

I-ROLE 2023**International Conference of Research on Language Education****SECOND LANGUAGE READING ATTITUDE (L2RA) MODEL
VALIDATION THROUGH CONFIRMATORY FACTOR
ANALYSIS**

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Abstracts

This survey study utilizes self-administered questionnaire, with simple random proportionate sampling technique, aims to explore and confirm the instruments measuring Second Language Reading Attitude (L2RA). The pilot study randomly sampled 120 form sixth students at the West Coast of Sabah using The Exploratory Factor Analysis (EFA) procedure to gain the practicality of measuring items and determined the components of the construct. Expending it to field research, a new establish instrument had involved 465 form sixth students as participants. The Confirmatory Factor Analysis (CFA) procedure has been embarked during the field stage to validate the instrument. The results for EFA obtained five components developed from the items. Whilst the CFA results show the instrument measuring Second Language Reading Attitude (L2RA) construct has disseminated the procedure of uni-dimensionality, validity, and reliability. The overall results of CFA achieved all requirements for construct validity and reliability which indicate that it is reliable to be used in future research that may be conducted in a similar context described in this paper.

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1. Introduction

Reading is a fundamental key factor to determine one's success in an academic field. However, its successful execution in academic context is still much to be desired. According to Mundhe (2015), students similarly tend to encounter various challenges outside the academic environment due to their reading deficiency. It is suspected that attitude toward reading is the main reason why reading quality is decreasing.

Most studies highlight the relationship between reading difficulties and the habits of reading. Some studies attribute this association to the reading habit, reading attitudes and reading success. However, there is a void based on reading attitude studies alone, which researchers found a need to explore. One interesting finding by Ahmad and Yamat (2021), where there is a negative trend identified between students' reading attitude and achievement in comprehension progress at a secondary school in Malaysia. The results suggest that students' progress through elementary school deteriorates as their attitude declines. Likewise, reading in English as second language (ESL) difficulty is a perennial issue involving mental processes abstractness that may be related to the reader's attitudes toward reading a text. Therefore, there is a need to understand the attitude of a reader before a teacher can facilitate to improve the level of comprehension specifically for the academic text demand. As it is believed that, reading academically is quite a challenge for MUET teachers since then. Based on the results of MUET National Reading test analysis displays an inconsistency performance (especially MUET Reading paper) since year 2012-2019 (Malaysian Examination Council (MEC)).

In relation to the above concern, a huge challenge for today's world is to conquer the negative trends in students' attitudes toward reading (Jamiah & Faiza, 2020). To start with, studies in the United States had shown an adverse trend in student attitudes toward reading as they grow older. This is due to the temptations of various distractions such as video games and television. The similar trend occurred in Malaysia. Based on a study done by National Library of Malaysia reported that Malaysian read about two pages in year 1982 and slowly improved to two books in 1996.

Worst still, a study done by Md Yasin et al. (2010) for engineering students at Malaysian Polytechnic exposed that student mostly lack of English Language proficiency disregard of their types of workplaces or the level of study. This reflects their limitation on English Language knowledge which driven from their deficiency on reading skills. Other than that, several critics from Malaysian educators about their students deprived reading habits. Supported by Kaur and Thiyagarajah (1999) stated that Malaysian students read truly little with maximum number of ten hours a week. He added that many students preferred watching television and video compared to reading during their leisure time. Additionally, most findings shared inexhaustive reading difficulties yet with shallow understanding of the students' attitudes toward reading, particularly reading in English Language. Therefore, this study intends to apprehend the attitudes' features which believed can contribute to students' success in reading performance and proposed to investigate the form sixth students' attitude towards ESL reading through their perspective on Reading the text in English.

2. Problem Statement

There are numerous studies done on reading attitude across countries yet there was a limited study done in the researchers' setting. Consequently, researchers found the need to understand the attitude of ESL reading model among the form sixth students beforehand. Pertaining to the issues on reading interest, Liu (2005) had found discouraging fact where reading habits among college students fluctuated and believed it was initiated by the digital media.

