items of statistical analysis in analyzing the characteristics and features of a test. They consist of validity, reliability, level of difficulty, discrimination, and effectiveness of distractor.

## 2. Concept of Validity

## a. The Definition of Validity

Validity is the degree to which a test measures what it is supposed to measure and, consequently, permits appropriate interpretation of scores. Caldwell states that "valid test measures and accurately reflects what was designed to measure. Validity is related to knowing the exact purpose of an assessment and designing an instrument that meets that purpose". ${ }^{8}$ Also, validity is the most important characteristic a test or measuring instrument can process". Validity is the degree to which a test measures what is suppose to measure and consequently permits appropriate interpretation of scores. ${ }^{9}$

Based on the experts' definition, the researcher concludes that validity is a benchmark of an instrument (test) that involves the correlation of test score and validity of the test as being one of minimizing invalidity and be the important thing to make a good test and therefore using measurement validity as a matter of degree than the pursuit of perfection.
b. Types of Validity

As state previously that validation is the collecting evidence to show the scientific basis of score interpretation as planned. Three validation approaches use

[^2]generally, namely (1) Content-Related Evidence that has a procedure to compare the test items with the description of test specification it means to know how far the test sample represents the competency of measure domain. (2) Criterion Related Evidence that has a procedure to compare the score of test result with the next performance score or with performance score now, it means that want to know how far the test performance can predict the next performance or can estimate another performance which is doing now. (3) Criterion-Related Evidence that has procedure deciding the meaning of test score by controlling or testing test developing and experimentally determining some factors that are affecting test performance, it means that want to know how good test performance can be interpreted as a meaningful measurement of a characteristic or quality.

Also, there are many kinds of validity apart from the explanation above as stated by Anderson that there are three kinds of validity namely content validity, construct validity, concurrent validity, and face validity. ${ }^{10}$

## 1) Content Validity

Content validity is a test whose test items appropriate to the material and instruction which is given in the teaching-learning process. However, according to Hopkin, the definition of content validity itself is the level of representativeness sample of the content universe and/or behavior of the domain which is measured in the test. ${ }^{11}$
${ }^{10}$ Alderson, "Language Test Construction and Evaluation" in Gofur, "An Analysis on the Content Validity of English Summative Test Items for First Grade of Junior High School in Even Semester 2012/2013" (Published Thesis: UIN Syarif Hidayatullah Jakarta), p. 13.
${ }^{11}$ Hopkins, Educational and Psychological Measurement and Evaluation (Boston: Viacom Company, 1998) $8^{\text {th }}$ ed, p. 77.

Moreover, Alderson et al. state that content validity is the representativeness of sampling adequacy of the content-the substance, the matter, and the topics-of a measuring instrument. The content means the material in the curriculum. That is why this kind of validity is also called curricular validity. ${ }^{12}$

Content validity is also defined as how good the representativeness of the domain of item in the test items. In analyzing the content validity of the test, the tester should compare between test items and the domain of the test in which it must be described considerately.

According to Wiersma and Jurs, there are two methods for demonstrating the content validity of a test. The first method is by listing the specific objectives of the test that want tobe reach and match them with each test item. And then, decide whether they have been appropriate or not. Another method is by constructing a table to classify the items' content and taxonomic level, that is student outcome require on the item. ${ }^{13}$

It can be concluded that what the student was taught and is suppose to have learned. Content validity will be compromised if the test covers topics not teach or if it does not cover topics that have been taught. Content validity is determined by expert judgment. No formula and statistic can be computed, and there is no way to express it quantitatively. Often expert in the topic covers the test is asked to assess its content validity. These experts carefully

[^3]review the process used to develop the test as well as the test itself, and then they make a judgment about how well items represent the tend content area. In other words, they compare what was taught and what is being tested. When the two coincide, content validity is strong.

## 2) Construct Validity

Construct validity is the degree to which a test measures an intended hypothetical construct. It is the most important form of validity because it asks the fundamental validity question: What is this test measuring? We have seen that all variables derive from constructs and that construct is no observable traits, such as intelligence, anxiety, and honesty, "invented to explain behavior. ${ }^{14}$

Besides, the research of construct validity is often associate with content validity because both of them are based on rational analysis. It can examine by identifying and pairing each item with standard competency and certain indicators to measure the performance. Also, construct validity concerns the existence of certain learning theories or construct that be the element of the achievement of abilities and skills.

## 3) Concurrent Validity

When the result of a test has a high correlation with the result of the measurement instrument on the same case area and at the same time, it is considered to have concurrent validity. ${ }^{15}$

[^4]Furthermore, concurrent validity is determined by establishing a relationship or discrimination. The relationship method involves determining the correlation between scores on the test under study and scores on some other establish test or criterion.

On other hand, there are forth steps that formulate as follows; (1) administer the new test to define individuals, (2) administer previously establish, valid criterion test to the same group at the same time or shortly thereafter, (3) correlate the two sets of scores, (4) evaluate the result. The result of the correlation indicates the degree of concurrent validity of the new test, if the coefficient is high (near 1.0), the test has good concurrent validity.

## 4) Face Validity

An important facet of consequential validity is the extent to which students view the assessment as fair, relevant, and useful for improving learning or what is popularly known as face validity. According to Brown, face validity refers to the degree to which a test looks right, and appears to measure the knowledge or abilities it claims to measure. ${ }^{16}$ In general, face validity in testing describes the look of the test as opposed to whether the test is proving to work or not. Furthermore, validity is a complex concept, yet it is indispensable to the teacher's understanding of what makes a good test.

Besides, face validity refers to the test's surface credibility of public acceptability and is frequently dismissed by testers as being unscientific and irrelevant. It means that a test has face validity if it has an appearance as it should be measure.

[^5]
## 3. Concept of Reliability

a. The Definition of Reliability

Reliability is the consistency of measures across different conditions in the measurement procedures. ${ }^{17}$ On the other hand, reliability is consistent and dependable, if you give the same test to the same student or matched students on two different occasions, the test should yield similar results. Also, reliability is the level of internal consistency or stability of the test over time, or the ability of the test to obtain the same score from the same student at different administrations (given in the same situation).

However, the issues of reliability of a test may best be addressed by considering several factors that may contribute to the unreliability of a test. Consider the following possibilities fluctuations in the student, in scoring, in test administration, and the test itself.
b. Types of Reliability

1) Split-half

This kind of technique is applied by separating the result of the test score into two groups, namely the beginning and end groups. The researcher counts the total score is correlated to obtain the coefficient correlation. To get whole reliability of test, the researcher can use the formula of Spearman-Brown below:
$\mathrm{r}_{11}=\frac{2 r b}{1+r}$
In which:
$r_{b}=$ Correlation Product-Moment between split-half (odd-even) or (prefix and suffix)

[^6]$\mathrm{r}_{11}=$ reliability.

## 2) Kuder-Richardson 20 and 21

This technique is conducting by comparing score test items. If the test items show the degree of agreement, we can conclude that the result of the test measurement is consistent. Here is the formula:
$\mathrm{r}=\mathrm{n}\left(1-\sum \mathrm{pq}\right)$
$n-1 s^{2}$
In which:
$r=$ reliability
$\mathrm{n}=$ total items
$\mathrm{p}=$ correct answer
$\mathrm{q}=$ incorrect answer ( $\mathrm{q}=1-\mathrm{p}$ )
$\mathrm{s}=$ standard deviation.
However, in simple explanation using Kuder- Richardson technique requires the use of the discrete score that the correct answer gets a score of 1 and the incorrect answer gets a score of 0 .

## 3) Alpha Cronbach

If the previous formula is using a dichotomy score, this kind of technique can use to test that has scale and dichotomy also. However, both techniques are the same because they are coefficients of composite reliability for all items of testing. ${ }^{18}$ Here is the formula:

[^7]$\mathrm{r}=\mathrm{k}\left(1-\sum \mathrm{si}^{2}\right)$
$\mathrm{k}-1 \mathrm{st}^{2}$
In which:
$r=$ reliability
$\sum \mathrm{si}^{2}=$ total item variant
$\mathrm{St}^{2}=$ total variant ( all test items)

## 4. Concept of Test Analysis

a. difficulty level

The difficulty of the test shows how difficult or how easy each item the test or all of the test item. Therefore, it will be known whether the test item includes very difficult, difficult, medium, easy, and very easy. In general level of difficulty can be seen from the average score obtained by students. The level of difficulty can be express as a percentage. For example, the test that all participants answer correctly state to have $p=100 \%$ or 1,00 . Here is the formula:
p = JJB: JPT x 100\%
In which:
$\mathrm{p}=$ Tingkat kesulitan
JJB = Jumlah Jawaban Benar
JPT = Jumlah Peserta Tes
The test item that has p close to 1 or $100 \%$ means easy or very easy.
Otherwise, the test item that has p close to 0 means very difficult or difficult. The test item that considers having an ideal p is 0,50 , meanwhile, p that can be acceptable has a range between $0,30-0,70$.

## b. Discrimination

Discrimination or level of discrimination (D) shows the ability of the test to distinguish abilities between the test participants who have high abilities and low abilities. When the D is higher the ability to discriminate between smart dan less intelligent groups of the student will be better. Furthermore, when the level of discrimination is 0 it means the test cannot differentiate the ability between participants who have high ability and low ability. If discrimination level $\mathrm{D}=1,00$ it means all of the participants can answer correctly and in the lower group, no one can answer the test correctly. The level of discrimination can be done as follows:

1) The corrected work of the participant divide into three groups based on the amount of the raw score. The three groups are the higher score group, medium score group, and lower score group. Determination of the number of upper range between $70 \%-100 \%$ and lower groups with a range between $20 \%-50 \%$.
2) Calculates the number of the correct answer of each test item for the each group use the formula as follows:
$\mathrm{D}=\mathrm{P}_{\mathrm{A}}-\mathrm{P}_{\mathrm{B}}$ or
$\mathrm{D}=\mathrm{P}_{\mathrm{H}}-\mathrm{P}_{\mathrm{L}}$
In which:
$\mathrm{D}=$ discrimination score
$\mathrm{P}_{\mathrm{A}}$ or $\mathrm{P}_{\mathrm{H}}=$ The proportion of students in the upper group who answered the test item correctly. Can be obtained by the formula:

$$
\mathrm{P}_{\mathrm{A}}=\mathrm{P}_{\mathrm{H}}=\mathrm{B}_{\mathrm{A}}: \mathrm{J}_{\mathrm{A}}
$$

In which:
$\mathrm{B}_{\mathrm{A}}=$ The number of participants in the upper group who answered correctly the test item.
$\mathrm{J}_{\mathrm{A}}=$ The number of participant in the upper group
$\mathrm{P}_{\mathrm{B}}$ or $\mathrm{P}_{\mathrm{L}}=$ The proportion of students in the lower group who answered the test item correctly. Can be obtained by the formula:

$$
\mathrm{P}_{\mathrm{B}}=\mathrm{P}_{\mathrm{L}}=\mathrm{B}_{\mathrm{B}}: \mathrm{J}_{\mathrm{B}}
$$

In which:
$\mathrm{B}_{\mathrm{B}}=$ The number of participants in the lower group who answered correctly the test item.
$\mathrm{J}_{\mathrm{B}}=$ The number of a participant in the lower group.

## c. Effectiveness of distractor

Distractor function is often known by another term namely the pattern of distributing item answer. The pattern of distributing the answer is an illustrative pattern of how the participant determines the answer, with the various possible answer that has been put on each test item. The distractor is declaring successful or functioning well when selecting by at least 5\% of all participants.

## 5. Test

a. The Definition of Test

A test, in simple terms, is a method of measuring a person's ability knowledge, or performance in a given domain. ${ }^{19}$ To evaluate individual performance, examination. ${ }^{20}$ Test also evaluates the effectiveness of the syllabus as well as the methods and materials the teacher is using.

Based on the definition above the experts want to highlight the term testing as a way or method in which people's intelligence and achievement are being explored. Testing becomes an important method to check many requirements or competencies in some fields like education, law, and government. Yet in the teaching-learning process, the term testing is a little bit different from those kinds of tests.

Also, the writer can conclude that a test has two main objectives. First, it is to measure student achievement so that the teacher can determine the grades and the aptitude of their students. Second, it is as feedback for the teachers and the students about the progress of the teaching-learning process.

## b. Types of test

There are five types of tests according to brown. There are:

1) Language Aptitude Test

A language aptitude test (or prognostic test) is designed to measure the student's probable performance in a foreign language that he or she has not

[^8]started to learn. It assesses aptitude for learning a language. Language learning aptitude is a complex matter, consisting of such factors as intelligence, age, motivation, memory, phonological sensitivity, and sensitivity to grammatical patterning. ${ }^{21}$ Furthermore, the relative weighting given to these elements must depend on many factors and thus vary considerably from one individual to another. Also, a language aptitude test is designed to measure capacity or general ability to learn a foreign language and ultimate success in that undertaking. ${ }^{22}$ Language aptitude tests are ostensibly designed to apply to the classroom learning of any language. Two standardized aptitude tests have been used in the United States: Modern Language Aptitude Test (MLAT) and Pimsleur Language Aptitude Battery (PLAB).
2) Proficiency Test

The proficiency test is a test that looks forward, defining a student's language proficiency concerning a particular task which he or she will require to perform. ${ }^{23}$ On other hand, a proficiency test is not limited to any one course, curriculum, or single skill in the language; rather, it tests overall ability. ${ }^{24}$ The proficiency test is a concern simply with measuring a student's control of the language in the light of what he or she will be expected to do with it in the future performance of a particular task.

[^9]
## 3) Placement Test

Certain proficiency tests can act in the role of placement tests, the purpose of which is to place a student into a particular level or section of a language curriculum or school. ${ }^{25}$ A placement test usually, but not always, includes a sampling of the material to be cover in the various courses in a curriculum; a student's performance on the test should indicate the point at which the student will find material neither too easy nor too difficult but appropriately challenging.
4) Diagnostic Test

Although the term the diagnostic test is widely used, few tests are constructed solely as diagnostic tests. Achievement and proficiency tests, however, are frequently used for the diagnostic process: areas of difficulty are diagnosed in such tests so that appropriate remedial action can be taken later. ${ }^{26}$

Besides, the diagnostic is also designed to diagnosed specified aspects of a language. For example, a pronunciation test might diagnose the phonological features of English that are difficult for learners and should therefore become part of the curriculum.

