

Measuring Quality of Early Childhood Education Life: A Confirmatory Factor Analysis of Quality of School Life Questionnaire in ECE Setting

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Abstract— Currently, early childhood education is growing rapidly. Parents and even every society members begin to realize that early childhood education becomes important in an attempt to stimulate child both in physical, cognitive, affective, as well as psychosocial development. The aim of this research is to investigate and to build a tool of quality of early childhood education (ECE) life from parents' perspective. Data were collected from 731 parents of students of ECE in Jakarta. In order to test the validity and reliability, this research using content validity by expert judgement, internal consistency, and confirmatory factor analysis. The result showed from seven dimensions of Quality of ECE Life, there are three dimensions are fit, and four dimensions still require comparison test with different samples to obtain more conclusive results. It can be said that this quality of ECE life measurement tool still need to be field tested in a broader scope with various sample of different ECE to set an instrument that truly valid and reliable to measure quality of ECE life.

Keywords: *quality of early childhood education (ECE) life, internal consistency test, confirmatory factor analysis*

I. INTRODUCTION

ECE (Early Childhood Education) program nowadays is growing rapidly. Parents and even every level of society begin to realize the importance of this ECE program as an effort to stimulate the development of children, either the physical, cognitive, affective and psychosocial development. Based on the data, it is known that the number of ECE service institutions in the province of DKI Jakarta currently reaches 5,550 ECE units. Consisting of 2,466 Kindergartens, 496 Playgroups, 8 Daycares, 1,588 units of Non-Formal ECE and 1,007 RaudlatulAthfal (RA; ECE program under the management of Indonesian Ministry of Religious Affairs).

Considering the importance of this ECE program therefore ECE management should be pursued in such a

way so that the ECE has a good life quality. The quality of school life is the level of a students' welfare and satisfaction in general in their school life, seen from the student's positive and negative experiences in schools and the activities done at school (Linnakyla in [1]). At the ECE level, information on the level of a student's welfare and satisfaction in life at their school can be obtained from their parents. Thus, the assessment of quality of life of ECE students in schools can be obtained from the perceptions of ECE students' parents towards the development and activities done by their children while in ECE.

Parsons argues that every social system must deal with four functional problems: adaptation, goal acquisition, integration and latency. Thus, at this level the expectations of the society of school or school activities are technical competence, self-development, social integration and social responsibility. To meet these expectations, schools are structured in such a way as to establish a structure that meets the standards, instructional arrangements composed in the curriculum, internalized socialization in educational goals and lived values, and also school control and school discipline under the supervision of the school. In the perspective of students, the school structure is experienced by students in the form of learning opportunities, learning meanings, student role identification, and self-perception of their status as students in the school [2].

Leonard [3] incorporates the definition of quality of school life from a variety of experts, namely the synthesis of positive thoughts, negative thoughts and feelings that are associated with school life and the results obtained from the learning process at the school. There are two general aspects and five specific aspects of the quality of school life. Two common aspects are the general satisfaction and negative affect. General satisfaction reflects cozy feelings toward the school as a whole. In this study, general satisfaction dimension was seen from the perspective of parents' satisfaction

and positive feelings of their children at school. Whereas negative affect is the perception of students who think school can bring up feelings or negative emotions. In this study, the negative affect was seen from the perspective of parents' negative feelings when a child is at school.

While the five specific aspects of the quality of school life, includes: 1) teachers, 2) social integration, 3) opportunities, 4) the achievement and 5) adventure. First, teachers/teacher-student interaction is student's satisfaction towards their relationship with their teachers. In this study, the dimension of teacher was seen from the perspective of parents towards the interaction of teachers with children at school. Second, the social integration is the students' perception of the social life at school and the role of schools in shaping these social skills. In this study, the dimension of social integration was seen from the perspective of parents towards their children's relationship with their friends at school. Third, the opportunity is the perception of students that schools prepare them for the opportunities that they will face in the future. In this study, the dimension of opportunity was seen from the perspective of parents towards the opportunities provided by their children's school for their children's future. Fourth, achievement is the students' perception of achievement/success that they obtained from the school. In this study, the dimension of achievement was seen from the perspective of parents towards their children's achievement and success feelings that their children have towards school assignments. Fifth, adventure is a student's perception towards comfort and joy they get from school. In this study, the dimension of adventure was seen from the perspective of parents towards children's self-motivation and fun activities for their children at school [3].

