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# SCHOOL ENGAGEMENT MEASURE INSTRUMENT ADAPTATION

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**Abstract:** School engagement is a multidimensional construct that refers to student involvement in schools in three dimensions, namely involvement in behavioral, emotional and cognitive aspects. School Engagement Measure is an instrument to measure student engagement in schools that has been widely used in various countries. In order to use the instrument in a culturally different way, an adaptation process is needed so that the adapted instrument is valid and reliable. The purpose of this study was to obtain a standardized version of the School Engagement Measure in Indonesia. The International Test Commission Guidelines (2017) were used in the adaptation process. Based on the results of the CFA analysis using the JASP 0.15.0.0 program, it can be concluded that the overall School Engagement Measure model with indicators consisting of three dimensions, namely behavioral engagement, Emotional engagement and cognitive engagement, has a good fit model. The null hypothesis means that the SEM model is acceptable. This explains that the resulting model can describe the actual conditions.

**Keywords:** School Engagement Measure; adaptation.

## INTRODUCTION

(Fredricks et al., 2004) shed light on the forms of student involvement in schools. In this regard, (Fredricks et al., 2004) state that school engagement is a multidimensional construct that refers to student involvement in school in three dimensions, namely involvement in behavioral, emotional and cognitive aspects. Behavior engagement includes positive behavior, obeying the rules, not doing various disruptive behaviors at school, concentrating on following learning, doing assignments, persevering, giving questions, focusing on learning, actively participating in discussions and providing active participation in school activities. Emotional engagement involves students' emotions towards teachers, friends or academic and school activities. Cognitive engagement includes the willingness and attention exerted by students as an effort to understand learning material or a certain skill.

All dimensions in School engagement are believed to affect student achievement in school. This is supported by various research results. (Fredricks et al., 2004) stated that students who were able to be optimally involved in school showed positive academic presentation results while students who were disengaged in school would actually experience more dropouts. In addition, (Wonglorsaichon et al., 2014) in their research also showed a relationship between the variable School engagement and student achievement. In this case it was found that school engagement of students had a significant relationship with student learning

achievement. Not only that, (Arlinkasari & Akmal, 2017) found that academic efficacy is positively correlated with many studies on School engagement conducted, ranging from the relationship between School engagement and Academic Self, Peer support, academic achievement, and many other studies. School engagement itself is a multidimensional construct that refers to student involvement in the school. In this case, the involvement is reflected in three dimensions, namely behavior, emotional and cognitive. Mandernach (Christenson et al., 2012) states that school engagement is the result of intrinsic motivation or individual needs that make students have positive feelings, foster perseverance and confidence in themselves. In addition, Jimerson, Campos and Greif (Christenson et al., 2012) also state that school engagement includes diverse dimensions, namely the behavioral, emotional and cognitive dimensions. (Klimstra, 2013) states that one of the factors influencing the process of forming adolescent self-identity is how much adolescents are able to find components from various sources to help shape their identity. Therefore, it is important for adolescents as a student to be involved in various activities at school as a forum that can facilitate the exploration process carried out. There are several measuring tools used to measure School engagement, especially in vulnerable children to adolescents, namely the School engagement Measure (SEM), Student School engagement (SSES), Motivation and Engagement Scale (MES), 4-H Study for Positive Youth Development: School engagement Scale, High School Survey of Student Engagement (HSSE) and School

engagement Scale (SES). But these measuring instruments are still rarely translated into Indonesian. Because it is still very rare for these measuring instruments to be translated into Indonesia, so in Indonesia itself there is still very little research on School engagement. After some consideration, the author determined the topic of the measuring instrument to be made was the adaptation of the School engagement Measure (SEM). SEM is a measuring tool developed by Phyllis Blumenfeld and Jennifer Fredricks in 2004, consisting of 19 items and measuring three dimensions, namely behavioral engagement, Emotional engagement and cognitive engagement. All items are scored using a five-point likert scale from never to always. SEM also has good internal validity ( $\alpha=0.83$ ). To date, SEM has been widely used in various studies on careers abroad as well as in Indonesia, however, there has been no research on its validity test other than that conducted by Phyllis Blumenfeld and Jennifer Fredricks (2004). Based on this, this study aims to adapt to SEM so that valid and reliable SEM is obtained for use in Indonesia.