## 5) Achievement Test

An achievement test is related directly to classroom lessons, units, or even the total curriculum. Achievement tests are (or should be) limited to particular material addressed in a curriculum within a particular time frame

[^10]and are offered after a course has focused on the objectives in question. ${ }^{27}$ Achievement tests can also serve the diagnostic role of indicating what a student needs to continue to work on in the future, but the primary role of an achievement test is to determine whether course objectives have been met-and appropriate knowledge and skills acquired at the end of a period of instruction.

Based on the explanation of the types of tests, in this research, the researcher focused on the achievement tests that were used in school at the end of each semester.

## 6. The Quality of a Good Test

A test is said to be good if it meets the main requirements namely: valid, reliable, and practical. ${ }^{28}$ A good test is an essential requirement in knowing the results of language learning. Through the implementation of the test, it is hoped that information can be obtained about various aspects of the implementation of language teaching.

Besides that, the results of information regarding student learning outcomes are one of the most important aspects, the implementation of tests in language teaching also provides information about the accuracy of identifying the objective, the suitable of teaching materials and effectiveness of teaching methods, whether or not enough exercises are given as well as student learning difficulties.

All of that information can be obtained based on observations of the level of student success, it can be seen from the scores achieved, the study of the level and

[^11]types of errors made by test participants. Given the importance of the test function, it is very necessary to ensure that the tests used in teaching are truly good and reliable tools.

A good test is one that is neither too easy nor too difficult for students. Tests that are too easy do not stimulate students to make the best efforts to complete the test and tests that are too difficult will make students give up and have no enthusiasm to try again because they are beyond their ability.

## 7. Characteristic of Test

## a. Validity

The validity refers to how the test measures what it wants to measure. For example, if the test is intended to measure speaking ability then the form of the test is an oral test, not a written test. ${ }^{29}$

From the definition above, the writer assumes that the validity of a test is needed because conformity relates to the conformity of the test to some goals in the curriculum or course of the study.

## b. Reliability

Reliability of regularity refers to the consistency of the test result it means that even though the test is given several times to the same students, the result will still be the same and consistent. Although, consistently does not have to be the same but as a whole, if the test result drops then the result of all participants will also drop.

Also, the test can be said reliable if the test is administered to the test taker at the same a different time, and then it procedures the same score.

[^12]
## c. Objectivity

Objectivity refers to consistency in the scoring system it means objectivity indicates no personal influence in the scoring system and the test result show the student's ability as it is.
d. Practicability

Practicability refers to a test that is easy to administer it means that the test is easy to administer, easy to check, and complete with clear instructions. ${ }^{30}$

Based on the statement above, it is inferred that there are three important aspects related to the practicality of the test. The first is the efficiency of the time, the efficiency of the cost, and the ease of administration.

From the four characteristics of a good test above at least two characteristics should have been attending and considered important so that it can often use as the basis to make a test and become a measuring tool that measures students learning outcomes.

## C. Conceptual Farmework

Conceptual framework underlying this research will be given in the following diagram:
J. B. Heaton (1991)

${ }^{30}$ Sugianto "Ciri-Ciri (Karakteristik) Tes Yang Baik" (Published Thesis: IAIN Palangka Raya, Palangka Raya), p. 2-3.


The diagram above shows the conceptual framework of the research that will construct in this research. Test is one of the kinds of language assessment. Test aims to measure what a student grasped, typically occurs at the end of a course of unit of instruction. Item Analysis is related to the several items of statistical analysis in analyzing characteristics and features of a test. They consist of difficulty level, discrimination level, effectiveness of distractor, validity, and reliability.

## CHAPTER III

## RESEARCH METHOD

## A. Research Design

This research used quantitative design with analysis content. It was appropriate for research purposes that describe the findings in percentage form, frequency, and mean. In a certain section researcher also used the statistical technique of product-moment and KR- 21 . However, using this statistical technique is providing a clearer overview of the data that has described using frequency and percentage form.

## B. Location and Duration of the Research

The location of the research took place at senior high school SMA Negeri 3 Parepare. The research used quantitative research and took 30 days including collect and analyze data.

## C. Research Subject

The subject of this research is the 58 sheets English final test items used to test the students who are registered as the first-year students in the academic year 2020-2021 for second grade of senior high school SMA Negeri 3 Parepare incorporated in concurrent test execution for second grade of senior high school SMA Negeri 3 Parepare that consisting of three classes. They are XI MIPA 1, XI MIPA, and XI IPS 1, and the total population is 134 students. But the researcher take the 58 students from the three classes as test participants, where the sample of this research retrieval using a random sampling group technique, as follows:

Table 3.1 The table of students sample of second grade SMA N 3 Parepare

| NO | CLASS/GRADE | STUDENTS |
| :---: | :---: | :---: |
| 1 | XI MIPA 1 | 29 |
| 2 | XI MIPA 2 | 19 |
| 3 | XI IPS 1 | 10 |
|  | TOTAL | 58 |

They have done the final test years 2020/2021. Then these 58 sheets of English teacher final test which is used as a sample.

## D. Instrument of the Research

The instrument of the research is the documentation in the form of final test which is the teacher made use to test the first-year student in the academic year of 2020-2021 at second grade of senior high school SMA Negeri 3 Parepare. There are 30 items of the test; 30 numbers are multiple-choice. The items are arranged by composition (1) reading text, (2) grammatical, (3) vocabulary,

## E. Technique of Collecting Data

In this research, researcher used three steps to collect the data as follows:
First, the test answer sheet will be identified and analyzed for each item of the test with the sign true and false. True false identification produces a record of the number of items that are answered correctly and answer wrong. Second, split the answer sheet into two groups, that is the top group and bottom group 29 sheets each of the groups. This step produces data to identify p and D for each item. After these
two steps are done, interpretation is also carried out to see effectiveness distractor, validity, and reliability.

## F. Technique of Data Analysis

1. The Difficulty Level of Test

In obtaining a good test besides fulfilling reliability and validity there is also a need for a balance of the difficulty level of each item test. The balance that is meant is there is an item for each test which includes easy, medium, and difficult with proportionality. Difficulty level and easy test can be seen from students' ability in answering the test, not from the teacher's point of view as making tests. ${ }^{31}$

As we know there are many types of test items such as multiple choice and essays. In this research the researcher focused on multiple-choice, to find out p , the researcher use formula $\frac{\text { Jumlah Jawaban Benar }}{\text { Jumlah Peserta Test }}$ : x $100 \%$ (the number of correct answers divides by the number of all participants). To see test items number which belongs to the easy or difficult category can be seen through the difficulty index as follow:

Table 3.2 Difficulty Index

| The amount of $\mathbf{P}$ | Interpretation |
| :---: | :---: |
| Less than 0,30 | Difficult |
| $0,30-0,70$ | Medium |
| More than 0,70 | Easy |

The amount of the difficulty index between $0,00-1,00$. The difficulty index shows the difficulty level of the item of the test so that the test item with an index of
${ }^{31}$ Sulistyorini, Evaluasi Pendidikan Dalam Meningkatkan Mutu Pendidikan, (Yogyakarta:
Teras, 2009), p. 174.

0,00 shows that the test items are too difficult, otherwise, if the index shows 1,00 it means that the test items are too easy.

## 2. The Discrimination of Test

To find out the difficulty of test items requires discrimination, namely the ability of the test items to find out students who mastered the material being tested and students who have not mastered the material being tested. The discrimination of test items can be interpreted as an index showing the level of test items in distinguishing groups of smart students and groups of students who are less intelligent among the test participants.

A number that shows the amount of discrimination is called the discrimination index ranges between $0,00-1,00$. On this index, there is a possible negative sign when a test item inversely to shows the quality of test items, namely smart students are considered not smart, and less intelligent students are considered smart.

Also, there are three points of discrimination, namely:
Table 3.3 Three points of discrimination

| Negative <br> Discrimination | Low Discrimination | Positif Diskrimination |
| :---: | :---: | :---: |
| $-1,00$ | 0,00 | 1,00 |

Based on the table above there is a discrimination index can be used as a benchmark to find out which test items have good discrimination as follow:

Table 3.4 Discrimination Index

| The amount of number <br> discrimination index <br> item (D) | Classification | Interpretation |
| :---: | :---: | :---: |
| Less than 0,20 | Poor | The test item has low <br> discrimination power <br> and considered not <br> having good <br> discrimination power |
| $0,20-0,40$ | Satisfactory | The test item has <br> medium <br> discrimination power. |
| $0,40-0,70$ | Excellent | The test item has good <br> discrimination power |
| $0,70-1,00$ | The test item has <br> excellent <br> discrimination power |  |
| Negative | The test item has <br> negative <br> discrimination power |  |

Besides, test items that can be answered by students who are smart and less intelligent, then the test item is not good because it doesn't have discrimination power. When the test item cannot be answered by smart students and students who are less intelligent, then the test item is not good either, because it doesn't have discrimination power.

Furthermore, a good test is one that can be answered correctly by smart students. For example, if a group of smart students can answer the test correctly and the groups of students who are less intelligent answer incorrectly it means that the test has excellent discrimination power. However, if the less intelligent students answered the test correctly and smart students answered incorrectly it means that the test has a discrimination index of $-1,00$.

On another side, if the two groups of smart students and students who are less intelligent answered correctly it means that the discrimination index is 0,00 or don't have discrimination power.

To find out D , the researcher use formula as follow:

$$
\begin{gathered}
\mathrm{D}=\mathbf{P}_{\mathrm{A}}-\mathbf{P}_{\mathrm{B}} \text { or } \\
\mathbf{D}=\mathbf{P}_{\mathrm{H}}-\mathbf{P}_{\mathrm{L}}
\end{gathered}
$$

In which:
$\mathrm{D}=$ discrimination score
$\mathrm{P}_{\mathrm{A}}$ or $\mathrm{P}_{\mathrm{H}}=$ The proportion of students in the upper group who answered the test item correctly. Can be obtained by the formula:

$$
\mathbf{P}_{\mathrm{A}}=\mathbf{P}_{\mathrm{H}}=\mathrm{B}_{\mathrm{A}}: \mathbf{J}_{\mathrm{A}}
$$

In which:
$\mathrm{B}_{\mathrm{A}}=$ The number of participants in the upper group who answered correctly the test item.
$\mathrm{J}_{\mathrm{A}}=$ The number of participant in the upper group
$\mathrm{P}_{\mathrm{B}}$ or $\mathrm{P}_{\mathrm{L}}=$ The proportion of students in the lower group who answered the test item correctly. Can be obtained by the formula:

$$
P_{B}=P_{L}=B_{B}: J_{B}
$$

In which:
$B_{B}=$ The number of participants in the lower group who answered correctly the test item.
$\mathrm{J}_{\mathrm{B}}=$ The number of a participant in the lower group.

## 3. Effectiveness of distractor

Distractors are classified as the incorrect answer in a multiple-choice question. ${ }^{32}$ In every objective test always use an alternative answer which contains two elements that are, the correct answer and the incorrect answer as a heretic (distractor). The purpose of using distractors is to distract students who do not know about the material that has been taught and to differentiate with the students who mastered the material that has been taught.

Therefore, a good distractor is it can be avoided by smart students and selected by the less intelligent students. Also, if the distractor is selected $5 \%$ by the number of students it means that the distractor has good function.

To find out the effectiveness of the distractor researcher add the number of students in the top group and the lower group who choose the distractor divided by the number of student then multiplied $100 \%$.

## 4. Validity

The validity of each item is analyzing use statistical correlation technique of product-moment as follows:

Validity: $\mathrm{r}_{\mathrm{xy}}=\mathrm{N} \sum \mathrm{XY}-\left(\sum \mathrm{X}\right)\left(\sum \mathrm{Y}\right)$

$$
\sqrt{ }\left[\mathrm{N} \sum \mathrm{X}^{2}-\left(\sum \mathrm{X}\right)^{2}\right]\left[\mathrm{N} \sum \mathrm{Y}^{2}-\left(\sum \mathrm{Y}\right)^{2}\right]
$$

In which:
rxy $=$ Correlation coefficient
$\mathrm{N}=$ The number of the test participant
${ }^{32}$ Shafzan Sabri, "Item Analysis of Student Comperhensive Test for Research Teaching Begiliner String Ensemble Using Model Based Teaching Among Music Students In Public Universities" In Laela, Khairuddin, "Analisis Kesukaran Soal, Daya Pembeda Dan Fungsi Distraktor" (Jurnal Komunikasi Dan Pendidikan Islam: UIN Sunan Kalijaga: Yogyakarta, 2019), Vol. 8, No. 2, P. 59.
$\sum \mathrm{X}=$ Sum of $X$
$\sum \mathrm{Y}=$ Sum of $Y$
The validity can find out with the classification of validity index as follows:
Table 3.5 Validity Index

| The Amount of Validity | Interpretation |
| :---: | :---: |
| $0.800-1.00$ | Excellent |
| $0.600-0.800$ | Good |
| $0.400-0.600$ | Satisfactory |
| $0.200-0.400$ | Poor |
| $0.00-0.200$ | Very Poor |

After finding the correlation coefficient by using above pattern then the result compared with the critical value of product moment, it means that the item is considered to be valid. In addition, if the result $r$ in a test item is higher than the table of Product Moment, it means that the item is considered to be valid. This way is more up-to-date than using such index above.

## 5. Reliability

The reliability of each item can be analyzed using coefficient formula Alpha Cronbach as follows; ${ }^{33}$

$$
\text { Raliability: } \mathbf{r}_{11}=\frac{2 \times \mathrm{r}^{1} / 2^{1 / 2}}{\left(1+r^{1 / 1 / 1 /)}\right.}
$$

In which:
$\mathrm{r}_{11}=$ instrument reliability
$\mathrm{r}^{1} / 2^{1} / 2=$ the result of validity $\left(\mathrm{r}_{\mathrm{xy}}\right)$

[^13]The reliability can be find out with the calssification of reliability index as follows:

Table 3.6 Reliability Index

| The Amount of Reliability | Interpretation |
| :---: | :---: |
| $0.800<{ }^{\mathrm{r}}{ }_{11}<1.00$ | Excellent |
| $0.600<{ }^{\mathrm{r}}{ }_{11}<0.800$ | Good |
| $0.400<{ }^{\mathrm{r}}{ }_{11}<0.600$ | Statisfication |
| $0.200<{ }^{\mathrm{r}}{ }_{11}<0.400$ | Poor |
| $-1.00<{ }^{\mathrm{r}}{ }_{11}<0.200$ | Very Poor |

Based on the table above, if the result of $r$ in the test item is higher than the table of Product Moment, it means that the item is considered to be reliable.

## CHAPTER IV

## FINDINGS AND DISCUSSION

This chapter presents the researcher findings and the discussions about analyzing the quality of final test for senior high school at the second grade SMA Negeri 3 Parepare. Also, the findings will be discussed based on the issues in this research.