In addition, the implementation of the ECE program refers to the general principles embodied in the Convention on the Rights of the Child. The principles of early childhood education set include the following: 1) oriented to the needs of the child, in accordance with the development of the child, in accordance with the uniqueness of each individual, 4) learning activities are done through playing, 5) child-centered learning 6) the child as an active learner, 7) the child learns from the concrete to the abstract, from the simple to the complex, from movement to verbal, and from their own self to social, 8) provide an environment that supports the learning process, 9) stimulate the emergence of creativity and innovation, 10) developing life skills of the child, 11) using various sources and learning media available in the surrounding environment, 12) the child learns according to their social cultural conditions, 13) involving parent's participation and 14) comprehensive educational stimulation covers all aspects of development [4].

Furthermore, Pang [5] states that the quality of

school life is an abstract term and very subjective. Different people may have different insights and concepts about the quality of school life. This is because "quality" is a difficult term to explain. In fact, Harvey and Green's describes five definitions of quality, namely quality as an effort to achieve goals, quality as a process towards perfection, quality as agent of change, quality is a high standard, quality asefficiency and other definitions that may be used accordingly depending on the context and timing.

Thus, not only the quality of life of a school that needs to be considered, but also the quality of ECE life should be given special attention, considering that ECE is the first gate of a child entering the school world and knowing with formal education. Awareness of parents, ECE administrators, educators and observers of ECE, and all levels of society regarding the quality of life of this ECE need to be encouraged so that the management and development of ECE in Indonesia can increase its service for early childhood and for the education of Indonesian society in general.

II. RESEARCH METHOD

Participants in this study were 731 parents of students of ECE in Jakarta, with details as follows:

a) 391 female participants (53.5%) and b) 340 male participants (46.5%). Data were collected by non-probability sampling technique through paper-based questionnaire. A hundred copies of questionnaire were distributed to parents of students of ECE in Jakarta. All participants who agreed to participate received a brief explanation about the purpose of the study, signed the consent form, and completed the questionnaire. All data were collected within two months duration.

The school life-quality measuring instrument used in the Ainley & Bourke theory [2], reveals that there are generally two global feelings of quality of school life: (a) general satisfaction, and negative affect, and five specific dimensions of the schools which are: (a) teacher;

(b) social integration; (c) opportunity; (d) achievement; (e) adventure. The scale used is in the form of Likert scale, which on the scale consists of answers Disagree (D), Somewhat Disagree (SD), Somewhat Agree (SA), and Agree (A). ECE Life quality measuring instrument consists of 40 divided into six statements on the dimensions statements on the general satisfaction, five statements on the dimensions of negative affect, eight statements on the social integration dimension, five statements on the achievement dimension, six adventure dimension and five statements on the teacher dimension.

III. RESULT

A Reliability Test Results

Measurements of the quality of school life variables using the Quality of School Life measuring instrument adapted from Leonard (2008). The questionnaire has four measurement scales namely (1= Agree, 2= Somewhat agree, 3= Somewhat disagree, 4= disagree). This questionnaire has 40 statements about the quality of ECE life. All of the statements are positive statements, and there are no negative statements. After the reliability test, no statement is discarded because all the scores of corrected item total correlation are more than 0.2.

Table 1: Reliability Test

Aspects	Items	Items	Alpha Cronbach
	Before	After	
	Reliability Test	Reliability Test	
G.Sat	6	6	0,708
Neg.Aff.	5	5	0,796
Soc. Int.	8	8	0,721
Ach	5	5	0,817
Opp	6	6	0,886
Adv	5	5	0,832
Teacher	5	5	0,721
Total	40	40	

B.Results of confirmatory factor analysis

Table 2: The result of CFA calculation on General Satisfaction dimension.