## MATERIALS AND METHODS

### Research Procedure

The measuring tool used to measure the level of School engagement of students is the School engagement Measure (SEM) scale by adapting the scale developed by Fredricks, J.A, Blumenfeld, O., Friedel, J, and Paris, A. (Fredricks et al., 2004), will measure three dimensions, namely Behavior engagement includes the presence of positive behavior, obeying the rules, not

doing various disruptive behaviors in school, Concentrate on following learning, doing assignments, persevering, giving questions, focusing on learning, actively participating in discussions and providing active participation in school activities. Emotional engagement involves students' emotions towards teachers, friends or academic and school activities. Cognitive engagement includes the willingness and attention exerted by students as an effort to understand learning material or a certain skill.

Guidelines for translating and adapting test kits are also issued by the International Test Commission (Gregoire, 2018) which are outlined in The ITC Guidelines for Translating and Adapting Tests. The following are the stages of adaptation carried out by the researcher:

- a. Pre-condition stage. At this stage, the researcher communicated via email and obtained permission from the second researchers, Phyllis Blumenfeld and Jennifer Fredricks, to adapt to the scale of career commitments to Indonesian.
- b. Test development stage. The second stage carried out by the researcher is to translate the scale of the School Engagement Measure (SEM) into Indonesian with the context of Indonesian culture. Translation from English to Indonesian is done by two translators. The criteria for a translator is a person who has adequate knowledge of (1) the language involved, (2) culture, (3) test content, and (4) test principles in general. From these criteria, researchers describe the criteria for translators to be Indonesians who have an IELTS score of at least 7.00 or TOEFL IBT of at least 80, have a background in

psychology, especially educational topics, and have lived in an English-speaking country for more than two years. The process of translating is carried out independently by each translator.

c. The third stage is to synthesize by discussing the results of the translation of the two translators facilitated by the researcher. One whole translation is obtained based on the agreement of two translators. This stage received results in the form of a draft translation of SEM Indonesian.

d. The fourth stage is to review the translation results. A review is carried out to test the equality of translations by experts. Experts in this stage are psychology lecturers who have translation experience and have lived in an English-speaking country for at least two years. The expert gives an assessment of the SEM draft, whether the existing translation is appropriate and has the same meaning as the original language.

e. The fifth stage is the readability test. New sentences in Indonesian consulted linguists. After the statement item was compiled into a scale, it was then tested on 10 ordinary people, namely State High

School Students and conducted cognitive interviews. This is done to see whether the instructions and content of the aitem can be understood by the subject or not. At this stage it produces a semi-final scale of SEM Indonesian (attached).

f. The sixth stage carried out by the researcher is to carry out the lay-out of the instructions and aitems of the SEM statement so that it is ready to be presented to the research subject.

g. The next stage of the researcher tests the suitability of the measurement model for each dimension of the career commitment scale version of Indonesian through a process of confirmatory factor analysis (CFA) and reliability analysis using the classic test theory (CTT) method, with the help of SPSS 24 software. to facilitate the calculation of reliability by calculating

Cronbach Alpha, to see the consistency between items in measuring the construct same. This study involved 213 participants.

This scale consists of 19 items and measures three dimensions, namely behavioral engagement, emotional engagement and cognitive engagement. All items are scored using a five-point likert scale from never to always.

## RESULTS AND DISCUSSION

The results of the initial CFA analysis on the School Engagement Measure variable are presented in table 3. Table 3 shows that in general the measurement model is still not fit. The value of the fit p-value, GFI, RMSEA, NFI, IFI, CFI, TLI, and AGFI still does not match the established criteria. The SEM model and loading factor of each aitem can be seen in figure 1. Because the model is