## A. Findings

The research findings were the answering of problem statements formulated in the first chapter. This part was also present the data analysis of the quality of the final test. To collect the data. The final test for the second-grade student of SMA Negeri 3 Parepare academic year 2020/2021 made by the teacher was used to collecting the data and to find out the quality of the final test. The total number of the test is 30 items multiple-choice questions. The test was held on February $18^{\text {th }}, 2021$. With the given time 45 minutes.

1. The difficulty level of final test

The data of the findings show that all test items were at a medium level. To be clear, the researcher provides a table that gave a brief description of the difficulty level of each item.

Table 4.1 The difficulty level analysis

| Item | $\mathbf{P}$ | Classification | Difficulty <br> Level |
| :---: | :---: | :--- | :--- |
| 1 | 0,64 | $0,30<\mathrm{P} \leq 0,70$ | Medium |
| 2 | 0,66 | $0,30<\mathrm{P} \leq 0,70$ | Medium |
| 3 | 0,64 | $0,30<\mathrm{P} \leq 0,70$ | Medium |
| 4 | 0,57 | $0,30<\mathrm{P} \leq 0,70$ | Medium |
| 5 | 0,55 | $0,30<\mathrm{P} \leq 0,70$ | Medium |
| 6 | 0,59 | $0,30<\mathrm{P} \leq 0,70$ | Medium |


| Item | $\mathbf{P}$ | Classification | Difficulty <br> Level |
| :---: | :---: | :--- | :--- |
| 7 | 0,61 | $0,30<\mathrm{P} \leq 0,70$ | Medium |
| 8 | 0,64 | $0,30<\mathrm{P} \leq 0,70$ | Medium |
| 9 | 0,61 | $0,30<\mathrm{P} \leq 0,70$ | Medium |
| 10 | 0,42 | $0,30<\mathrm{P} \leq 0,70$ | Medium |
| 11 | 0,64 | $0,30<\mathrm{P} \leq 0,70$ | Medium |
| 12 | 0,61 | $0,30<\mathrm{P} \leq 0,70$ | Medium |
| 13 | 0,67 | $0,30<\mathrm{P} \leq 0,70$ | Medium |
| 14 | 0,61 | $0,30<\mathrm{P} \leq 0,70$ | Medium |
| 15 | 0,61 | $0,30<\mathrm{P} \leq 0,70$ | Medium |
| 16 | 0,54 | $0,30<\mathrm{P} \leq 0,70$ | Medium |
| 17 | 0,69 | $0,30<\mathrm{P} \leq 0,70$ | Medium |
| 18 | 0,62 | $0,30<\mathrm{P} \leq 0,70$ | Medium |
| 19 | 0,59 | $0,30<\mathrm{P} \leq 0,70$ | Medium |
| 20 | 0,51 | $0,30<\mathrm{P} \leq 0,70$ | Medium |
| 21 | 0,66 | $0,30<\mathrm{P} \leq 0,70$ | Medium |
| 22 | 0,54 | $0,30<\mathrm{P} \leq 0,70$ | Medium |
| 23 | 0,57 | $0,30<\mathrm{P} \leq 0,70$ | Medium |
| 24 | 0,62 | $0,30<\mathrm{P} \leq 0,70$ | Medium |
| 25 | 0,62 | $0,30<\mathrm{P} \leq 0,70$ | Medium |
| 26 | 0,59 | $0,30<\mathrm{P} \leq 0,70$ | Medium |
| 27 | 0,61 | $0,30<\mathrm{P} \leq 0,70$ | Medium |
| 28 | 0,57 | $0,30<\mathrm{P} \leq 0,70$ | Medium |
| 29 | 0,64 | $0,30<\mathrm{P} \leq 0,70$ | Medium |
| 30 | 0,62 | $0,30<\mathrm{P} \leq 0,70$ | Medium |

There are four columns in the table; the first column provides information about the number of the test. The second column provides information about the result of P level analysis. The third column provides information about the difficulty classification. And, the fourth column provides information about difficulty level status. Then to get the P level of the test the researcher used the formula of Bachman.

For example at the first item of the test there were 58 students who have taken the test and the test has 30 questions all of the questions were multiple-choice.

And, out of 58 students there were 38 students answered correctly the first item of the test the the index of the difficulty level of the test was 0,64 (see Appendix 4).

1) Item number 1 is medium because there are 38 from 59 students who can answer correctly and the difficulty level of this item is 0,64 that belongs to the medium item.
2) Item number 2 is medium because there are 39 from 59 students who can answer correctly and the difficulty level of this item is 0,66 which belongs to the medium item.
3) Item number 3 is medium because there are 38 from 59 students who can answer correctly and the difficulty level of this item is 0,64 that belongs to the medium item.
4) Item number 4 is medium because there are 34 from 59 students who can answer correctly and the difficulty level of this item is 0,57 that belongs to the medium item.
5) Item number 5 is medium because there are 33 from 59 students who can answer correctly and the difficulty level of this item is 0,55 which belongs to the medium item.
6) Item number 6 is medium because there are 35 from 59 students who can answer correctly and the difficulty level of this item is 0,59 that belongs to the medium item.
7) Item number 7 is medium because there are 36 from 59 students who can answer correctly and the difficulty level of this item is 0,61 that belongs to the medium item.
8) Item number 8 is medium because there are 38 from 59 students who can answer correctly and the difficulty level of this item is 0,64 that belongs to the medium item.
9) Item number 9 is medium because there are 36 from 59 students who can answer correctly and the difficulty level of this item is 0,61 that belongs to the medium item.
10) Item number 10 is medium because there are 25 from 59 students who can answer correctly and the difficulty level of this item is 0,42 that belongs to the medium item.
11) Item number 11 is medium because there are 38 from 59 students who can answer correctly and the difficulty level of this item is 0,64 that belongs to the medium item.
12) Item number 12 is medium because there are 36 from 59 students who can answer correctly and the difficulty level of this item is 0,61 that belongs to the medium item.
13) Item number 13 is medium because there are 40 from 59 students who can answer correctly and the difficulty level of this item is 0,67 that belongs to the medium item.
14) Item number 14 is medium because there are 36 from 59 students who can answer correctly and the difficulty level of this item is 0,61 that belongs to the medium item.
15) Item number 15 is medium because there are 36 from 59 students who can answer correctly and the difficulty level of this item is 0,61 that belongs to the medium item.
16) Item number 16 is medium because there are 32 from 59 students who can answer correctly and the difficulty level of this item is 0,54 that belongs to the medium item.
17) Item number 17 is medium because there are 41 from 59 students who can answer correctly and the difficulty level of this item is 0,69 that belongs to the medium item.
18) Item number 18 is medium because there are 37 from 59 students who can answer correctly and the difficulty level of this item is 0,62 that belongs to the medium item.
19) Item number 19 is medium because there are 35 from 59 students who can answer correctly and the difficulty level of this item is 0,59 that belongs to the medium item.
20) Item number 20 is medium because there are 30 from 59 students who can answer correctly and the difficulty level of this item is 0,51 that belongs to the medium item.
21) Item number 21 is medium because there are 39 from 59 students who can answer correctly and the difficulty level of this item is 0,66 that belongs to the medium item.
22) Item number 22 is medium because there are 32 from 59 students who can answer correctly and the difficulty level of this item is 0,54 that belongs to the medium item.
23) Item number 23 is medium because there are 34 from 59 students who can answer correctly and the difficulty level of this item is 0,57 that belongs to the medium item.
24) Item number 24 is medium because there are 37 from 59 students who can answer correctly and the difficulty level of this item is 0,62 that belongs to the medium item.
25) Item number 25 is medium because there are 37 from 59 students who can answer correctly and the difficulty level of this item is 0,62 that belongs to the medium item.
26) Item number 26 is medium because there are 35 from 59 students who can answer correctly and the difficulty level of this item is 0,59 that belongs to the medium item.
27) Item number 27 is medium because there are 36 from 59 students who can answer correctly and the difficulty level of this item is 0,61 that belongs to the medium item.
28) Item number 28 is medium because there are 34 from 59 students who can answer correctly and the difficulty level of this item is 0,57 that belongs to the medium item.
29) Item number 29 is medium because there are 38 from 59 students who can answer correctly and the difficulty level of this item is 0,64 that belongs to the medium item.
30) Item number 30 is medium because there are 37 from 59 students who can answer correctly and the difficulty level of this item is 0,62 that belongs to the medium item.
2. The discrimination of final test

The data of findings shows that the final test for second grade SMA Negeri 3 Parepare academic year 2020/2021 have six items were excellent classification, one
item satisfactory and the rest of the items have good classification. To be clear, the researcher provides a table that gave a brief description of the discrimination of each item.

Table 4.2 The discrimination level analysis

| Item | D | Classification | Interpretation |
| :---: | :---: | :---: | :---: |
| 1 | 0,69 | Good | The test item has good discrimination power |
| 2 | 0,66 | Good | The test item has good discrimination power |
| 3 | 0,69 | Good | The test item has good discrimination power |
| 4 | 0,75 | Excellent | The test item has excellent discrimination power |
| 5 | 0,87 | Excellent | The test item has excellent discrimination power |
| 6 | 0,66 | Good | The test item has good discrimination power |
| 7 | 0,76 | Excellent | The test item has excellent discrimination power |
| 8 | 0,69 | Good | The test item has good discrimination power |
| 9 | 0,55 | Good | The test item has good discrimination power |
| 10 | 0,44 | Good | The test item has good discrimination power |
| 11 | 0,62 | Good | The test item has good discrimination power |
| 12 | 0,69 | Good | The test item has good discrimination power |
| 13 | 0,63 | Good | The test item has good discrimination power |
| 14 | 0,76 | Excellent | The test item has excellent discrimination power |
| 15 | 0,69 | Good | The test item has good discrimination power |


| Item | D | Classification | Interpretation |
| :---: | :---: | :---: | :---: |
| 16 | 0,68 | Good | The test item has good discrimination power |
| 17 | 0,52 | Good | The test item has good discrimination power |
| 18 | 0,65 | Good | The test item has good discrimination power |
| 19 | 0,66 | Good | The test item has good discrimination power |
| 20 | 0,76 | Excellent | The test item has excellent discrimination power |
| 21 | 0,66 | Good | The test item has good discrimination power |
| 22 | 0,83 | Excellent | The test item has excellent discrimination power |
| 23 | 0,69 | Good | The test item has good discrimination power |
| 24 | 0,45 | Good | The test item has good discrimination power |
| 25 | 0,52 | Good | The test item has good discrimination power |
| 26 | 0,31 | Satisfactory | The test item has medium discrimination power. |
| 27 | 0,55 | Good | The test item has good discrimination power |
| 28 | 0,62 | Good | The test item has good discrimination power |
| 29 | 0,69 | Good | The test item has good discrimination power |
| 30 | 0,65 | Good | The test item has good discrimination power |

There are four columns in the table; the first column provides information about the number of the test. The second column provides information about the result of discrimination level analysis. The third column provides information about the D classification. And, the fourth column provides information about
discrimination interpretation, the researcher used the formula adopted from Prawironegoro (see Appendix 5).
3. The effectiveness of the distractor

The data of the findings show that several distractors have scores under 5\% and to be a good distractor the score should be more than $5 \%$. To be clear, the researcher provides a table that gave a brief description of the effectiveness of distractors of each item.

Table 4.3 The effectiveness of distractor analysis

| Item | Option |  |  |  |  | Information |
| :---: | :---: | :---: | :---: | :---: | :---: | :--- |
|  | A | B | C | D | E |  |
| 1 | 20,33 | $(38)$ | 10,1 | 1,6 | 1,6 |  |
| 2 | 16,9 | 8,47 | 1,6 | $(39)$ | 1,6 |  |
| 3 | $(39)$ | 18,64 | 10,16 | 3,38 | 0 |  |
| 4 | 11,86 | 8,47 | 8,47 | 11,86 | $(34)$ |  |
| 5 | 15,25 | 18,47 | 8,47 | $(33)$ | 0 |  |
| 6 | 10,16 | 8,47 | 16,94 | $(35)$ | 3,38 |  |
| 7 | 13,55 | 15,25 | $(36)$ | 5,08 | 3,38 |  |
| 8 | $(39)$ | 6,77 | 11,86 | 8,47 | 5,08 |  |
| 9 | $(36)$ | 5,08 | 15,25 | 10,16 | 6,77 |  |
| 10 | 20,33 | 6,77 | 5,08 | 11,86 | $(32)$ |  |
| 11 | 5,08 | 6,77 | 10,16 | 11,86 | $(38)$ |  |
| 12 | 15,25 | 6,77 | 10,16 | $(35)$ | 5,08 |  |
| 13 | $(39)$ | 8,47 | 10,16 | 6,77 | 6,77 |  |
| 14 | 15,25 | 13,55 | $(37)$ | 5,08 | 1,6 |  |
| 15 | 3,38 | $(37)$ | 15,25 | 10,16 | 6,77 |  |
| 16 | 15,25 | 15,25 | 10,16 | $(32)$ | 3,38 |  |
| 17 | $(42)$ | 6,77 | 5,08 | 8,47 | 6,77 |  |
| 18 | 11,86 | $(32)$ | 6,77 | 8,47 | 8,47 |  |
| 19 | 11,86 | $(35)$ | 5,08 | 16,9 | 5,08 |  |
| 20 | 8,47 | 22,03 | $(30)$ | 8,47 | 8,47 |  |
| 21 | 10,16 | $(40)$ | 10,16 | 6,77 | 3,38 |  |
| 22 | 13,55 | 10,16 | $(33)$ | 6,77 | 10,16 |  |
| 23 | $(34)$ | 11,86 | 8,47 | 15,25 | 5,08 |  |


| Item | Option |  |  |  |  | Information |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | A | B | C | D | E |  |
| 24 | 15,25 | 8,47 | $(36)$ | 10,16 | 3,38 |  |
| 25 | $(35)$ | 11,86 | 11,86 | 8,47 | 6,77 |  |
| 26 | 22,03 | 3,38 | 5,08 | $(32)$ | 13,55 |  |
| 27 | 11,86 | 5,08 | $(36)$ | 11,86 | 8,47 |  |
| 28 | 13,55 | $(34)$ | 13,55 | 8,47 | 5,08 |  |
| 29 | 11,86 | 6,77 | $(38)$ | 11,86 | 3,38 |  |
| 30 | 11,86 | 5,08 | 11,86 | $(37)$ | 5,08 |  |

From the table above there are seven column; the first column to show the item, second, third, fourth, fifth, and sixth column to show the result of the effectiveness of distractor analysis, and the last column to show the information of the answer key and the answer key has been written by the researcher with closed brackets and open brackets. And, to get the effectiveness score from the test, the researcher used a formula adopted from Sudjiono (see Appendix 6). We can conclude that the outcome of the existing data of the effectiveness of distractor of final test for second grade SMA Negeri 3 Parepare reported that there are several some distractors that need to be replaced because it has low distracting power that is lower than $5 \%$. As we know a good distractor is it can be avoided by smart students and selected by the less intelligent students. ${ }^{34}$ If the distractor is selected $5 \%$ by the number of students it means that the distractor has good function.

