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Students' Reading Anxiety: A Rasch Model Analysis

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Abstract

The aim of this study was to determine the quality of the instrument and the students' responses of reading anxiety. The approach of this research was qualitative descriptive. The gathered data were qualitatively analyzed by using Rasch Model. Winsteps application version 3.73 was used to analyzed the data. A questionnaire was used as an instrument to get the data. 14 female students of SMP Islam De Green Camp were involved in this research. The FLRAS by Horwitz et al was used to create a questionnaire that contained 20 items. 13 statements were the psychological symptoms and 7 statements were the physical symptoms. The study showed that the quality of the instrument and the students' responses were not good enough to be used due to their small amount. Therefore, teachers must choose and creates a good instrument to know their students' responses about reading anxiety. Then, students were recommended to read more English texts to minimize their reading anxiety.

Keywords: Reading Anxiety, Reading Skill, Analysis, Rasch Model

I INTRODUCTION

Learning is a thing that should be done by all human beings, especially for the learners. Learning is an obligation for every people especially for a student. Learning includes not only the subjects, but also mastery, habit, perception, pleasure, interest, social adjustment, assortment of skills, and ideals. Aydoğan & Akbarov (2014) state that learning changed one's behavior because of the exercises and experienced. Learning is a basic process of the development of the behavior of human life inflicted or changed through practiced and exercise (Grabe, 2014). By learning, one can improve their knowledge and their live into the better quality. We live according to the life and work according to what we have learned.

The teachers need to knew the difficulties of students in learning English. The purpose of learning could be achieved by using a proper way of the teacher, because sometimes the problem is considered not important so that the teacher do not pay attention to the psychology of

what happens to the learners during the learning process. The teacher is one of the important elements in the system of education. External factors that affect the learning outcomes of students are such as: teacher, social environment, school curriculum as well as facilities and the infrastructure.

In learning English, most students feel anxious due to some things. The result makes them not liking English lessons. However, we know that there is nothing difficult to learn something if we have the intention to learn, including in learning English. Tran (2012) states that anxiety is one of the reasons why good interpersonal relationships are important in understanding the English language. This is because the anxiety could increase subjectivity to each individual and affected the difficulty for the students in learning English or not.

There are some students who could easily understand when accepting an explanation in English, but there are also some students who are difficult to understand it. The excessive anxiety also have a negative impact on them because it could reduce the effectiveness of the reading they did. When the anxiety of the students in reading is increased, the students face the problem in understanding the meaning of the text that they had read. It happens constantly to the form of vicious circle. Such things could happen in the short-term and also long-term. It shapes the interpersonal experiences of students. From that problem, it could decrease the score of each aspect in English, not only in reading, but also in writing, listening, and speaking. Another problem is there are some students who could not learn English well because the students think that English is difficult to learn, especially when they read a text that written in English. They do not know the meaning and how to translate it into their mother tongue. They have a bit vocabulary mastery to translate all of the text and got the meaning clearly.

Reading is the product of interpreting graphic symbols reflecting language skills, cognitive abilities, and world experienced by the learners (Askurny , 2019). When the students read an English text, there are various anxiety symptoms happen. Jalongo & Hirsh (2010) state that a variety of symptoms of students who suffer from reading anxiety. First, a student with reading anxiety shows the barriers of the intellectual curiosity of their own, which usually indicate an attitude of non-ropsive or the attitude of the non-active. The students are often in the emotional environment the social view of learning and curiosity as something threatening. Second, students with high reading anxiety shows the resistance of the aggression of their intellectual or assertiveness which usually requires the skills to read, but refuses to use it. They are usually influenced by a group of peer networks. Third is the inhibition of intellectual freedom. Students usually shows an attitude that is described as "I can't read his own" nature. Lastly, students having reading anxiety often have a lack of confidence in ability to read on their own. As a conclusion, the symptoms appear as a kind of psychological symptoms of reading anxiety and if the students experience one of those varieties, it means that their reading anxiety is high.

Reading anxiety could be observed not only from psychological symptoms but also from physical symptoms. Worde & Wörde (2003) states that some of the physical symptoms include "headaches", "clammy hands, cold fingers", "shaking, sweating", "pounding heart", "tears", and "foot tapping, desk drumming". Those symptoms, of course, happened to high-anxious students.