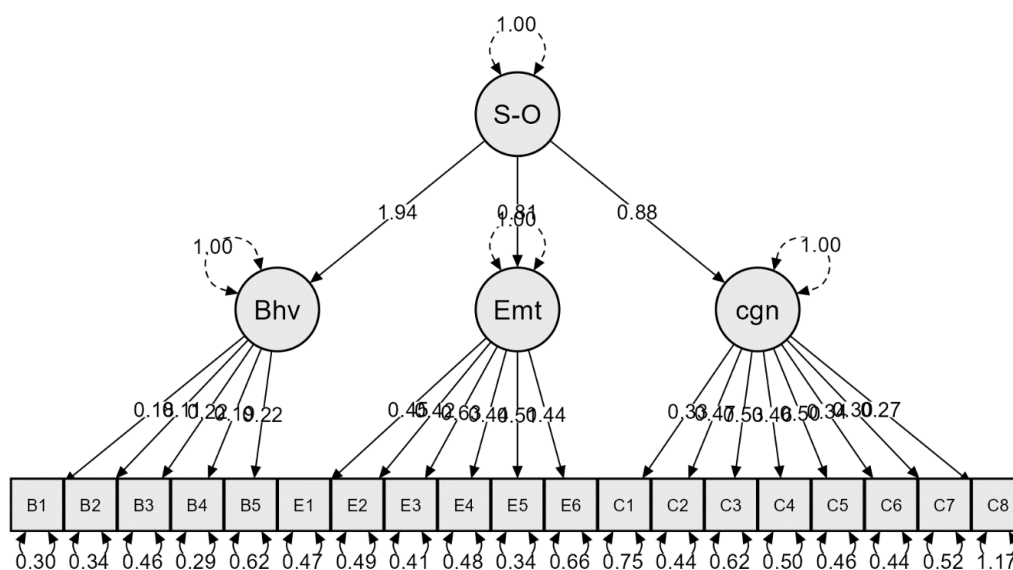
not yet fit, the researcher made modifications to the model to obtain a better model. Model modification is done by removing items that have a loading factor below 0.5. From the initial model analysis, it is known that there are three items that have a loading factor below 0.5, namely B2 (item 2), C1 (item 12), C7 (item 18) B1 (item 1), E1 (item6), E6 (item 11), C6

(item 17), E3 (item 8), and C8 (item 19). Thus, the final model will not include all three aitems. The final model accuracy

parameters after deleting nine items can be seen in table 1.

**Table 1.** Model accuracy parameters before modification

Parameter fit	Output	Criterion	Information
Chi square P-Value	0.025	$\leq 0.05$	Tidak Fit
Comparative Fit Index (CFI)	0.818	$\leq 0.90$	Tidak Fit
Tucker-Lewis Index (TLI)	0.791	$\leq 0.9$	Tidak Fit
Bentler-Bonett Normed Fit Index (NFI)	0.730	$\leq 0.9$	Tidak Fit
Root mean square error of approximation (RMSEA)	0.082	$\leq 0.08$	Tidak Fit
Goodness of fit index (GFI)	0.837	$\leq 0.9$	Tidak Fit



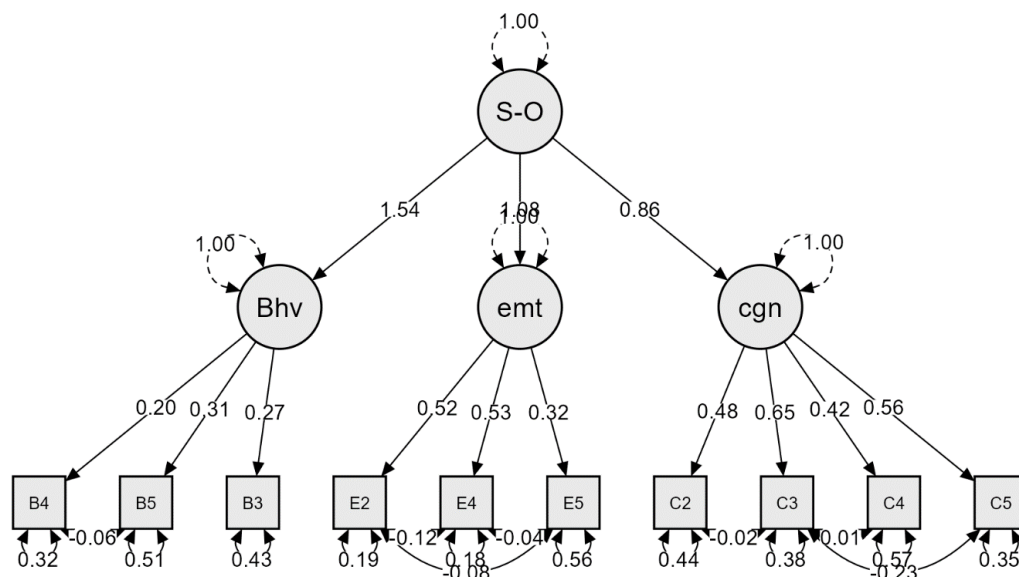
**Figure 1.** Initial measurement model School *Engagement Measure* Variable

Table 1. shows the final model after modification of the model. In the final model, it can be seen that in Chi-square the pvalue value is already above 0.05. This shows that the model has been fit, where there is no significant difference between the ideal model and the proposed model based on observational data. The GFI, NFI,

CFI, TLI, and RMSEA values also match the criteria set for obtaining a fit model. Thus this final model is already fit, which means that the proposed model is fit with empirical data. The complete model and loading factor of each item on the final model can be seen in figure 1.