From those data and statement above, the writer could conclude that the distractor function in the final test for second grade student SMA Negeri 3 Parepare have a poor function so its need to be replaced and its have to find a new distractor which has a good function.

[^14]
## 4. The validity of final test

The data of the findings show that twenty one item of the final test were valid and nine item were invalid. To be clear, the researcher provides a table that gave a brief description of the effectiveness of distractors of each item.

Table 4.4 The validity analysis

| Item | Correlation | Table | Status |
| :---: | :---: | :---: | :---: |
| 1 | 0,734 | 0,678 | Valid |
| 2 | 0,766 | 0,678 | Valid |
| 3 | 0,695 | 0,678 | Valid |
| 4 | 0,714 | 0,678 | Valid |
| 5 | 0,834 | 0,678 | Valid |
| 6 | 0,671 | 0,678 | Invalid |
| 7 | 0,871 | 0,678 | Valid |
| 8 | 0,773 | 0,678 | Valid |
| 9 | 0,674 | 0,678 | Invalid |
| 10 | 0,532 | 0,678 | Invalid |
| 11 | 0,744 | 0,678 | Valid |
| 12 | 0,761 | 0,678 | Valid |
| 13 | 0,685 | 0,678 | Valid |
| 14 | 0,808 | 0,678 | Valid |
| 15 | 0,743 | 0,678 | Valid |
| 16 | 0,788 | 0,678 | Valid |
| 17 | 0,625 | 0,678 | Invalid |
| 18 | 0,755 | 0,678 | Valid |
| 19 | 0,694 | 0,678 | Valid |
| 20 | 0,798 | 0,678 | Valid |
| 21 | 0,752 | 0,678 | Valid |
| 22 | 0,855 | 0,678 | Valid |
| 23 | 0,748 | 0,678 | Valid |
| 24 | 0,536 | 0,678 | Invalid |
| 25 | 0,571 | 0,678 | Invalid |
| 26 | 0,399 | 0,678 | Invalid |
| 27 | 0,639 | 0,678 | Invalid |
|  |  |  |  |
|  |  |  |  |
| 18 | 0 | 0 | 0 |


| Item | Correlation | Table | Status |
| :---: | :---: | :---: | :---: |
| 28 | 0,643 | 0,678 | Invalid |
| 29 | 0,765 | 0,678 | Valid |
| 30 | 0,717 | 0,678 | Valid |

There are four columns in the table; the first column provides information about the number of the test. The second column provides information about the result of the validity analysis. The third column provides information about the table of the critical value of product-moment with the level significance of $95 \%$. And, the fourth column provides information about the validity status. Besides, to get validity of the test the researcher used the formula adopted from Arikunto (see Appendix 7).

From the table above it can be seen the item number 6, 9, 10, 17, 24, 25, 26, 27, and 28 were invalid and the rest of item were valid. To be clear, the researcher describe each item as follow:

Table 4.5 Item description

## Valid Item <br> Invalid Item

Item number 1 is a valid item since the result of $r$ was higher than the table of Product Moment.
Item number 2 is a valid item since the result of $r$ was higher than the table of Product Moment.
Item number 3 is a valid item since the result of $r$ was higher than the table of Product Moment.
Item number 4 is a valid item since the result of $r$ was higher than the table of Product Moment.
Item number 5 is a valid item since the result of $r$ was higher than the table of Product Moment.
Item number 7 is a valid item since the result of $r$ was higher than the table of Product Moment.
Item number 8 is a valid item since the result of $r$ was higher than the table of

Item number 6 is an invalid item since the result of $r$ was lower than the table of Product Moment.
Item number 9 is an invalid item since the result of $r$ was lower than the table of Product Moment.
Item number 10 is an invalid item since the result of $r$ was lower than table of Product Moment.
Item number 17 is an invalid item since the result of $r$ was lower than the table of Product Moment.
Item number 24 is an invalid item since the result of $r$ was lower than the table of Product Moment.
Item number 25 is an invalid item since the result of $r$ was lower than the table of Product Moment.
Item number 26 is an invalid item since the result of $r$ was lower than the table of

Valid Item Invalid Item

| Product Moment. | Product Moment. |
| :--- | :--- |
| Item number 11 is a valid item since the | Item number 27 is an invalid item since |
| result of r was higher than the table of | the result of r was lower than the table of |
| Product Moment. | Product Moment. |
| Item number 12 is a valid item since the | Item number 28 is an invalid item since |
| result of r was higher than the table of | the result of r was lower than the table of |
| Product Moment. | Product Moment. |

Item number 13 is a valid item since the result of $r$ was higher than the table of
Product Moment.
Item number 14 is a valid item since the result of $r$ was higher than the table of Product Moment.
Item number 15 is a valid item since the result of $r$ was higher than the table of Product Moment.
Item number 16 is a valid item since the result of $r$ was higher than the table of Product Moment.
Item number 18 is a valid item since the result of $r$ was higher than the table of Product Moment.
Item number 19 is a valid item since the result of $r$ was higher than the table of
Product Moment.
Item number 20 is a valid item since the result of $r$ was higher than the table of Product Moment.
Item number 21 is a valid item since the result of $r$ was higher than the table of Product Moment.
Item number 22 is a valid item since the result of $r$ was higher than the table of Product Moment.
Item number 23 is a valid item since the result of $r$ was higher than the table of
Product Moment.
Item number 29 is a valid item since the result of $r$ was higher than the table of Product Moment.
Item number 30 is a valid item since the result of $r$ was higher than the table of Product Moment.

Based on the table above, the writer could conclude that the outcome of the existing data of the test reported that twenty one items were valid and nine item were invalid. This fact simply provides us a point about the current condition of the final test for second grade student SMA Negeri 3 Parepare.

Besides, an item is stated valid if the coefficient correlation of each item is higher or equal to the table of the critical value of product-moment with the level of significance $95 \% .^{35}$ Therefore, items that are already valid in the test do not need to be replaced and can be saved in the question bank for future use, but the test items were invalid need to be replaced.

## 5. The reliability of final test

The data show that the final test for second grade SMA Negeri 3 Parepare was reliable since the reliability index was 0,972 . This reliability works on the standard index. Arikunto stated that highlights that an item is considered to be reliable if the coefficient correlation of each item is higher or equal to the table of the critical value of product-moment with the level of significance $95 \%$. To be clear, the researcher provides the table of reliability analysis as follow:


There are three columns in the table; the first column provides information about the correlation. The second column provides information about the table of the

[^15]critical value of product-moment with a level significance of $95 \%$. And, the third column provides information about validity status. Then to get the validity of the test the researcher used the product-moment Spare Brown (seen Appendix 8).

Referring to the table above, the writer can conclude that the result reliability of these items by using product moment Spearman-Brown showed that the reliability index of the final test for second grade student SMA Negeri 3 Parepare was reliable since the reliability index was 0,972 which was higher than the table value of critical of product-moment. Reliability is the extent to which the same marks or grades are warded if the same test papers are marked by two or more different examiners or the same examiner on different occasion. Shortly, to be reliable a test must be consistent in its measurement.

## A. Discussion

This part in line with the interpretation of the findings derived from the previous quantitative analysis.

1. The difficulty level of final test

Based on the findings, the outcome of the existing data of The difficulty level of the final test reported that all test items were at the medium level it showed by the data were the index difficulty level between $0,30-0,70$ and the test items at the medium level ${ }^{36}$. it means that the test can be stored in a question bank and can be useful or reused for the next test. Furthermore, it can be an example to create a new test for the second grade SMA Negeri 3 Parepare.
${ }^{36}$ Umi, Kaharudin "Analisis Kesukaran Soal, Daya Pembeda dan Fungsi Distractor" (Published Thesis: UIN Sunan Klijaga, Jogjakarta), p. 45.

Besides, a good test is a test that is not too easy or vice versa too difficult for students. ${ }^{37}$ It should give an optional answer that can be chosen by students and not far from the key answer. And, the final test made by the teacher for second grade SMA Negeri 3 Parepare already has these criteria. Also, very easy items are to build in some affecting feelings of "success" among lower ability students and to serve as warm-up items, and very difficult items can provide a challenge to the highest-ability students. Also, Brown state that a good test makes students know and record the characteristics of the teacher's test if the test is given always comes to them too easy and difficult. Thus, the test should be standard and fulfill the characteristics of a good test. ${ }^{38}$

From the statement above, the writer could conclude that the final test made by the teacher for second grade SMA Negeri 3 Parepare has standard criteria it can be seen from the data in the finding that showed if the final test for second grade SMA Negeri 3 Parepare is not too easy or vice versa too difficult for students.

## 2. The discrimination of final test

Referring to the result of the data of final test for second grade SMA Negeri 3 Parepare academic year 2020/2021 has six items were excellent classification with have score range $0,70-1,00$. One item satisfactory with have score range $0,20-0,40$ and the rest of the items have good classification with have score $0,40-0,70$.

Based on statement above, the writer could conclude that it is a good result because there were no possible negative signs in each item when a test item inversely to shows the quality of test items, namely smart students are considered not smart,

[^16]and less intelligent students are considered smart. And, the final test for second grade SMA Negeri 3 Parepare.

A good test can be answered correctly by smart students. For example, if a group of smart students can answer the test correctly and the groups of students who are less intelligent answer incorrectly it means that the test has excellent discrimination power. ${ }^{39}$

Based on statement above, the writer could conclude that the final test for second grade SMA Negeri 3 Parepare has a good and excellent discrimination level it means that students who master the subject matter that has been taught by the teacher have answered the test correctly it is showed by the data have a good discrimination level.
3. The effectiveness of the distractor

Based on the findings, the outcome of the existing data of the effectiveness of distractor of final test for second grade SMA Negeri 3 Parepare reported that there are several some distractors that need to be replaced because it has low distracting power that is lower than $5 \%$. As we know a good distractor is it can be avoided by smart students and selected by the less intelligent students. ${ }^{40}$ Also, if the distractor is selected $5 \%$ by the number of students it means that the distractor has good function.

However, form the statement above the writer could conclude that the distractor function in the final test for second grade student SMA Negeri 3 Parepare

[^17]have a poor function so its need to be replaced and its have to find a new distractor which has a good function.
4. The validity of final test

Based on the findings, the outcome of the existing data of the test reported that twenty one items were valid and nine item were invalid. This fact simply provides us a point about the current condition of the final test for second grade student SMA Negeri 3 Parepare.

Besides, an item is stated valid if the coefficient correlation of each item is higher or equal to the table of the critical value of product-moment with the level of significance $95 \% .^{41}$ Therefore, items that are already valid in the test do not need to be replaced and can be saved in the question bank for future use, but the test items were invalid need to be replaced.
5. The reliability of final test

Referring to the result of data, the result reliability of these items by using product moment Spearman-Brown showed that the reliability index of the final test for second grade student SMA Negeri 3 Parepare was reliable since the reliability index was 0,972 which was higher than the table value of critical of product-moment. Reliability is the extent to which the same marks or grades are warded if the same test papers are marked by two or more different examiners or the same examiner on different occasion. Shortly, to be reliable a test must be consistent in its measurement. ${ }^{42}$

[^18]This fact simply provides us a point about the current condition of final test for second grade student SMA Negeri 3 Parepare. It is the degree to which a test consistently measures whatever it is measuring.

Besides, the researcher realizes that this research contains a weakness. Since it is a quantitative descriptive research which analyzed the final test for second grade student SMA Negeri 3 Parepare related to the difficulty level, discrimination level, the effectiveness of distractor, validity, and reliability of final test, this research will be more useful if the researcher helps the teacher redesign the test item of final test if necessary.

## CHAPTER V CONCLUSION AND SUGGESTION

This chapter concludes the findings and the discussion followed by some remarks the researcher would like to share. Some suggestions are also proposed after concluding remarks.

## A. Conclusion

After conducting the research data and doing analysis data. The researcher can draw conclusion in this five following point:

1. The difficulties of final test items SMA Negeri 3 Parepare have a medium level in difficulty level and it was a good sign because the test had medium level, not too easy, or vice versa too difficult to students.
2. The discrimination level of final test items SMA Negeri 3 Parepare have a good result there were no a possible negative sign in each item, and students who master the subject matter that have been taught by the teacher have answered the test correctly it is showed by the data that have a good discrimination level.
3. The effectiveness of distractors in several items were not effective and several distractors need to be replaced even removed. For example; distractor D and E in the item number one, two distractor have score $1,6 \%$ less than $5 \%$ and, we can say the two distractor have no good effectiveness.
4. The validity of the final test SMA Negeri 3 Parepare there were nine items ( $30 \%$ ) were in valid, item number $6,9,10,17,24,25,26,27$, and, 28 , these items need to be replaced and twenty one items ( $70 \%$ ) were valid.
5. The final test items were reliable since the reliability index was 0,972 which was higher than the table value of critical of product-moment, it has shown that the final test items were reliable.

## B. Suggestion

Concerning with the result of this research would like to give the following suggestion:

1. The teachers of SMA Negeri 3 Parepare must give more concern in designing test in order that the function of test to measure what should be measured can run as well;
2. Before applying the test to the students, each item of the test should be analyzed, reviewed and tried out by the teacher to have valid, reliable and put more concern too in distractor selection of each test items
3. To construct an ideal test, the teachers of SMA Negeri 3 Parepare should master the knowledge of language testing and assessment also make time for constructing the test items;
4. The test which is used several times should be adapted and the teachers have to make some necessary changes before reusing it to deal with the current condition.
5. As the findings of the quality of final test for senior high school at the second grade SMA Negeri 3 Parepare the item was found not valid should be revised or even removed by the teacher.

## BIBLIOGRAPHY

Alderson, J. 2003. Language Test Construction and Evaluation. London: Cambridge University Press.

Arikunto, S. 2013. Dasar-Dasar Evaluasi Pendidikan. Jakarta: Bumi Aksara.
Aris, S. 2016. "Ciri-Ciri (Karakteristik) Tes Yang Baik" Published Thesis: IAIN Palangka Raya.

Bachman, L. F. 1990. Fundamental Considerations in Language testing. London: Oxford University.