On the other hand, based on Shahriza Abdul Karim and Hasan (2007) study found that students spend about 7 to 9 hours per week on reading as to fulfil the requirement of academic work. The students mostly spend their time on reading newspapers, academic books, and websites. Obviously, this result indicates that the students are reading for educational purposes. However, they informed that the students depend very much on electronic and IT resources for knowledge. For that reason, it comes to researchers' discrepancy that whether the exploitation of digital media really caused the depletion of reading attitude among the adult learners such as collage or university's students? Many studies done in which the digital media is essential for adult learners. Other than vast and fast, it has supported the student's ability to gain more knowledge tremendously. Otherwise, as what being emphasized by Muhamad et al. (2020), Mustafa (2018) and Ahmed (2016), who believed that the preconceived mindset is the dominant reason why the students feel that they need to read in English for academic purposes per se and this become crucial among adult learners. Therefore, researchers believe that a thorough study on actual attitudes of adult learners need to be done by addressing the importance of digital media or IT for students' achievement.

On the other hand, some issue that need to be addressed such as, the encouragement towards reading should be implemented. At the same token this concern had not been resolved since then. For example, the Malaysian Education Ministry's have attempted to implement reading program in schools known as NILAM (Nadi Ilmu Amalan Membaca) or The Pulse of Knowledge in 1998 (in effect till now) to inspire reading habit among students. Unfortunately, limited number of students borrow books for genuine dedications. It is also difficult to verify whether students read the books whole-heartedly. Navinder (2015) suspected that students only read the books' summaries. In addition, Ghazali and Habil (2020), Navinder (2015), Zainol Abidin et al. (2011) found that the students' involvement is still at lower level. It can conclude that students do not take NILAM programme earnestly and do not read extensively. Similarly, in the international level, such as the programme called PISA (Programme for International Student Assessment) recognised by the Organisation for Economic Co-operation and Development (OECD) found upsetting results. This indicates that Malaysian students have not fully developed interest in reading which has not being confirmed due to the digital interference.

Henceforth, researchers supposed that the study of attitude towards reading in English is worth to study as much research acknowledge the factor of students' positive attitude has improved in the Language proficiency particularly the reading performance. Al Samadani and Ibnian (2015), confirm that in their study results which demonstrate the positive correlation between students' academic performance (GPA) with students' positive attitude towards reading, disregard the students' gender.

Therefore, researchers are very interested to find out the actual attitudinal factors of form sixth students regarding ESL reading, whether the same trend materializes the past studies and theory of attitudes.

3. Research Question

This study wishes to address the following research question - what is the existing level of Second Language Reading Attitudes among Form Sixth students at the West Coast of Sabah.

4. Purpose of the Study

This research aims to find out the students' attitude toward Second Language Reading and to outline the Second Language Reading Attitude model among form sixth students at target population.

5. Research Methods

Adapting Lee and Schallert's (2014) research paper, this study employed a cross-sectional design to obtain data for the pilot study as well as the field study. The instrument selected had been modified to suit the study. All items were measured using the five-point interval scale using 1 for "Never" and 5 as "Always". The interval-scale was employed to meet the assumption of parametric statistical analysis. The population of this study was form sixth students at the West Coast of Sabah. The selected respondents were given a self-administered questionnaire through their schoolteachers.

The sampling frame was received from the West Coast of Sabah's district education department. The data was gathered in two stages: the pilot study and the field study. A stratified simple random selection method was used in selecting randomly 120 respondents for the pilot study and 465 respondents for the field study. It is necessary to understand that a researcher should test the actual questionnaire through pilot study and the respondents from piloting should not be included in the field study (Bahkia et al., 2019; Fitriana et al., 2022). As a result, 100 respondents for a pilot study and between 300 - 500 respondents for a field study are sufficient to carry out the SEM (Structural Equation Modelling) method (Awang et al., 2023; Hair et al., 2019). In this study, CFA (Confirmatory Factor Analysis) was used to validate the measurement model of the construct.

6. Findings

6.1. Confirmatory Factor Analysis (CFA)

Using the results from exploratory factor analysis (EFA), the study constructed the final questionnaire for the field study. The questionnaire for Second Language Reading Attitude (L2RA) consists of five components with twenty-six items. Sustaining the name, the first component CG (Cognitive Attitude) consists of six items; the second component CN (Conative Attitude) consists of eight items; component three: SA (Self-Assessment) consists of three items, component four; AX (Anxiety) consists of five items and lastly component five; NG (Negative Attitude) consists of four items. The second stage is data collection for field study. The same procedure (self-administered questionnaire) on 465 numbers of randomly selected respondents was conducted. The study supports the Second Language Reading Attitude (L2RA) assessment model as a second-order construct measured with five components. The CFA technique was carried out with the advantage of IBM-SPSS-AMOS 25.0 with the Maximum

Likelihood Estimator (MLE). Figure 1 depicts the outcomes of the CFA procedure using MLE. Figure 1 shows the measurement model of Second Language Reading Attitude (L2RA). This construct has five components. The first component CG represents Cognitive, the second component CN represents Conative, the third component SA represents Self-Assessment, fourth component AX represents Anxiety, and the fifth NG represents Negative Attitude.