Researches on this topic have been conducted by some other researchers. According to the result of the study conducted by Rajab et al. (2012), anxiety was one form of emotional problems that could affect not only academic performance of learners but also their social life. The level of undergraduate students was a low level which indicates that they experienced little anxiety when reading the second language texts. Meanwhile, another finding showed that students' test anxiety was rather low and they did not express much worry about taking a test in

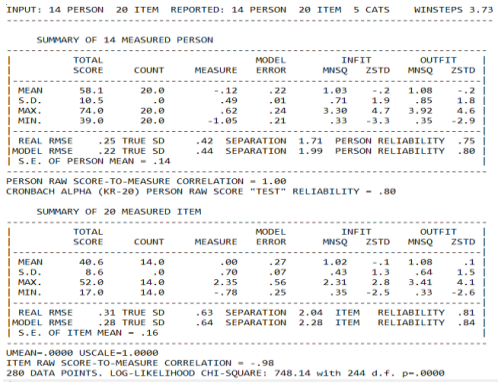
general English (Javanbakht & Hadian, 2014). This study was different with other study because the other studies discussed about anxiety in general, this study focused the anxiety in reading. In this study, the authors focused on how the quality of instrument and students' responses in reading.

II METHOD

In this study, the authors focused on how the quality of instrument and students' responses in reading. Descriptive qualitative was used as an approach in this study. An adapted questionnaire (Askurny & Pujiastuti, 2019) was used as an instrument in this research. The authors adapted Foreign Language Reading Anxiety Scale (FLRAS) questionnaire as an instrument. The authors used the Likert's scoring scale (Etikan, 2016) to give the score for all of the students' responses. 14 female students were involved in this research. Winsteps application version 3.73 (Agust , S.,& Subroto. G. 2018; Agust et al., 2018; Agust, S., & Subroto, 2020) was used to analyze the gathered data in this study.

III RESULT

The result of this study was the quality of the instrument and the students' response of reading anxiety.



INPUT: 14 PERSON 20 ITEM REPORTED: 14 PERSON 20 ITEM 5 CATS WINSTEPS 3.73

SUMMARY OF 14 MEASURED PERSON

	TOTAL SCORE	COUNT	MEASURE	MODEL ERROR	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD
MEAN	58.1	20.0	-.12	.22	1.03	-.2	1.08	-.2
S.D.	10.5	.0	.49	.01	.71	1.9	.85	1.8
MAX.	74.0	20.0	.62	.24	3.30	4.7	3.92	4.6
MIN.	39.0	20.0	-1.05	.21	.33	-3.3	.35	-2.9

REAL RMSE	.25	TRUE SD	.42	SEPARATION	1.71	PERSON RELIABILITY	.75
MODEL RMSE	.22	TRUE SD	.44	SEPARATION	1.99	PERSON RELIABILITY	.80
S.E. OF PERSON MEAN = .14							

PERSON RAW SCORE-TO-MEASURE CORRELATION = 1.00
CRONBACH ALPHA (KR-20) PERSON RAW SCORE "TEST" RELIABILITY = .80

SUMMARY OF 20 MEASURED ITEM

	TOTAL SCORE	COUNT	MEASURE	MODEL ERROR	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD
MEAN	40.6	14.0	.00	.27	1.02	-.1	1.08	.1
S.D.	8.6	.0	.70	.07	.43	1.3	.64	1.5
MAX.	52.0	14.0	2.35	.56	2.31	2.8	3.41	4.1
MIN.	17.0	14.0	-.78	.25	.35	-2.5	.33	-2.6

REAL RMSE	.31	TRUE SD	.63	SEPARATION	2.04	ITEM RELIABILITY	.81
MODEL RMSE	.28	TRUE SD	.64	SEPARATION	2.28	ITEM RELIABILITY	.84
S.E. OF ITEM MEAN = .16							

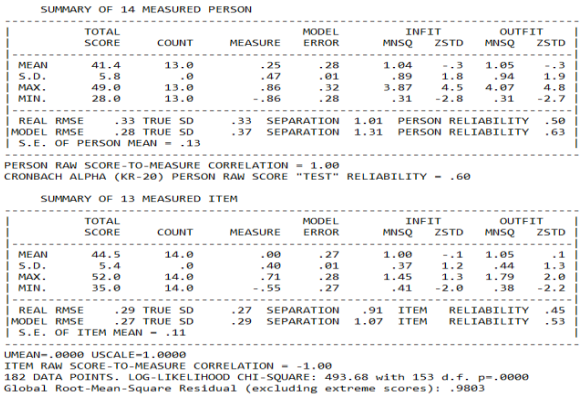
UMEAN=.0000 USCALE=1.0000
ITEM RAW SCORE-TO-MEASURE CORRELATION = -.98
280 DATA POINTS. LOG-LIKELIHOOD CHI-SQUARE: 748.14 with 244 d.f. p=.0000