Brown, H. D. 2004. Language Assessment Principles and Classroom Practice. Francisco: California Publisher, Inc.

Cladwell, Schudt. 2008. Comprehension and Assessment. Guilford.
County Community College, L. Test Validity and Reliability; What Do the Numbers Mean. USA: Pennsylvania. County Community College Library, 2002. http://academic.luzerne.edu/kdroms/staffdev/valrel.html. 31 October 2020.

Djiwandono. 1996. Tes Bahasa Dalam Pengajaran. Bandung: ITB Bandung.
Gay, et all. 1981. Educational Research; Competencies for Analysis and Application. USA: Charles E. Merril Publishing Company.

Gronlund, N. F. 1956. Measurement and Evaluation in Teaching. New York: Macmillan Publishing Company.

Harris, David,. P. 1969. Testing English As a Second Language. New Delhi: McGraw Hill Publishing Co.

Heaton, J. B. 1991. Writing Language English Test. New York: Longman Inc.
Hopkins, Kenneth D. 1998. Educational and Psychological Measurement and Evaluation. Boston: Viacom Company.

Humairah, M. 2016. "Item Analysis of English Summative Test for Second Grade Student of MAN 1 Tanete Bulukumba" Published Thesis: UIN Alauddin Makassar.

Indar. 2016. "Analyzing the Reliability and Validity of Reading Test at the First Grade SMA N 1 Pattalassang" Publish Thesis: State Islam University Alauddin: Makassar.
Laela, Khairuddin, 2019. "Analisis Kesukaran Soal, Daya Pembeda Dan Fungsi Distraktor". Jurnal Komunikasi Dan Pendidikan Islam: UIN Sunan Kalijaga: Yogyakarta.

Madsen, Marshal, J. Clark, and Hales. 1972. Essential of Testing. Philippines: Addisonweslev Publishing Inc.

Nurgiyanto. 2010. Penelitian Pembelajaran Bahasa; Berbasis Kompetensi. Yogyakarta: BPFE-Yogyakarta.

Purwanto N. 2012. Prinsip-Prisip dan Teknik Evaluasi Pengajaran. Bandung: PT Remaja Rosdakarya.

Sulistyorini. 2009. Evaluasi Pendidikan Dalam Meningkatkan Mutu Pendidikan. Yogyakarta: Teras.

Sumaningsih. 2015. "Kualitas Butir Soal UAS Bahasa Inggris Untuk Siswa MTs di Samarinda". Journal of; Pusat Kajian Bahasa dan Budaya: Surakarta.

Wiersma, William, and Stephen G. Jurs. 1990. Educational Measurement and Testing. German: A Division of Simon and Schuster, Inc.

## APPENDICES

## Appendix 1: Research Instrument



NAMA MAHASISWA : FIRMAN AHMAD FAIZAL
NIM/PRODI : 16.1300.092 / PENDIDIKAN BAHASA INGGRIS
FAKULTAS
: TARBIYAH
JUDUL
THE QUALITY OF ENGLISH TEACHER FINAL TEST FOR SENIOR HIGH SCHOOL AT THE SECOND GRADE SMA NEGERI 3 PAREPARE (ITEM ANALYSIS)

## THE ENGLISH TEACHER FINAL TEST

## LEMBAR UAS <br> BAHASA INGGRIS <br> SISWA

To collecting the data about the quality of English teacher final test, will use this final test. The test consist of 30 questions, the question are multiple choice. The question of the test made by teacher and it take from school question bank. This test is used to find the difficulty level, the effectiveness of the distractor, the validity, and how is the reliability of English teacher final test items

Name :
Class :

Read the following text! Then answer the question! Chose the best answer by crossing $(\mathrm{X})$ a, b, c, d, or e! Keep the questions sheet clean.

Text 1 (for numbers 1-4). Read the text carefully.
A major affective factor in second or subsequent language literacy development is age. As mentioned above, most learners in literate societies begin their formal literacy education in their first language when they start school at about the age of five. However, most second language learners do not begin to learn literacy in a second language until they are older than this (Hammond \& Derewianka 1999,p.30). some may be studying a second language at school or university while living in their own culture. Others may have migrated to a new culture where they must learn a second language in order to participate in the adopted society.

1. The passage above is ... text.
a. narrative
b. exposition
c. recount
d. news report
e. none of the options are correct
2. What is a major factor in learning second language to language literacy according to the writer?
a. intelligence
b. address
c. habits
d. age
e. experience
3. Some may be studying a second language at second or university while living in their own culture. The statement above is ....
a. a supporting idea to the writer point of view
b. a thesis the writer expresses for his/her point of view
c. an opposite ideas to counter his/her ideas
d. a theme the writer uses to support his/her ideas
e. none of the options are correct
4. Why does the writer mention the name Hammond \& Derewianka in his/her writing?
a. To show that $\mathrm{s} / \mathrm{he}$ reads more books
b. To tell readers that s/he has read the books
c. To mention the reader that $\mathrm{s} /$ he they are his/her friends
d. S/he wants to describe more facts about his/her ideas
e. S/he wants to support his/her point of view by quoting other ideas

## No. 5 to 9 refer to the text below.

"Taking care of the keyboard"
The keyboard is a roburts device used for inputting data on to your computer. As you type in information small letters are sent via the cable to the inside of the machine where they are organized into the words that you see. Keep your cable straight.

It is important that the keyboard cable has no kinks or that no object is placed on the cable to restrict the flow of letters to the machine. Care also must be taken that letters with sharp point do not become snared in the cable.

X's and Z's are the most common letters to be snared, and the result will be words appearing on the screen with these letters missing. O's and D's move the easiest through the cable.

To best take care of your keyboard cable stretch it out and straighten the kinks frequently. Letters are snared most frequently where the cable enters the machine, so be sure to straighten that section of cable on a weekly basis.

Be aware that any spelling mistakes may be the result of letters stuck in the cable rather than dyslexic fingers. Letters caught in the cable decay away quickly once the machine is turned off, so no lasting damage occurs in the buildup of snared letters.
5. The description of in the script includes....
a. selling your keyboard
b. cleaning your keyboard
c. washing your keyboard
d. none of the options are correct
e. all of the options are correct
6. What does the writer compared keyboard with?
a. small machine
b. tools
c. group of small letters
d. robust device
e. hardware
7. The most common letters to be snared are ...
a. X and W
b. X and A
c. X and Z
d. Z and A
e. A and X
8. To take care of your keyboard cable you should ....
a. straighten the kinks frequently
b. stretch the cable rarely
c. rolled the cable
d. let decay cable in use
e. none of the options are correct
9. Keyboard needs to be cleaned so that ....
a. dirt move away
b. keyboard works slowly
c. dirt and grit spread away
d. it smell good
e. none of the options are correct

Giant Australian Cuttlefish


## Location and habitat

The Giant Austarlian Cuttlefish (Sepia apama) is found in waters from less than a metre deep to probably around 100 m off Southern and eastern Australia.

## Description

Australian Giant Cuttlefish (a solitary creature) is by far the biggest type of cuttlefish growing up to a length of 1 meter and up to 3 kg . They have a big flat broad head with 2 large eyes with 8 tentacles (arms) and 2extendable feeding tentacles emerging from this head. The 2 feeding tentacles which are used for feeding retract into pouches between the bases of the third and fourth arm pairs. Along their sides they have thin fins.

## It breathes like fish through gils.

Internally they have a spongy chalk like internal shell (cuttlebone) whice gives the body its shape. The cuttlefish has three hearts, which pumps blue blood


## Movement

Slow movement is obtained by using its thin fins located along their sides. Propulsion is increased by using jets of water squirted out from a funnel. Australian Giant Cuttlefish swim eith their tentacles close to their body, and cuttlefish regulate their buoyancy by pumping water in and out of the gas filled cuttlebone to change the volume (and thus buoyancy) of the gas to enable them to maintain the depth they wish.

## Defense

Cuttlefish have the ability to change their colour to match their background, even the texture of its skin to be more like sand or seaweed and can push up fingers of soft skin to impersonate the shape of seaweeds or rubble.

They can also eject ink from ank ink sack just like an octopus to confus and disorientate enemies so it can escape.


## Feeding

They actively forage amongst seaweeds and sea grasses catshing shrimp, fish, prawns, crabs and other crustaceans. They use their 2 extendable feeding tentacles to snatch their catch, which is then mashed up by a hard "beak" (jaws).

## Breeding

Individuals breed from April to July. This is the time they come closer to the surface and thus can be observed A courting and mateship dance ends up with the male and female entwining their tentacles together. The eggs (hundreds)are then laid a short time later often in litle coral caves or on rocky reefs further south. The eggs take a couple of months to hatch.
e. report of information
11. To which depth of water can a giant cuttlefish live?
a. 450 meters
b. 350 meters
c. 250 meters
d. 150 meters
e. 100 meters
12. To which part of information criteria can you find about the weight of this giant cuttlefish?
a. habitat and location
b. breeding
c. feeding
d. description
e. movement
13. The followingtimes that are suitable for breeding of giant cuttlefish is ...
a. June
b. August
c. September
d. October
e. November
14. This food is common for giant cuttlefish, except ....
a. seaweeds
b. sea grasses
c. mud
d. shrimp
e. crabs
15. The passages above is best read for astudent of ....
a. Kindergarten
b. High school, science department
c. High school, technicaldepartment
d. High school, social department
e. None of the options are correct

## No. 16 to 20 refer to the text below

## Zenit beats Manchester United to win Super Cup

Zenit St. Petersburg beat Manchester United 2-1 to win the European super Cup for the first time on Friday. The match pitted the Champions League winner against the UEFA cup champ from Russia, which led 2-0 then held on.

Pavel Pogrebnyak put Zenit ahead a minute before halt-time from close range after Igor Denisov flicked on a corner from Alejandro Dominguez. Danny, signed for a Russian record euro 30 million (US $\$ 44$ million) from Dinamo Moscow, added the second goal in the 59th when he drifted past two defenders and beat goalkeeper Edwin Van der Sar with a low shot.

Nemanja Vidic pulled a goal back in the 73rd after good work by Carlos Tevez down the left, and substitute Jhon O'Shea almost equalized for United in the 88th when his header has tipped over by goalkeeper Vyacheslav Malafeev. United midfielder Paul Scholes was shown a second yellow card and sent off in injury time for punching the ball into the net.
16. The passage above is ... text.
a. narrative
b. exposition
c. recount
d. news report
e. report of information
17. Zenith first position on super cup is ...
a. for the first times
b. for the fifth times
c. for the second times
d. for the tenth times
e. for the third times
18. Who made the first score for Zenith?
a. Igor Denisov
b. Pavel Pogrebnyak
c. Alejandro Dominguez
d. Carlos Tevez
e. Danny
19. The goal back MU was the assist of ....
a. John O'shea
b. Carlos Tevez
c. Paul Scholes
d. Nemanja Vidic
e. None of the options
20. Who wrote news?
a. Mu press released officer
b. Zenith press released officer
c. Jerome Pugmire
d. The Associated Press
e. None of the options are correct

Andi : To begin with our discussion today, Let's have a look on Kompas today's headlines.

Mita : Yeah, That's right.
21. The underlined expression is used to express ....
a. closing discussion
b. opening a discussion
c. asking for input
d. clarifying ideas
e. offering thing

Sandy : $\underline{\text { So, what do you think about our food cleanliness? }}$
Tuty : That's ok, but I think we need to imporove the quality.
22. The underlined expression is used for expressing ....
a. closing discussion
b. opening a discussion
c. asking for input
d. clarifying ideas
e. giving order

Arman : Well, we need to buy new sport equipment. They are all out of date already.

Director: Hmm ... that sounds like a good idea.
23. The underlined expression is used to ....
a. clarifying ideas
b. asking for clarification
c. interrupting politely
d. responding to idea/opinion
e. showing pleasure
24. Which expression below is to express satisfying?
a. I am bored, I need something satisfying .
b. All want the eats doesn't satisfy his starve.
c. I am really satisfied with your work.
d. At first, spell your name then me your phone numbers.
e. I am dissatisfied.
25. I thanked the women ... helped her
a. who
b. whose
c. whom
d. which
e. where
26. The book .... Is on the table is mine
a. who
b. whose
c. whom
d. which
e. where
27. The movie .... Saw last night wasn't very good.
a. whom
b. where
c. that
d. whose
e. who
28. I know the man ... bicycle was stolen.
a. where
b. whose
c. who
d. that
e. which
29. I'II never forget the day ... I met you.
a. where
b. whose
c. when
d. which
e. who
30. The building ... he live is very old.
a. who
b. whose
c. when
d. where
e. whom

## SOAL UAS BAHASA INGGRIS KELAS XI

happy hunting

Name: *
Andi. Nuthidayah Sn Ramacthan



1. The passage below is - text.

Text 1 ifer numbers 1-4). Reail the tent carchully,


 ayr if fine. However, ment secoed layguge leanem do mot legie br leant Stenc'y is

 own suhume Ohen mag have migneed in a new cihure where they mast lean a sennal language in onder io participute in the adopted seciefy.