Subsequently, Hair et al. (2006) and Awang et al. (2018, 2023) proposed that prior to the construction of structural models, all requirements of measurement model fit must pass the essential inspections of their validity and dependability. The measurement model of a latent construct must therefore undergo three categories of construct validity tests: construct validity, convergent validity, and discriminant validity (Awang, 2015; Awang et al., 2023; Hair et al., 2011).

The Assessment of Construct Validity using the Fitness Indices as presented in Figure 1. The Convergent Validity is assessed using the Average Variance Extracted (AVE) and the Discriminant Validity is assessed by through the Discriminant Validity Index Summary. Figure 1 present the CFA results and Table 1 presents the assessment of discriminant validity.

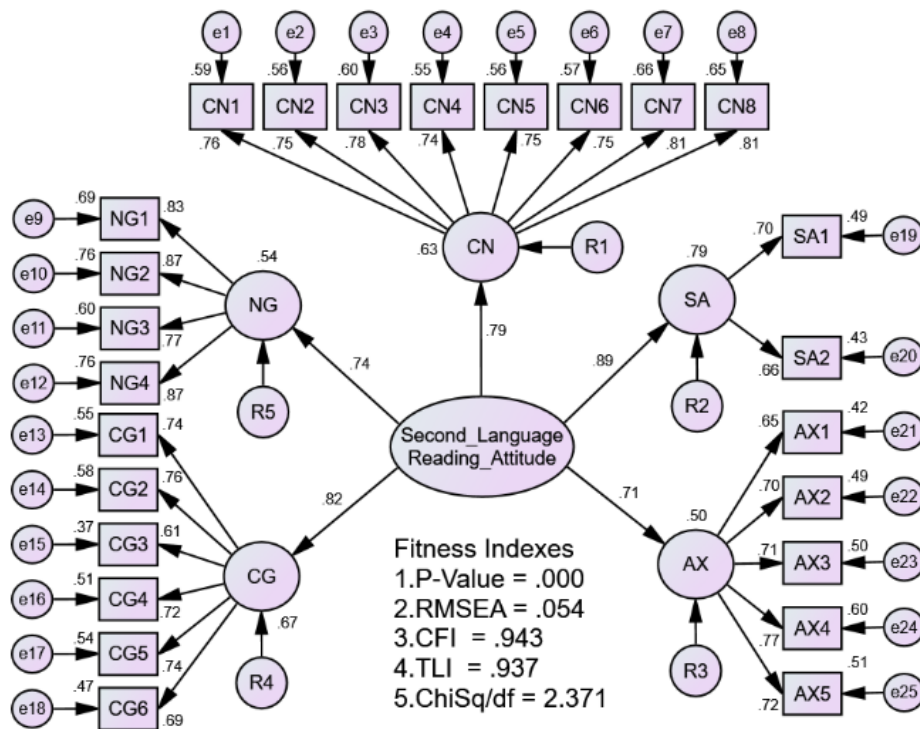


Figure 1. The CFA results for Second Language Reading Attitude (L2RA)

6.2. Construct validity assessment

The construct validity for the measurement model can be assessed and confirm through a set of fitness indexes (Awang et al., 2018, 2023). There are three types of model fit criteria that must be

satisfied, namely Absolute fit, incremental fit, and parsimonious fit. The fitness indexes are presented automatically with the CFA results shown in Figure 1. The fitness indexes are presented in Table 1.

Table 1. The assessment for construct validity

Name of Category	Name of Index	Level of acceptance	Index Value	Comment
Construct Validity	Absolute Fit	<0.80	0.054	Achieved
	Incremental Fit	>0.90	0.943	Achieved
	Parsimonious Fit	<3.0	2.371	Achieved

The measurement model for Second Language Reading Attitude (L2RA) has achieved the requirement for construct validity

The fitness indices in Table 1 have met the construct validity condition, hence we may conclude that Second Language Reading Attitude (L2RA) is a valid construct. The factor loading for each item retained in the model after the CFA technique is used to determine the convergent validity and composite reliability. Table 2 shows the component, the items inside each component, the factor loading for each item, and the computed CR (composite reliability) and AVE (average variance extracted) values.