Figure 1. Students' Reading Anxiety

Based on the figure 1, it showed that the mean measure on the person was equal to -0.12. The score was smaller than 0 which indicated that the tendency of the subjects' ability was lower than the level of the questions' difficulty. This is caused by the number of respondents who spelled out a little. The score of Cronbach Alpha (KR-20) was a reliability coefficient that was calculated based on the approximation classical theory test. This score was the instruction between the overall person and item. The score of Alpha was 0.80 which showed that the reliability test was still not in satisfactory level.

The score of the person reliability was 0.75, and the score of the item reliability was 0.81. This showed that the consistency of the answers of the subject was still weak, but the quality of the grain problem in the instrument aspect of reliability was quite good. The scores of INFIT and OUTFIT MNSQ were 1.03 and 1.08, while the scores of INFIT and OUTFIT ZSTD were -0.2. The scores of mean INFIT and OUTFIT MNSQ and INFIT and OUTFIT ZSTD of

person and item were already close to the ideal. The score of separation also showed the quality of the instrument and the ability of the participants. The greater the separation the better the quality of the instrument because it can identified a group of subjects (capable – incapable) and item group (difficult – easy) more widely.



SUMMARY OF 14 MEASURED PERSON

	TOTAL SCORE	COUNT	MEASURE	MODEL ERROR	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD
MEAN	41.4	13.0	.25	.28	1.04	-.3	1.05	-.3
S.D.	5.8	.0	.47	.01	.89	1.8	.94	1.9
MAX.	49.0	13.0	.86	.32	3.87	4.5	4.07	4.8
MIN.	28.0	13.0	-.86	.28	.31	-2.8	.31	-2.7

REAL RMSE	.33	TRUE SD	.33	SEPARATION	1.01	PERSON RELIABILITY .50
MODEL RMSE	.28	TRUE SD	.37	SEPARATION	1.31	PERSON RELIABILITY .63
S.E. OF PERSON MEAN = .13						

PERSON RAW SCORE-TO-MEASURE CORRELATION = 1.00
CRONBACH ALPHA (KR-20) PERSON RAW SCORE "TEST" RELIABILITY = .60

SUMMARY OF 13 MEASURED ITEM

	TOTAL SCORE	COUNT	MEASURE	MODEL ERROR	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD
MEAN	44.5	14.0	.00	.27	1.00	-.1	1.05	.1
S.D.	5.4	.0	.40	.01	.37	1.2	.44	1.3
MAX.	52.0	14.0	.71	.28	1.45	1.3	1.79	2.0
MIN.	35.0	14.0	-.55	.27	.41	-2.0	.38	-2.2

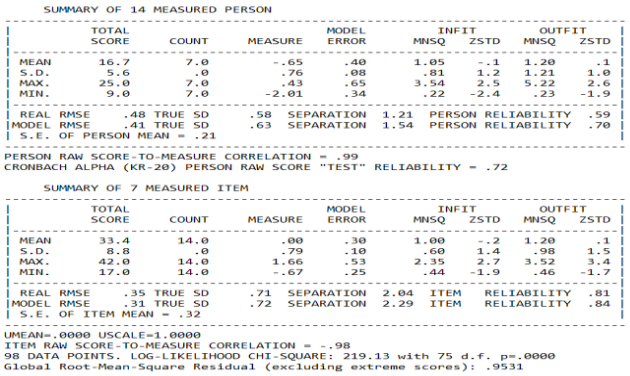
REAL RMSE	.29	TRUE SD	.27	SEPARATION	.91	ITEM RELIABILITY .45
MODEL RMSE	.27	TRUE SD	.29	SEPARATION	1.07	ITEM RELIABILITY .53
S.E. OF ITEM MEAN = .11						

UMEAN=.0000 USCALE=1.0000
ITEM RAW SCORE-TO-MEASURE CORRELATION = -1.00
182 DATA POINTS. LOG-LIKELIHOOD CHI-SQUARE: 493.68 with 153 d.f. p=.0000
Global Root-Mean-Square Residual (excluding extreme scores): .9803

Figure 2. Students' Reading Anxiety (Psychological Symptoms)

Based on the figure 2, it showed that the mean measure on the person was equal to 0.25. Mean score was smaller than 0 which indicated that the tendency of ability the subject was lower than the level of difficulty of the questions. This was caused by the number of respondents who spelled out a little. The score of Cronbach Alpha (KR-20) was a reliability coefficient that was calculated based on the approximation classical theory test. This score was the instruction between the overall person and item. The score of Alpha was 0.60 which showed the reliability test was worst.