O $\quad$ narrative
(9) It expesition

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O d. news repart
O exene of the options are carrect




## Appendix 2：Students＇Score

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| $\frac{x}{\frac{x}{y}}$ | $\frac{\frac{x}{y}}{y}$ | $\frac{x}{y}$ | $\stackrel{x}{\frac{x}{y}}$ | $\frac{x}{u}$ | $\left\|\frac{x}{3}\right\|$ | $\frac{x}{3}$ | $\frac{x}{3}$ | $\left.\frac{x}{7} \right\rvert\,$ | $\frac{x}{5}$ | $\frac{\overline{7}}{7}$ | $\left\lvert\, \begin{aligned} & \frac{x}{7} \\ & \frac{y}{3} \\ & r \end{aligned}\right.$ | $\left.\begin{array}{\|c} \frac{x}{5} \\ \frac{y}{3} \\ \hline \end{array} \right\rvert\,$ | $\frac{2}{5}$ | $\frac{\frac{x}{5}}{\frac{3}{3}}$ | $\begin{aligned} & \frac{x}{5} \\ & \frac{y}{3} \\ & n \end{aligned}$ | $\begin{aligned} & \frac{x}{n} \\ & \frac{x}{3} \\ & r \end{aligned}$ | $\begin{aligned} & \frac{x}{7} \\ & \frac{y}{3} \\ & n \end{aligned}$ | $\begin{aligned} & \frac{x}{5} \\ & \frac{x}{3} \\ & \hline \end{aligned}$ | $\begin{array}{\|l\|l\|} \frac{x}{y} \\ y \\ r \end{array}$ | $\frac{\frac{x}{2}}{\frac{2}{2}}$ | $\begin{aligned} & \frac{x}{y} \\ & \frac{y}{3} \\ & \hline \end{aligned}$ | $\frac{x}{\frac{x}{y}}$ | $\frac{x}{3}$ | $\left.\begin{aligned} & \frac{x}{5} \\ & \frac{3}{3} \\ & - \end{aligned} \right\rvert\,$ | $\begin{aligned} & \frac{x}{3} \\ & \frac{3}{3} \\ & N \end{aligned}$ | $\frac{\mathrm{x}}{\mathbf{x}}$ | $\frac{x}{5}$ | $\begin{aligned} & \frac{x}{7} \\ & \frac{x}{2} \\ & n \end{aligned}$ | $\frac{\frac{x}{3}}{\frac{3}{3}}$ | $\begin{aligned} & \frac{x}{3} \\ & 3 \\ & n \\ & n \end{aligned}$ | $\frac{\frac{x}{3}}{3}$ | 즐 |
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## Appendix 3: Data Analysis



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| $8$ | T | \％ | \％ |  |  |  | $\checkmark$ | $\checkmark$ | － | \％ | N | 0 | \％ | $0^{\circ}$ | 0 | O | $\sim$ |  | n | 0 | $a$ |
| $\underset{\sharp}{\boxed{4}}$ | N | \％ | \％ |  | 0 |  | $\checkmark$ | $v$ | O | W | \％ | $\bigcirc 0$ | － | \％ 0 | － | － | N |  | N | － | － |
| 遭 | N | $\%$ | \％ |  | 16 |  | － | － | － | \％ | \％ | 0 |  | 0 | － | － | N |  | $N$ | $\sim$ | － |
| $\underbrace{}_{\underset{\sim}{\infty}}$ | \％ | \％ | \％ | \％ | N | 0 | － | $\bigcirc$ | u | \％ | C | $\square 0$ | N | Yo | －$\infty$ | ＋ | － |  | N | $\sim$ | － |
| $\begin{array}{\|l} 0 \\ \sim \\ \hline \end{array}$ | N | N | N | \％ | T | $\bigcirc$ | － 0 | $\bigcirc$ | － | \％ | 15 | $\bigcirc$ | W | 0 | － | － | N |  | N | 0 | － |
| $\begin{array}{\|l\|} \hline \infty \\ \dot{\sim} \\ \hline \end{array}$ | N | N | N | T | N | 0 | －$\infty$ | － | － | N | N | － | N | ［ $\infty$ | O | － | N | － | n | － | － |
| $\begin{array}{\|l\|} \hline 0 \\ \hline 0 \\ \hline \end{array}$ | N | \％ | W | \％ | O | 0 | － 0 | － | － | \％ | $\check{\square}$ | － | 6 | － | O | 。 | N |  | N | $\sim$ | － |
| $\begin{array}{\|l} 08 \\ 0 \\ \hline 0 \end{array}$ | N | N | T | \％ | N | － | － | － | － | \％ | \％ | $\checkmark$ | $\bigcirc$ | － | 0 |  | N |  | N | 0 | － |
| 备 | N | N | N | T | N | 0 | － | － | u | \％ | C | $\bigcirc$ | － | \％$\infty$ | O | － | － |  | － | － | － |
| 货 | － | － | － |  | － | － | 0 | － | － | － | 。 | － | － | －$\infty$ | 0 |  | － |  | － | － | － |
| $\stackrel{0}{\mathrm{~N}}$ | N | N | N |  | N | O | － | － | － | N | N | $\checkmark$ | \％ | \％ 0 | 0 | O | N |  | N | $\sim$ | － |
| 药 | N | \％ | \％ | \％ | \％ | \％ 0 | $\bigcirc$ | － | － | \％ | \％ | 0 | \％ | \％ | － | 0 | N |  | O | － | － |
| N | N | 令 | T | \％ | \％ | v | － | $\checkmark$ | － | \％ | T | $\checkmark$ | \％ | 0 | $0 \infty$ | O | N |  | n | 0 | － |
| $\begin{array}{\|l\|l} \infty \\ 0 \\ \hline \end{array}$ | N | \％ | T | \％ | N | \％ | O | － | － | \％ | 8 | \％ 0 |  | $0 \infty$ | － | 0 | N |  | N | 0 | － |
| 花 | N | \％ | \％ | \％ | N | O | － | － | － | \％ | \％ | $\bigcirc \bigcirc$ | N | 0 | － | － | － |  | N | － | － |
| $\underset{\sim}{\infty}$ | N | N | N | ก | \％ | $\bigcirc$ | －$\infty$ | － | － | \％ | \％ | 6 |  | \％ 0 | O | － | 0 |  | － | 0 | － |
| $\begin{aligned} & 10 \\ & 0 \\ & \hline 0 \end{aligned}$ | N | N | N | ¢ | O | $\checkmark$ | $\checkmark$ | $\checkmark$ | un | \％ | N | \％ 0 |  | \％ | 0 | 0 | w | ， | N | － | － |
| $\begin{array}{\|l\|l} 0 \\ 0 \\ 0 \\ \hline 0 \end{array}$ | N | \％ | N | \％ | 0 | $\sim$ | 40 | $\checkmark$ | － | N | \％ | $\bigcirc$ |  | $\bigcirc$ | －$\infty$ | － | N |  | － | $\bigcirc$ | － |
| 怣 | N | N | N | \％ | N | 0 | － | 0 | － | \％ | \％ | \％ | N | 0 | － | － | － |  | N | $\sim$ | の |
| 令 | N | N | N | \％ | O | 0 | 0 | 0 | － | N | N | $\bigcirc 0$ |  | $\infty$ | $\infty$ | － | O |  | － | － | － |
| $\begin{array}{\|l} \hline 08 \\ \hline 0 \\ \hline \end{array}$ | N | N | N | $\bigcirc$ | N | 0 | － | － | $\checkmark$ | \％ | $\bigcirc$ | $\bigcirc$ | N | O | ，${ }^{\infty}$ | O | \％ | － | N | 0 | － |
| $$ | N | N | T | N | \％ | $\bigcirc$ | 0 | － | － | \％ | 5 | 5 | E | 0 | 0 |  | N |  | N | 0 | － |
| ¢ | \％ | \％ | N | \％ | N | 0 | － 0 | － | － | N | \％ | \％ 0 | N | \％ 0 | － | 0 | $\sim$ | $\checkmark$ | N | － | － |
| 椷 | \％ | N | N | \％ | \％ | 0 | － $0^{\infty}$ | － | － | $\bigcirc$ | \％ | $00^{\circ}$ |  | $\bigcirc$ | － | － | O | － | T | 0 | $\sigma$ |
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| \％ | \％ | \％ | T | T | O |  | $\checkmark$ |  | － | \％ | \％ | \％ 0 |  | \％ 0 | － |  | N | 0 | N | O | $a$ |
| 哭 | N | N | N | \％ | \％ | O | －${ }^{\infty}$ | － | － | \％ | \％ | 6 | W | \％ | － | － | N | － | N | $\sim$ | － |
| 嗒 | N | N | \％ | \％ | \％ | $\bigcirc$ | $\checkmark$ | $\checkmark$ | － | \％ | \％ | \％ 0 |  | \％ 0 | 0 | O | N | 0 | O | 0 | － |
| \％ | N | \％ | \％ | \％ | \％ |  | －$\infty$ | － | － | \％ | \％ | 0 |  | 0 | 0 | $\infty$ | N | － | n | $\sim$ | a |
| － | \％ | \％ | N | \％ | 16 | 10 | $\bigcirc{ }^{\circ}$ | ${ }^{\circ}$ | u | \％ | \％ | $0^{\circ}$ | S | $0 \times$ | O | $\infty$ | N | － | n | 0 | － |


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| N | ＂ | 蒿 | N | H | $\stackrel{+}{+}$ | $\rightarrow$ | $\rightarrow$ | $\stackrel{ }{-}$ | － | $\stackrel{ }{ }$ | － | O | $\rightarrow$ | $\stackrel{ }{-}$ | － | $\stackrel{ }{-}$ | 0 | $\bigcirc$ | $\bullet$ | － | － | O | － | － | － | 0 | － | $\sim$ |
| E | ＂ | 爻 | A | ＊ | $\rightarrow$ |  | $\stackrel{\rightharpoonup}{*}$ | － | $\vdash$ | － | $\cdots$ | $\cdots$ | $\square$ | $\cdots$ | O | － | 0 | 0 | － | － |  | － | － | $\bigcirc$ | － | ， | $\cdots$ | － |
| w | ＂ | 悥 | $\underset{\sim}{\sim}$ | U | － |  | $\rightarrow$ | $\cdots$ | $\stackrel{\sim}{*}$ | － | $\stackrel{-}{\square}$ | O | － | $\sim$ | － | － | － | $\stackrel{+}{ }$ | － | $\stackrel{+}{+}$ |  | － | 0 | － | － | － | $\stackrel{ }{+}$ | $\cdots$ |
| 出 | ＂ | 专 | u | n |  |  |  | $\cdots$ | － | － | － | － | H | $\stackrel{+}{+}$ | $\stackrel{+}{+}$ | $\stackrel{-}{+}$ | 0 | $\bigcirc$ | － | － |  | － | $\stackrel{+}{+}$ | － | 1 | － | $\cdots$ | － |
| \％ | ＂ | 区 | \％ | \％ |  |  |  | － | $\bigcirc$ | － | 0 | 0 | $\stackrel{ }{+}$ | $\rightarrow$ | － | $\stackrel{+}{+}$ | － | － | － | 0 |  | 0 | － | $\bigcirc$ | － | － | － | － |
| \％ | ＂ | $\underset{\sim}{\text { ® }}$ | \％ | O | － |  |  | － | o | $\bullet$ | 0 | － | － | － | － | $\stackrel{-}{-}$ | $\stackrel{ }{-}$ | $\rightarrow$ | － | $\stackrel{ }{+}$ |  | － | － | － | $\vdash$ | － | $\stackrel{ }{-}$ | － |
| \％ | ＂ | $\underset{\sim}{\sim}$ | W | U |  |  | － | － | o | － | － | － | $1-$ | － | H | － | 0 | － | － | － |  | － | － | － | － | O | － | $\cdots$ |
| ※ | ＂ | 入 | \＃ | \％ |  |  | $\rightarrow$ | ， | － | － | － | － | － | $\mapsto$ | － | $\rightarrow$ | － | $\stackrel{+}{+}$ | $\bigcirc$ | $\stackrel{ }{+}$ |  | $\cdots$ | － | － | 0 | － | $\cdots$ | － |
| W | ＂ | $\underset{\sim}{\text { ¢ }}$ | W | H |  |  |  | － | － | 1 | － | O | H | $\cdots$ | O | $\stackrel{-}{+}$ | － | $\stackrel{+}{+}$ | － | $\stackrel{-}{+}$ |  | － | － | $\vdash$ | － | $\bigcirc$ | $\sim$ | － |
| w | ＂ | ర | W | H |  |  | $\sim$ | H | － | $\bigcirc$ | － | O | － | 1 | － | － | － | － | － | － |  | $\checkmark$ | 0 | $\vdash$ | － | － | $\cdots$ | － |
| \％ | ＂ | 区 | 出 | 号 | － |  | $\square$ | $\stackrel{ }{-}$ | $\mapsto$ | － | $\checkmark$ | － | $\stackrel{\square}{-}$ | $\stackrel{+}{ }$ | － | $\cdots$ | － | ， | － | $\stackrel{+}{+}$ |  | － | － | － | － | － | $\stackrel{ }{+}$ | $\bullet$ |
| \％ | ＂ | ช | 曻 | 宸 | － | $\sim \sim$ | $\sim$ | － | $\bigcirc$ | $\sim$ | － | － | － | $\sim$ | $\stackrel{+}{ }$ | $-$ | － | － | － | $-$ |  | － | $\stackrel{ }{-}$ | － | － | － | $\checkmark$ | － |
| \％ | ＂ | 区 | \％ | \％ |  |  |  | $\cdots$ | $\cdots$ | － | $\bullet$ | O | － | $\cdots$ | － | $\sim$ | 0 | $\bigcirc$ | － | $\cdots$ |  | － | 0 | － | － | $\bigcirc$ | $\stackrel{ }{-}$ | 0 |
| \％ | ＂ | 厓 | 傢 | \％ |  |  | $\stackrel{+}{\square}$ | $\sim$ | － | $\cdots$ | － | － | $\square$ | $\sim$ | － | $\stackrel{-}{-}$ | － | － | － | － |  | － | $\stackrel{ }{+}$ | $\vdash$ | － | $\bullet$ | $\stackrel{ }{-}$ | － |
| W | ＂ | Х | u | U | － | $\cdots$ | ， | $\cdots$ | － | 0 | $\bigcirc$ |  | － | $\stackrel{ }{ }$ | － | $\stackrel{ }{-}$ | $\cdots$ | － | － | － |  | － | － | － | － | － | － | $\bigcirc$ |

## Appendix 4: Difficulty Level Analysis

## DIFFICULTY LEVEL ANALYSIS

| Nomor <br> Soal | Total (B) | Jumlah Ssiswa <br> $(\mathbf{J S})$ | $\mathbf{P}=\mathbf{B} / \mathbf{J S}$ |
| :---: | :---: | :---: | :---: |
| 1 | 38 | 59 | 0,64 |
| 2 | 39 | 59 | 0,66 |
| 3 | 38 | 59 | 0,64 |
| 4 | 34 | 59 | 0,57 |
| 5 | 33 | 59 | 0,55 |
| 6 | 35 | 59 | 0,59 |
| 7 | 36 | 59 | 0,61 |
| 8 | 38 | 59 | 0,64 |
| 9 | 36 | 59 | 0,61 |
| 10 | 25 | 59 | 0,42 |
| 11 | 38 | 59 | 0,64 |
| 12 | 36 | 59 | 0,61 |
| 13 | 40 | 59 | 0,67 |
| 14 | 36 | 59 | 0,61 |
| 15 | 36 | 59 | 0,61 |
| 16 | 32 | 59 | 0,54 |
| 17 | 41 | 59 | 0,69 |
| 18 | 37 | 59 | 0,62 |
| 19 | 35 | 59 | 0,59 |
| 20 | 30 | 59 | 0,51 |
| 21 | 39 | 59 | 0,66 |
| 22 | 32 | 59 | 0,54 |
| 23 | 34 | 59 | 0,57 |
| 24 | 37 | 59 | 0,62 |
| 25 | 37 | 59 | 0,62 |
| 26 | 35 | 59 | 0,59 |
| 27 | 36 | 59 | 0,61 |
| 28 | 34 | 59 | 0,57 |
| 29 | 38 | 59 | 0,64 |
| 30 | 37 | 59 | 0,62 |
|  |  |  |  |