Table 2. The Composite Reliability, convergent validity, and discriminant validity

Construct	Item	Factor Loading	CR (above 0.6)	AVE (above 0.5)	Convergent Validity
Second Language Reading Attitude	CN	.79	.89	.63	Yes
	SA	.89			
	AX	.71			
	CG	.82			
	NG	.74			

The results in Table 2 indicate that the convergent validity and composite reliability for the Second Language Reading Attitude (L2RA) construct is achieved when all values for CR are greater than 0.5 and all valued for AVE are greater than 0.6 (Bahkia et al., 2019; Dani et al., 2022). Thus, the study can conclude that the composite reliability and convergent validity for Second Language Reading Attitude (L2RA) construct have been achieved.

As a result of the findings, the study can infer that the composite reliability and convergent for the Second Language Reading Attitude (L2RA) construct have been met.

Discriminant Validity is another condition for validity. The study must analyze the strength of the correlation between these five components since Second Language Reading Attitude (L2RA) is a second-order construct with five components. If the coefficient of correlation among the components does not exceed 0.85, the discriminant validity of the Second Language Reading Attitude (L2RA) construct has been achieved (Dani et al., 2022). Figure 2 depicts the coefficient of correlation between the components after it has been calculated.

The examination of discriminant validity for the Second Language Reading Attitude (L2RA) construct is shown in Figure 2. The IBM-SPSS-AMOS software calculated the correlation coefficient between all five model components. The correlation coefficients between all components do not exceed 0.85, as per information presented. With the finding of the correlation between component for instance, CG- NG is .61, CG-CN is .68, CG-SA is .70, CG- AX is .56, NG- CG is .61, NG-CN is .51, NG-SA is .67, NG- AX is .52, CN-NG is .57, CN-SA is .69, and CN-AX is .54. As a result, based on the measurement model for Second Language Reading Attitude (L2RA) construct has achieved the discriminant validity which all discriminant level showed less than 0.85.

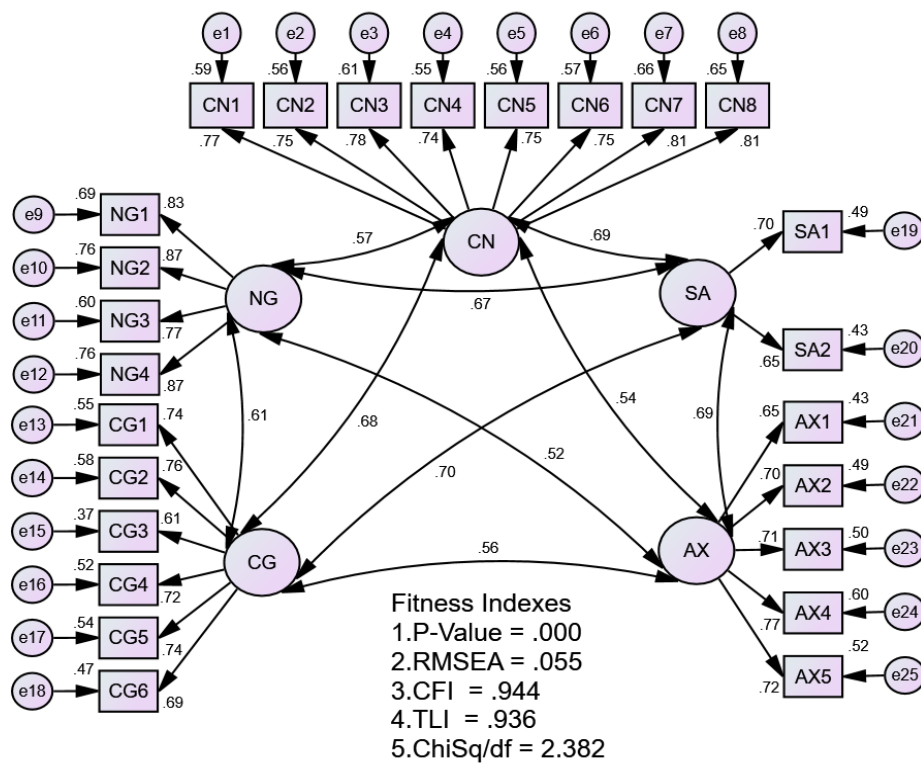


Figure 2. The assessment of discriminant validity for Second Language Reading Attitude (L2RA) construct