The score of the person reliability was 0.50, and the score of the item reliability was 0.43. This showed that not only the consistency of the answers of the subject was still weak, but also the quality of the grain problem in the instrument aspect of reliability was not good. The scores of INFIT and OUTFIT MNSQ were 1.04 and 1.05, while the scores of INFIT and OUTFIT ZSTD was -0.3. The scores of mean INFIT and OUTFIT MNSQ and INFIT and OUTFIT ZSTD of person and item were already close to the ideal. The score of separation also showed the quality of the instrument and the quality of the participants. The greater the separation the better the quality of the instrument because it can identified a group of subjects (capable – incapable) and item group (difficult – easy) more widely.



SUMMARY OF 14 MEASURED PERSON

	TOTAL SCORE	COUNT	MEASURE	MODEL ERROR	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD
MEAN	16.7	7.0	-.65	.40	1.05	-.1	1.20	.1
S.D.	5.6	.0	.76	.08	.81	1.2	1.21	1.0
MAX.	25.0	7.0	.43	.65	3.54	2.5	5.22	2.6
MIN.	9.0	7.0	-2.01	.34	.22	-2.4	.23	-1.9

REAL RMSE	.48	TRUE SD	.58	SEPARATION	1.21	PERSON RELIABILITY		.59
MODEL RMSE	.41	TRUE SD	.63	SEPARATION	1.54	PERSON RELIABILITY		.70
S.E. OF PERSON MEAN = .21								

PERSON RAW SCORE-TO-MEASURE CORRELATION = .99
CRONBACH ALPHA (KR-20) PERSON RAW SCORE "TEST" RELIABILITY = .72

SUMMARY OF 7 MEASURED ITEM

	TOTAL SCORE	COUNT	MEASURE	MODEL ERROR	INFIT MNSQ	INFIT ZSTD	OUTFIT MNSQ	OUTFIT ZSTD
MEAN	33.4	14.0	.00	.30	1.00	-.2	1.20	.1
S.D.	8.8	.0	.79	.10	.60	1.4	.98	1.5
MAX.	42.0	14.0	1.66	.53	2.35	2.7	3.52	3.4
MIN.	17.0	14.0	-.67	.25	.44	-1.9	.46	-1.7

REAL RMSE	.35	TRUE SD	.71	SEPARATION	2.04	ITEM RELIABILITY		.81
MODEL RMSE	.31	TRUE SD	.72	SEPARATION	2.29	ITEM RELIABILITY		.84
S.E. OF ITEM MEAN = .32								

UMEAN=.0000 USCALE=1.0000
ITEM RAW SCORE-TO-MEASURE CORRELATION = -.98
98 DATA POINTS. LOG-LIKELIHOOD CHI-SQUARE: 219.13 with 75 d.f. p=.0000
Global Root-Mean-Square Residual (excluding extreme scores): .9531

Figure 3. Students' Reading Anxiety (Physical Symptoms)

Based on the figure 3, it showed that the mean measure on the person was equal to -0.65. Mean score was smaller than 0 which indicated that the tendency of ability the subject was lower than the level of difficulty of the questions. This is caused by the number of respondents who spelled out a little. The score of Cronbach Alpha (KR-20) was a reliability coefficient that was calculated based on the approximation classical theory test. This score was the instruction between the overall person and item. The score of Alpha was 0.72 which showed the reliability test was still not in satisfactory level.

The score of the person reliability was 0.59, and the score of the item reliability was 0.81. This showed that the consistency of the answers of the subject was still weak, but the quality of the grain problem in the instrument aspect of reliability was fair. The scores of INFIT and OUTFIT MNSQ were 1.05 and 1.20, while the scores of INFIT and OUTFIT ZSTD were -0,1 and 0,1. The scores of mean INFIT and OUTFIT MNSQ and INFIT and OUTFIT ZSTD of person and item were already close to the ideal. The score of separation also showed the quality of the instrument and the quality of the subjects. The greater the separation the better the quality of the instrument because it can identify a group of subjects (capable – incapable) and item group (difficult – easy) more widely.