Notes: B = Total the correct answer
JS = Number of participants
$\mathrm{P}=$ Difficulty level

## Appendix 5: Discrimination Analysis

## DISCRIMINATION ANALYSIS

| Top Group JA |  | Score | Lower Group JB |  | Score |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Andi Nurhidayah S.R. | $:$ | 100 | Rifka Anugrah | $:$ | 66,66 |
| Khusnul Khotimah Aranda | $:$ | 100 | Mila Apriliana | $:$ | 60 |
| Sheva Apriliyanti J | $:$ | 100 | Sitti Aisyah | $:$ | 56,66 |
| Adi Arham Haris | $:$ | 100 | Reza Alya Metapia | $:$ | 53,33 |
| Reski Amalia Putri Yasin | $:$ | 100 | Muhammad Reski A | $:$ | 50 |
| Uswatun Hasanah | $:$ | 100 | Alfaiza | $:$ | 30 |
| Andi Try Suci Ramadhani | $:$ | 100 | Aliya | $:$ | 26,66 |
| Ina Mawarni | $:$ | 100 | Monica | $:$ | 26,66 |
| Sukma Ayu | $:$ | 100 | Efa Arpianti | $:$ | 26,66 |
| Aulia Julianty Mansur | $:$ | 100 | Suhadi Syahisna Bayu | $:$ | 26,66 |
| Dewi Saputri | $:$ | 100 | Muhammad Resky D P | $:$ | 26,66 |
| Suci Nurfadilla | $:$ | 100 | Muhammad Rival | $:$ | 26,66 |
| Putri Melia K | $:$ | 100 | Muhammad Syakir Amin | $:$ | 26,66 |
| Putri Maharani | $:$ | 96,66 | Muhammad Rezky Akhzani | $:$ | 26,66 |
| Muhaymin | $:$ | 96,66 | Rahmat | $:$ | 23,33 |
| Sateriani | $:$ | 96,66 | Elvierha Damayanthy P | $:$ | 23,33 |
| Indri Afni Ayu | $:$ | 96,66 | Dicky Joehan | $:$ | 23,33 |
| Andi Rhiny | $:$ | 96,66 | Muhammad Yusril | $:$ | 23,33 |
| Destalia | $:$ | 96,66 | Tiara | $:$ | 23,33 |
| Lusiana | $:$ | 96,66 | Dea Amalia | $:$ | 23,33 |
| Nabila Harun | $:$ | 96,66 | Muhammad Fauzan Arya | $:$ | 23,33 |
| Indra Rezky Rauf | $:$ | 93,33 | Muhammad Ade Rezky | $:$ | 23,33 |
| Nur Fajriyani Rustan | $:$ | 90 | Ariani | $:$ | 23,33 |
| Nurul Qalbi Aryati | $:$ | 83,33 | Muhammad Isra Asrafil I | $:$ | 20 |
| Osma Iyad Al Ghozali | $:$ | 83,33 | Asril | $:$ | 20 |
| Very Zalman Ewa | $:$ | 80 | Zalina Sari | $:$ | 20 |
| Aryadi | $:$ | 76,66 | Syahrul Ramadhan Tahir | $:$ | 20 |
| Selfya Saputri | $:$ | 73,33 | Muhammad Fauzan | $:$ | 16,66 |
| Mutmainah Gustan | $:$ | 70 | Muh. Khairil | $:$ | 10 |


| Nomo Butir Item | Ba | Bb | Ja | Jb | $\mathrm{Pa}=\mathrm{Ba} / \mathrm{J} \mathbf{a}$ | $\mathbf{P b}=\mathbf{B b} / \mathbf{J b}$ | $\mathrm{D}=\mathrm{Pa}-\mathrm{Pb}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | 29 | 9 | 29 | 29 | 1,00 | 0,31 | 0,69 |
| 2 | 29 | 10 | 29 | 29 | 1,00 | 0,34 | 0,66 |
| 3 | 29 | 9 | 29 | 29 | 1,00 | 0,31 | 0,69 |
| 4 | 28 | 6 | 29 | 29 | 0,96 | 0,21 | 0,75 |
| 5 | 29 | 4 | 29 | 29 | 1,00 | 0,13 | 0,87 |
| 6 | 27 | 8 | 29 | 29 | 0,93 | 0,27 | 0,66 |
| 7 | 29 | 7 | 29 | 29 | 1,00 | 0,24 | 0,76 |
| 8 | 29 | 9 | 29 | 29 | 1,00 | 0,31 | 0,69 |
| 9 | 26 | 10 | 29 | 29 | 0,89 | 0,34 | 0,55 |
| 10 | 19 | 6 | 29 | 29 | 0,65 | 0,21 | 0,44 |
| 11 | 28 | 10 | 29 | 29 | 0,96 | 0,34 | 0,62 |
| 12 | 28 | 8 | 29 | 29 | 0,96 | 0,27 | 0,69 |
| 13 | 29 | 11 | 29 | 29 | 1,00 | 0,37 | 0,63 |
| 14 | 29 | 7 | 29 | 29 | 1,00 | 0,24 | 0,76 |
| 15 | 28 | 8 | 29 | 29 | 0,96 | 0,27 | 0,69 |
| 16 | 26 | 6 | 29 | 29 | 0,89 | 0,21 | 0,68 |
| 17 | 28 | 13 | 29 | 29 | 0,96 | 0,44 | 0,52 |
| 18 | 28 | 9 | 29 | 29 | 0,96 | 0,31 | 0,65 |
| 19 | 27 | 8 | 29 | 29 | 0,93 | 0,27 | 0,66 |
| 20 | 26 | 4 | 29 | 29 | 0,89 | 0,13 | 0,76 |
| 21 | 29 | 10 | 29 | 29 | 1,00 | 0,34 | 0,66 |
| 22 | 28 | 4 | 29 | 29 | 0,96 | 0,13 | 0,83 |
| 23 | 27 | 7 | 29 | 29 | 0,93 | 0,24 | 0,69 |
| 24 | 25 | 12 | 29 | 29 | 0,86 | 0,41 | 0,45 |
| 25 | 26 | 11 | 29 | 29 | 0,89 | 0,37 | 0,52 |
| 26 | 22 | 13 | 29 | 29 | 0,75 | 0,44 | 0,31 |
| 27 | 26 | 10 | 29 | 29 | 0,89 | 0,34 | 0,55 |
| 28 | 26 | 8 | 29 | 29 | 0,89 | 0,27 | 0,62 |
| 29 | 29 | 9 | 29 | 29 | 1,00 | 0,31 | 0,69 |
| 30 | 28 | 9 | 29 | 29 | 0,96 | 0,31 | 0,65 |

Notes: $\mathrm{Ba}=$ The number of participants in the upper group who answered correctly the test item.
$\mathrm{Bb}=$ The number of participants in the lower group who answered correctly the test item.
$\mathrm{Ja}=$ The number of participant in the upper group.
$\mathrm{Jb}=$ The number of a participant in the lower group.
$\mathrm{Pa}=$ The proportion of students in the upper group who answered the test item correctly.
$\mathrm{Pb}=$ The proportion of students in the lower group who answered the test item correctly.

## Appendix 6: Effectiveness of Distractor Analysis

EFFECTIVENESS OF DISTRACTOR ANALYSIS

| Test <br> Item | Option |  |  |  |  | Keterangan |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | A | B | C | D | E |  |
| 1 | 12 | (38) | 6 | 1 | 1 | ( ): Kunci Jawaban |
| 2 | 10 | 5 | 1 | (39) | 1 |  |
| 3 | (39) | 11 | 6 | 2 | 0 |  |
| 4 | 7 | 5 | 5 | 7 | (34) |  |
| 5 | 9 | 11 | 5 | (33) | 0 |  |
| 6 | 6 | 5 | 10 | (35) | 2 |  |
| 7 | 8 | 9 | (36) | 3 | 2 |  |
| 8 | (39) | 4 | 7 | 5 | 3 |  |
| 9 | (36) | 3 | 9 | 6 | 4 |  |
| 10 | 12 | 4 | 3 | 7 | (32) |  |
| 11 | 3 | 4 | 6 | 7 | (38) |  |
| 12 | 9 | 4 | 6 | (35) | 3 |  |
| 13 | (39) | 5 | 6 | 4 | 4 |  |
| 14 | 9 | 8 | (37) | 3 | 1 |  |
| 15 | 2 | (37) | 9 | 6 | 4 |  |
| 16 | 9 | 9 | 6 | (32) | 2 |  |
| 17 | (42) | 4 | 3 | 5 | 4 |  |
| 18 | 7 | (32) | 4 | 5 | 5 |  |
| 19 | 7 | (35) | 3 | 10 | 3 |  |
| 20 | 5 | 13 | (30) | 5 | 5 |  |
| 21 | 6 | (40) | 6 | 4 | 2 |  |
| 22 | 8 | 6 | (33) | 4 | 6 |  |
| 23 | (34) | 7 | 5 | 9 | 3 |  |
| 24 | 9 | 5 | (36) | 6 | 2 |  |
| 25 | (35) | 7 | 7 | 5 | 4 |  |
| 26 | 13 | 2 | 3 | (32) | 8 |  |
| 27 | 7 | 3 | (36) | 7 | 5 |  |
| 28 | 8 | (34) | 8 | 5 | 3 |  |
| 29 | 7 | 4 | (38) | 7 | 2 |  |
| 30 | 7 | 3 | 7 | (37) | 3 |  |


| PD/JSX100 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| A | B | C | D | E |
| 20,33 | 38 | 10,1 | 1,6 | 1,6 |
| 16,9 | 8,47 | 1,6 | 39 | 1,6 |
| 39 | 18,64 | 10,16 | 3,38 | 0 |
| 11,86 | 8,47 | 8,47 | 11,86 | 34 |
| 15,25 | 18,47 | 8,47 | 33 | 0 |
| 10,16 | 8,47 | 16,94 | 35 | 3,38 |
| 13,55 | 15,25 | 36 | 5,08 | 3,38 |
| 39 | 6,77 | 11,86 | 8,47 | 5,08 |
| 36 | 5,08 | 15,25 | 10,16 | 6,77 |
| 20,33 | 6,77 | 5,08 | 11,86 | 32 |
| 5,08 | 6,77 | 10,16 | 11,86 | 38 |
| 15,25 | 6,77 | 10,16 | 35 | 5,08 |
| 39 | 8,47 | 10,16 | 6,77 | 6,77 |
| 15,25 | 13,55 | 37 | 5,08 | 1,6 |
| 3,38 | 37 | 15,25 | 10,16 | 6,77 |
| 15,25 | 15,25 | 10,16 | 32 | 3,38 |
| 42 | 6,77 | 5,08 | 8,47 | 6,77 |
| 11,86 | 32 | 6,77 | 8,47 | 8,47 |
| 11,86 | 35 | 5,08 | 16,9 | 5,08 |
| 8,47 | 22,03 | 30 | 8,47 | 8,47 |
| 10,16 | 40 | 10,16 | 6,77 | 3,38 |
| 13,55 | 10,16 | 33 | 6,77 | 10,16 |
| 34 | 11,86 | 8,47 | 15,25 | 5,08 |
| 15,25 | 8,47 | 36 | 10,16 | 3,38 |
| 35 | 11,86 | 11,86 | 8,47 | 6,77 |
| 22,03 | 3,38 | 5,08 | 32 | 13,55 |
| 11,86 | 5,08 | 36 | 11,86 | 8,47 |
| 13,55 | 34 | 13,55 | 8,47 | 5,08 |
| 11,86 | 6,77 | 38 | 11,86 | 3,38 |
| 11,86 | 5,08 | 11,86 | 37 | 5,08 |

Notes: PD $=$ The number of students in the top group and the lower group who choose the distractor $\mathrm{JS}=$ The number of student

## Appendix 7: Validity Analysis

VALIDITY ANALYSIS

| Item | Correlation | Table | Status |
| :---: | :---: | :---: | :---: |
| 1 | 0,734 | 0,678 | Valid |
| 2 | 0,766 | 0,678 | Valid |
| 3 | 0,695 | 0,678 | Valid |
| 4 | 0,714 | 0,678 | Valid |
| 5 | 0,834 | 0,678 | Valid |
| 6 | 0,671 | 0,678 | Invalid |
| 7 | 0,871 | 0,678 | Valid |
| 8 | 0,773 | 0,678 | Valid |
| 9 | 0,674 | 0,678 | Invalid |
| 10 | 0,532 | 0,678 | Invalid |
| 11 | 0,744 | 0,678 | Valid |
| 12 | 0,761 | 0,678 | Valid |
| 13 | 0,685 | 0,678 | Valid |
| 14 | 0,808 | 0,678 | Valid |
| 15 | 0,743 | 0,678 | Valid |
| 16 | 0,788 | 0,678 | Valid |
| 17 | 0,625 | 0,678 | Invalid |
| 18 | 0,755 | 0,678 | Valid |
| 19 | 0,694 | 0,678 | Valid |
| 20 | 0,798 | 0,678 | Valid |
| 21 | 0,752 | 0,678 | Valid |
| 22 | 0,855 | 0,678 | Valid |
| 23 | 0,748 | 0,678 | Valid |
| 24 | 0,536 | 0,678 | Invalid |
| 25 | 0,571 | 0,678 | Invalid |
| 26 | 0,399 | 0,678 | Invalid |
| 27 | 0,639 | 0,678 | Invalid |
| 28 | 0,643 | 0,678 | Invalid |
| 29 | 0,765 | 0,678 | Valid |
| 30 | 0,717 | 0,678 | Valid |
|  |  |  |  |

$$
\begin{aligned}
& r_{x y}=\mu \Sigma x y-\left(\sum x\right)(\Sigma x) \\
& \sqrt{\left[N \Sigma x^{2}-\left(\sum x\right)^{2}\right]\left[N \Sigma y^{2}-\left(\sum y\right)^{2}\right]} \\
&=58.909-(38)(1071) \\
& \sqrt{\left[58.38-(38)^{2}\right]\left[58.25853-(1071)^{2}\right]} \\
&=\frac{52,722-40.698}{\sqrt{[2,209-1444][1,494,479-1,147.041]}} \\
&=\frac{12.024}{\sqrt{[760][352,433}} \\
&=\frac{12,029}{267,899,090} \\
&=\frac{12,029}{16,366.09}=0,7394
\end{aligned}
$$