6.3. The assessment of normality of the items

The distribution of items measuring the Second Language Reading Attitude (L2RA) construct must then be assessed in the study. Table 3 shows the study's assessment of the normality of the distribution based on the text output of IBM-SPSS-AMOS. Since the algorithm is vigorous to skewed data, the normality assessment for the procedure utilizing the Maximum Likelihood Estimator (MLE) is performed using the degree of skewness of the distribution. As stated by Dani et al. (2022), Fitriana et al. (2022) and Awang et al. (2023), the skewness values for all items should lie within the range of between -1.5 and 1.5 for data to be acceptable to be normally distributed, or at the very least, the data distribution should not deviate from the normality distribution.

As can be seen in Table 3, the results indicate all the values lie within the range of -1.5 to 1.5. Because of this, can conclude that the data distribution for the items assessing the Second Language Reading Attitude (L2RA) construct achieved its normality assumption for parametric statistical analysis (Awang et al., 2018, 2023).

Table 3. The assessment of normality of the items

Variable	Min	Max	Skew	C.R.	Kurtosis	C.R.
CN8	2.000	5.000	-.333	-2.930	.220	.967
AX5	1.000	5.000	-.484	-4.257	-.092	-.406
AX4	1.000	5.000	-.450	-3.959	.207	.909
AX3	1.000	5.000	.004	.039	-.050	-.220
AX2	2.000	5.000	-.083	-.732	-.442	-1.945
AX1	1.000	5.000	-.319	-2.811	.088	.387
CG1	2.000	5.000	-.099	-.873	-.148	-.652
CG2	2.000	5.000	-.301	-2.650	-.062	-.275
CG3	2.000	5.000	.020	.180	-.248	-1.091
CG4	2.000	5.000	-.016	-.143	-.234	-1.032
CG5	2.000	5.000	-.229	-2.020	.186	.819
CG6	2.000	5.000	-.117	-1.028	-.104	-.460
NG1	2.000	5.000	-.284	-2.501	-.310	-1.363
NG2	1.000	5.000	-.532	-4.682	.601	2.647
NG3	2.000	5.000	-.286	-2.522	-.039	-.173
NG4	2.000	5.000	-.340	-2.995	.071	.311
SA2	2.000	5.000	-.275	-2.419	-.249	-1.095
SA1	2.000	5.000	-.623	-5.483	.569	2.504
CN7	2.000	5.000	-.383	-3.373	.070	.310
CN6	2.000	5.000	-.156	-1.376	-.080	-.352
CN5	2.000	5.000	-.144	-1.268	-.058	-.254
CN4	2.000	5.000	-.039	-.345	-.346	-1.523
CN3	2.000	5.000	-.140	-1.232	-.212	-.932
CN2	2.000	5.000	-.011	-.098	-.293	-1.289
CN1	2.000	5.000	-.368	-3.243	.370	1.629
Multivariate					60.846	17.855

7. Conclusion

Numerous items for measuring the concept of Second Language Reading Attitude (L2RA) have been investigated. Pre-testing (expert substantiation was obtained), pilot testing (EFA filtered the items), and field study (CFA validated the items) were conducted on the developed and modified items. The instruments' requirements for content validity, face validity, and criterion validity have been met through preliminary testing. Exploratory Factor Analysis has accomplished the needs of KMO measure of sampling adequacy, Bartlett's Test for sphericity, and Cronbach's Alpha measure of internal reliability.

Through Confirmatory Factor Analysis (CFA), the requirements for construct validity, convergent validity, and discriminant validity, as well as composite reliability and normality of item distribution, have been met. Thus, the procedure implemented was effective in developing and validating instruments for measuring the Second Language Reading Attitude (L2RA) construct for use in the field.

In summary, based on the factor loading for each component, 70 to 90 percent of respondents agree, to some extent, that the attitude factor of ESL Reading exists, and that factors should be well thought out by ESL teachers as a means to assist students in developing into proficient readers.

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