**Table 2.** Model se accuracy parameters have been modified

Parameter fit	Output	Criterion	Information
Chi square P-Value	0.025	$\leq 0.05$	Tidak Fit
Comparative Fit Index (CFI)	0.949	$\geq 0.90$	Fit
Tucker-Lewis Index (TLI)	0.908	$\geq 0.9$	Fit
Bentler-Bonett Normed Fit Index (NFI)	0.912	$\geq 0.9$	Fit
Root mean square error of approximation (RMSEA)	0.074	$\geq 0.08$	Fit
Goodness of fit index (GFI)	0.955	$\geq 0.9$	Fit



**Figure 2.** Final Variable *School Engagement Measure* measurement model

After that, a reliability test is carried out. The reliability method used to measure this student engagement measure is classic test theory (CTT). The author uses SPSS 24.0 software to facilitate reliability calculations by calculating cronbach alpha, to see the consistency between items in measuring the same construct. The criteria used to determine the level of reliability of

the measuring instrument in this study are based on the criteria from (Kaplan & Saccuzzo, 2017), namely  $\alpha \geq 0.70$  means that the measuring instrument is reliable, and if  $\alpha < 0.70$  indicates that the measuring instrument is not reliable. Based on table 5 it is known that all dimensions in SEM instruments have excellent reliability can be seen in table 6

**Table 3** RallyA Billiard Scale On The School Engagement Measure Questionnaire

Scale	Number of Items	Cronbach's Alpha	Category
student engagement measure	19	.815	Reliable

**Table 4.** Subscale Reliability At Every SEM Dimension

Dimension	Number of Items	Cronbach's Alpha	Category
Behavioral engagement	5	.658	Moderate
Emotional Engagement	6	.825	Reliable
Cognitive engagement	8	.781	Reliable

Based on the table above, it is known that two of the three dimensions have reliable reliability, it can be seen from each dimension that they have a reliability value in the  $>0.70$  range, except behavioral engagement dimension which has a range of  $< 0.70$ , but is still in the moderate category or is still categorized as reliable (Surjaweni, 2014). A discriminant test has been carried out, a item analysis performed by the discriminant item method is an analysis that reveals how much the test item can distinguish between subjects who fall into the high group and subjects who

fall into the low group. The discriminant item of the measuring instrument is derived from the item-correlated value through calculating the reliability of the test tool using the help of SPSS 24.0 for Macintosh software. According to (Azwar, 2016) as a criteria for selecting items based on total item correlation. Usually used rix limit  $\leq 0.30$ . Therefore, all items that reach a correlation coefficient of at least 0.30, the difference is considered satisfactory. From the results of the analysis using SPSS on the student engagement measure scale, results were obtained as in table 5.

**Table 5.** Discriminant Item Analysis Results on a school engagement measure scale

Item Number	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted	Classification
1	.389	.846	Satisfying
2	.223	.851	Unsatisfactory
3	.458	.843	Satisfying

4	.446	.844	Satisfying
5	.379	.846	Satisfying
6	.414	.845	Satisfying
7	.580	.838	Satisfying
8	.498	.841	Satisfying
9	.590	.837	Satisfying
10	.520	.840	Satisfying
11	.391	.846	Satisfying
12	.377	.847	Satisfying
13	.527	.840	Satisfying
14	.521	.840	Satisfying
15	.426	.844	Satisfying
16	.567	.838	Satisfying
17	.440	.844	Satisfying
18	.390	.846	Satisfying
19	.302	.852	Satisfying

## CONCLUSIONS

The purpose of this study is to adapt the SEM instrument so that it can be used in Indonesia. Based on the results described above, it can be concluded that the School Engagement Measure consists of Behavior Engagement, Emotional Engagement, and Cognitive engagement. This suggests that SEM has evidence of the validity of the internal structure. In addition, SEM also has evidence of discriminant validity. The reliability of SEM is also classified as very good, so it will provide relatively consistent results when re-measurements are taken. Thus, it can be said that this measuring instrument can already measure what you want to measure can be used on individual student respondents aged 12-18 years in

Indonesia. This can be seen from valid items and fit models.

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