## Appendix 8: Reliability Analysis

## RELIABILITY ANALYSIS

| No | Nama | Skor | X | Y | $\mathrm{X}^{2}$ | $\mathbf{Y}^{\mathbf{2}}$ | XY |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | Andi Nurhidayah S.R. | 30 | 15 | 15 | 225 | 225 | 225 |
| 2 | Khusnul Khotimah Aranda | 30 | 15 | 15 | 225 | 225 | 225 |
| 3 | Sheva Apriliyanti J | 30 | 15 | 15 | 225 | 225 | 225 |
| 4 | Muhammad Isra Asrafil I | 6 | 2 | 4 | 4 | 16 | 8 |
| 5 | Adi Arham Haris | 30 | 15 | 15 | 225 | 225 | 225 |
| 6 | Aliya | 8 | 2 | 6 | 4 | 36 | 12 |
| 7 | Monica | 8 | 4 | 4 | 16 | 16 | 16 |
| 8 | Reski Amalia Putri Yasin | 30 | 15 | 15 | 225 | 225 | 225 |
| 9 | Asril | 6 | 3 | 3 | 9 | 9 | 9 |
| 10 | Alfaiza | 9 | 4 | 5 | 16 | 25 | 20 |
| 11 | Uswatun Hasanah | 30 | 15 | 15 | 225 | 225 | 225 |
| 12 | Muh. Khairil | 3 | 1 | 2 | 1 | 4 | 2 |
| 13 | Reza Alya Metapia | 16 | 8 | 8 | 64 | 64 | 64 |
| 14 | Andi Try Suci Ramadhani | 30 | 15 | 15 | 225 | 225 | 225 |
| 15 | Ina Mawarni | 30 | 15 | 15 | 225 | 225 | 225 |
| 16 | Muhammad Reski A | 15 | 9 | 6 | 81 | 36 | 54 |
| 17 | Zalina Sari | 6 | 2 | 4 | 4 | 16 | 8 |
| 18 | Putri Maharani | 29 | 15 | 14 | 225 | 196 | 210 |
| 19 | Sukma Ayu | 30 | 15 | 15 | 225 | 225 | 225 |
| 20 | Nurul Qalbi Aryati | 25 | 14 | 11 | 196 | 121 | 154 |
| 21 | Mutmainah Gustan | 21 | 10 | 11 | 100 | 121 | 110 |
| 22 | Sitti Aisyah | 17 | 8 | 9 | 64 | 81 | 72 |
| 23 | Nur Fajriyani Rustan | 27 | 14 | 13 | 196 | 169 | 182 |
| 24 | Mila Apriliana | 18 | 10 | 8 | 100 | 64 | 80 |
| 25 | Selfya Saputri | 22 | 12 | 10 | 144 | 100 | 120 |
| 26 | Aulia Julianty Mansur | 30 | 15 | 15 | 225 | 225 | 225 |
| 27 | Efa Arpianti | 8 | 5 | 3 | 25 | 9 | 15 |
| 28 | Rahmat | 7 | 5 | 2 | 25 | 4 | 35 |
| 29 | Dewi Saputri | 30 | 15 | 15 | 225 | 225 | 225 |
| 30 | Very Zalman Ewa | 24 | 14 | 10 | 196 | 100 | 140 |
| 31 | Indra Rezky Rauf | 28 | 14 | 14 | 196 | 196 | 196 |
| 32 | Elvierha Damayanthy P | 7 | 3 | 4 | 9 | 16 | 12 |
| 33 | Dicky Joehan | 7 | 4 | 3 | 16 | 9 | 12 |


| 34 | Rifka Anugrah | 20 | 10 | 10 | 100 | 100 | 100 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 35 | Suci Nurfadilla | 30 | 15 | 15 | 225 | 225 | 225 |
| 36 | Muhammad Yusril | 7 | 6 | 1 | 36 | 1 | 6 |
| 37 | Suhadi Syahisna Bayu | 8 | 7 | 1 | 49 | 1 | 7 |
| 38 | Syahrul Ramadhan Tahir | 6 | 4 | 2 | 16 | 4 | 8 |
| 39 | Tiara | 7 | 6 | 1 | 36 | 1 | 6 |
| 40 | Osma Iyad Al Ghozali | 25 | 14 | 11 | 196 | 121 | 154 |
| 41 | Dea Amalia | 7 | 6 | 1 | 36 | 1 | 6 |
| 42 | Aryadi | 23 | 12 | 11 | 144 | 121 | 132 |
| 43 | Muhammad Resky D P | 8 | 3 | 5 | 9 | 25 | 15 |
| 44 | Muhammad Rival | 8 | 3 | 5 | 9 | 25 | 15 |
| 45 | Muhammad Syakir Amin | 8 | 3 | 5 | 9 | 25 | 15 |
| 46 | Muhaymin | 29 | 15 | 14 | 225 | 196 | 210 |
| 47 | Muhammad Fauzan Arya | 7 | 5 | 2 | 25 | 4 | 10 |
| 48 | Sateriani | 29 | 15 | 14 | 225 | 196 | 210 |
| 49 | Indri Afni Ayu | 29 | 15 | 14 | 225 | 196 | 210 |
| 50 | Muhammad Fauzan | 5 | 2 | 3 | 4 | 9 | 6 |
| 51 | Muhammad Ade Rezky | 7 | 3 | 4 | 9 | 16 | 12 |
| 52 | Muhammad Rezky Akhzani | 8 | 5 | 3 | 25 | 9 | 15 |
| 53 | Ariani | 7 | 3 | 4 | 9 | 16 | 12 |
| 54 | Andi Rhiny | 29 | 15 | 14 | 225 | 196 | 210 |
| 55 | Destalia | 29 | 15 | 14 | 225 | 196 | 210 |
| 56 | Lusiana | 29 | 15 | 14 | 225 | 196 | 210 |
| 57 | Nabila Harun | 29 | 15 | 14 | 225 | 196 | 210 |
| 58 | Putri Melia K | 30 | 15 | 15 | 225 | 225 | 225 |
|  |  | 1071 | 555 | 516 | 6903 | 6184 | 6445 |

$\mathrm{X}=$ The Odd Number $1,3,5,7,9,11,13,15,17,19,21,23,25,27,29$
$\mathrm{Y}=$ The Even Number 2,4,6,8,10,12,14,16,18,20,22,24,26,28,30


## Appendix 10: The Form of Governor Research Agreement

THE FORM OF GOVERNOR RESEARCH AGREEMENT


## REKOMENDASI PENELITIAN

```
Nomor : 86/IP/DPM-PTSP/2/2021
Dasar: 1. Undang-Undang Nomor 18 Tahun 2002 tentang Sistem Nasional Peneitian, Pengembangan, dan Penerapan Ilmu Pengetahuan dan Teknologi
2. Peraturan Menteri Datam Negeri Repubak Indonesia Nomor 64 Tohun 2011 tentang Pedoman Penertitan kekomendasi Penclitian.
3. Peraturan Walikota Parepare No. 7 Tahun 2019 Tentang Pendelegasian Wewenang Pelayanan Perizinan dan Non Perizinan Kepada Kepala Dinas Peranaman Modal dan Pelayanan Terpadu Satu Pintu.
Setelah memperhatikan hal tersebut, maka Kepala Dinas Penanaman Modal dan Pelayanan Terpadu Satu Pintu :
```



Biaya: Rp. $\mathbf{0 . 0 0}$


## Appendix 8: Form of Research Description of SMA N 3 Parepare

## FORM OF RESEARCH DESCRIPTION OF SMA NEGERI 3 PAREPARE



## Documentation





## CURRICULUM VITAE



FIRMAN AHAMAD FAIZAL was born on May 31th 1997 in Tegal Central of Java. He is the first children from Hery Kiswanto and Aeni Khumairoh, he has one little sister.

He began studying at SD Negeri 1 Kedawung and graduated in 2010, at the same year he continued his study in junior high school of SMP Negeri 1 Bojong and graduated in 2013. After that he continued his study in senior high school of SMA Negeri 2 Parepare and graduated in 2016.

She enrolled and accepted studying in S1 English Education Program Tarbiyah Faculty at State Islamic Institute (IAIN) Parepare 2016 and graduated 2021. The writer completed his study with his skripsi in title "Analyzing The Quality of English Teacher Final Test For Senior High School at Second Grade SMA Negeri 3 Parepare (Item Analysis)".


[^0]:    ${ }^{2}$ Sumaningsih, Kualitas Butir Soal UAS Bahasa Inggris Untuk Siswa MTs di Samarinda (Journal: Pusat Kajian Bahasa dan Budaya: Surakarta, 2015), Vol. 12, No. 2, p. 224.
    ${ }^{3}$ Sumaningsih, Kualitas Butir Soal UAS Bahasa Inggris Untuk Siswa MTs di Samarinda (Journal: Pusat Kajian Bahasa dan Budaya: Surakarta, 2015), Vol. 12, No. 2, p. 225.

[^1]:    ${ }^{6}$ Madsen, Marshal, J. Clark, and Hales Essential of Testing (Philippines: Addisonweslev Publishing Inc, 1972), p. 180.
    ${ }^{7}$ Brown, H., Language Assessment Principles and Classroom Practice (Francisco: California Publisher, Inc, 2004), p. 20.

[^2]:    ${ }^{8}$ Cladwell "Comprehension and Assessment" (Guilford, 2008) in Humairah "Item Analysis of English Summative Test for Second Grade Student of MAN 1 Tanete Bulukumba" (Published Thesis: UIN Alauddin Makassar), p. 12.
    ${ }^{9}$ Humairah "Item Analysis of English Summative Test for Second Grade Student of MAN 1 Tanete Bulukumba" (Published Thesis: UIN Alauddin Makassar), p. 12.

[^3]:    ${ }^{12}$ J. Charles Alderson et al., Language Test Construction, and Evaluation (Cambridge: Cambridge University Press, 1995), p. 173.
    ${ }^{13}$ William Wiersma and Stephen G. Jurs, loc, cit, in Gofur, "An Analysis on the Content Validity of English Summative Test Items for First Grade of Junior High School in Even Semester 2012/2013" (Published Thesis: UIN Syarif Hidayatullah Jakarta), p. 15.

[^4]:    ${ }^{14}$ Gay, at all., Educational Research; Competencies for Analysis and Application (Barkeley: The Lehigh Press, 2006) $8^{\text {th }}$ ed, p. 112.
    ${ }^{15}$ Purwanto N., Prinsip-Prisip dan Teknik Evaluasi Pengajaran (Bandung: PT Remaja Rosdakarya, 2012), Cet. XVII, h. 138.

[^5]:    ${ }^{16}$ Brown, H. D., Language Assessment; Principles and Classroom Practices (San Francisco: California. Longman, 2004), p. 26.

[^6]:    ${ }^{17}$ Bachman L., F., Fundamental Considerations in Language testing, London, 1990 in Humirah, "Item Analysis of English Summative Test for Second Grade Student of MAN 1 Tanete Bulukumba" (Published Thesis: UIN Alauddin Makassar), p. 16.

[^7]:    ${ }^{18}$ Naga, Teori Pengantar Pendidikan in Nurgiyanto, Peniliaian Pembelajaran Bahasa; Berbasis Kompetensi (Yogyakarta: BPFE-Yogyakarta, 2010), h. 171.

[^8]:    ${ }^{19}$ Brown, H. D., Language Assessment; Principles and Classroom Practices (San Francisco: California. Longman, 2004), p. 3.
    ${ }^{20}$ Heaton, Writing Language English Test (New York: Longman Inc, 1991), h. 6.

[^9]:    ${ }^{21}$ Heaton, Writing Language English Test (New York: Longman Inc, 1991), h. 173.
    ${ }^{22}$ Brown, H. D., Language Assessment; Principles and Classroom Practices (San Francisco: California. Longman, 2004), p. 43.
    ${ }^{23}$ Heaton, Writing Language English Test (New York: Longman Inc, 1991), h. 172.
    ${ }^{24}$ Brown, H. D., Language Assessment; Principles and Classroom Practices (San Francisco: California. Longman, 2004), p. 44.

[^10]:    ${ }^{25}$ Brown, H. D., Language Assessment; Principles and Classroom Practices, 2004, h. 45.
    ${ }^{26}$ Heaton, Writing Language English Test (New York: Longman Inc, 1991), h. 173.

[^11]:    ${ }^{27}$ Brown, H. D., Language Assessment; Principles and Classroom Practices, 2004, h. 47.
    ${ }^{28}$ Harris, David, P, Testing English As A Second Language (New Delhi: McGraw Hill Publishing Co, 1969), p. 13.

[^12]:    ${ }^{29}$ Sugianto "Ciri-Ciri (Karakteristik) Tes Yang Baik" (Published Thesis: IAIN Palangka Raya, Palangka Raya), p. 2-3.

[^13]:    ${ }^{33}$ Arikunto, Dasar-Dasar Evaluasi Pendidikan, 2013, h. 223

[^14]:    ${ }^{34}$ M. Chabib Thoha, M.A, "Teknik Evaluasi Pendidikan" in Umi, Kaharudin "Analisis Kesukaran Soal, Daya Pembeda dan Fungsi Distractor" (Published Thesis: UIN Sunan Klijaga, Jogjakarta), p. 59.

[^15]:    ${ }^{35}$ Arikunto, S. "Dasar-dasar Evealuasi Pendidikan" in Noveria, "Metodologi Penelitian Pendidikan" (Yogyakarta: Aynat Publishing, 2015), p. 51.

[^16]:    ${ }^{37}$ Arikunto "Dasar-Dasar Evaluaso Pendidikan" (Jakarta: Bumi Aksara, 2013), p. 207.
    ${ }^{38}$ Brown, H. D., "Language Assessment; Principles and Classroom practices" (San Fransisco: California. Longman, 2004), p. 59.

[^17]:    ${ }^{39}$ Umi, Kaharudin "Analisis Kesukaran Soal, Daya Pembeda dan Fungsi Distractor" (Published Thesis: UIN Sunan Klijaga, Jogjakarta), p. 53.
    ${ }^{40}$ M. Chabib Thoha, M.A, "Teknik Evaluasi Pendidikan" in Umi, Kaharudin "Analisis Kesukaran Soal, Daya Pembeda dan Fungsi Distractor" (Published Thesis: UIN Sunan Klijaga, Jogjakarta), p. 59.

[^18]:    ${ }^{41}$ Arikunto, S. "Dasar-dasar Evealuasi Pendidikan" in Noveria, "Metodologi Penelitian Pendidikan" (Yogyakarta: Aynat Publishing, 2015), p. 51.
    ${ }^{42}$ Heaton, "Writing English Language Tests" (London: Longman Group, 1998), p. 162.