IV DISCUSSION

Wright map test variant (person) in Figure 4 showed the distribution for the ability of participant. The item showed the distribution for the level of difficulty of the questionnaire items answered by the respondents. From the data, it can be seen that almost all respondents had a medium level ability in answering the given questionnaire items.

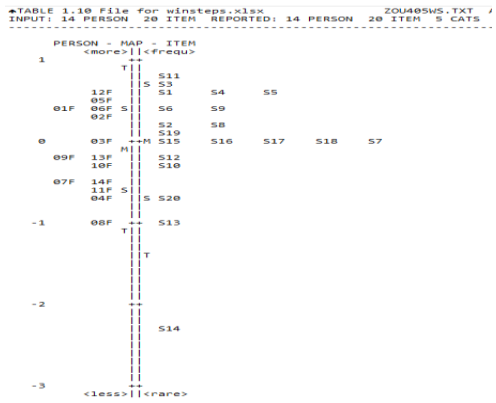


Figure 4. Wright Map Test Variant (person)

On the right side of the wright map, 20 respondents who had the highest ability level with the code number 12F with the average logit person +0.6. From the variable data, it showed that 13 respondents who had the highest score of ability to respond the statement and had a high ability. For the respondents who had the lowest ability was the respondent number 08F. If there were a distribution of person ability that was wider compared to the distribution of the item, it can be concluded that the level of person ability (respondent) was different.

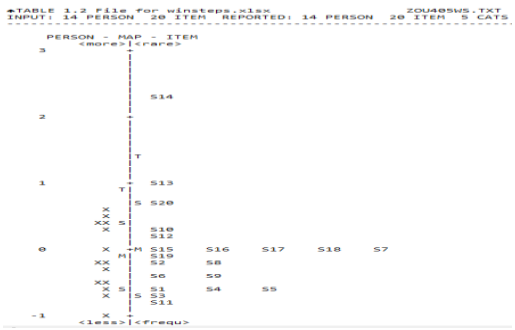


Figure 5. Wright Map Test Variable (Item)

The analysis on the comparison of the person logit and item logit response based on the data showed that the person logit and item logit was the same. It means that the ability of the respondents overall tends to be in accordance with the difficulty of item response.

This is shown with almost all of the respondents approved all aspects of the grain response given. Based on the figure 5 above can be seen that in the total count all filled with 14. This showed that all respondents answered all items are given. On the data above, can be seen that most difficult item was the item with the number S13 and most easier item was the item with the number S11.

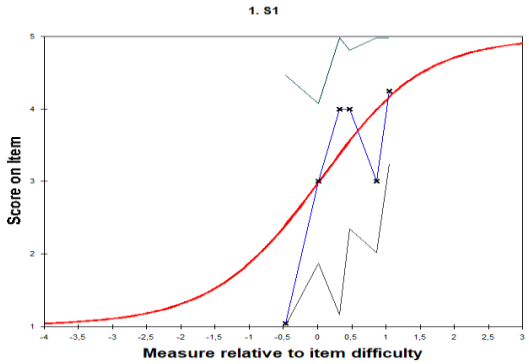


Figure 6. Graph of Expected Score ICC

Based on the Figure 6, the red line was the ideal model from the Rasch Model. If the ability of the respondents was higher the changes of answering "never" was also getting higher. The blue line was the data being analyzed. The data analyzed was very different from the Rasch Model. It means that the data analysis did not function in accordance with the Rasch Model.

Based on the data analysis, it can be concluded that mean measure of the person was still not good because the mean score was smaller than 0. It was caused by the small quantity of the respondents. Furthermore, it can be seen that almost all respondents had a medium level ability in answering the given questionnaire items. The ability of the respondents was different mention by the wright map test variable (person). Figure 6 also showed that the data analysis did not function very well accordance with the Rasch Model. Therefore, the result of this study was the quality of the instrument and students' responses was not good enough.

V CONCLUSION

The conclusion of this study was the quality of the instrument and students' responses was not good enough to be used in finding out students' reading anxiety. Mean measure on the person was equal to -0.12. The score was smaller than 0 which indicated that the tendency of the subjects' ability was lower than the level of the questions' difficulty. This is caused by the number of respondents who spelled out a little. Then, the score of the item reliability was 0.81. This showed that the consistency of the answers of the subject was still weak. The authors

suggest that the teachers must choose and creates a good instrument to know the students' responses about reading anxiety. In addition, the students are recommended to read more English texts to minimize their reading anxiety. Then, for the further studies the authors would suggest a research in other field such as in writing, listening, and speaking.

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