No	Est (lf)	Est (lf)	Std	Std	t-val	t-val
	bef	aft	Bef	Aft	Bef	Aft
1	0,23	-	0,42	-	11,22	-
8	0,26	-	0,26	-	6,70	-
11	0,47	0,47	0,83	0,83	26,13	25,93
17	0,44	0,44	0,73	0,74	21,69	21,87
21	0,48	0,47	0,78	0,78	24,18	23,83
33	0,40	0,40	0,77	0,77	23,20	23,18

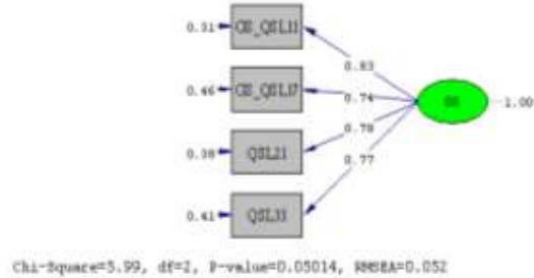


Figure 1. Output Standardized Value on General Satisfaction dimension

Inf: most of loading factor is good (>0,05) only point 1 and 8 are not good, however for t statistic>1,96 which means the indicator/statement can still be seen as the former from general satisfaction dimension.

The Fit Model test results shows the score of Chi- Square= 5,99, P-value = 0,05014, RMSEA = 0,052

(This model is still acceptable because P value> 0,05 and RMSEA is already < 0,05-0,08

Based on the above CFA calculation stated that 6 statements on the dimensions of general satisfaction, there are 4 statements that will be used as an indicator of the dimension. Two statements will be discarded because they have smaller t-values than any other statement,which can be interpreted as less supported to the measured dimension.

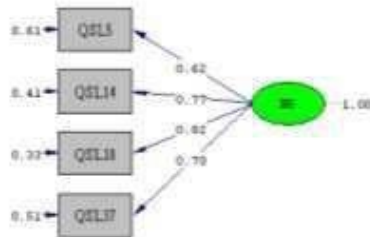
Inf: most of loading factor is good (>0,05) only point **28** are not good, however for t statistic>1,96 which means the indicator/statement can still be seen as the former from negative affect dimension.

The Fit Model test results shows the score of Chi-Square= 4,56, P-value = 0,10238, RMSEA = 0,042 (This model is still acceptable because P value> 0,05 and RMSEA is already <0,05-0,08

Based on the above CFA calculation stated that 5 statements on the dimensions of negative affect, there are 4 statements that will be used as an indicator of the dimension. One statement will be discarded because they have smaller t-values than any other statement, which can be interpreted as less supported to the measured dimension.

Table 3: The result of CFA calculation on Negative Affect dimension.

No	Est (lf)	Est (lf)	Std	Std	t-val	t-val
	bef	aft	Bef	Aft	Bef	Aft
5	0,53	0,53	0,62	0,62	17,09	17,09
14	0,57	0,52	0,76	0,77	22,27	22,26
18	0,60	0,60	0,82	0,82	24,58	24,16
28	0,38	-	0,46	-	12,09	-
37	0,57	0,56	0,71	0,70	20,26	19,89



Chi-Square=4.56, df=2, P-value=0.10238, RMSEA=0.042

Figure 2. Output Standardized Values on Negative Affect dimension.

Inf: most of loading factor is good (>0,05) only point **3 and 29** are not good, however for t statistic>1,96 which means the indicator/statement can still be seen as the former from social integration dimension.

The Fit Model test results shows the score of Chi-Square= 206,83, P-value=0,05620, RMSEA = 0,074 (This model is still acceptable because P value> 0,05 and RMSEA is already <0,05-0,08

Based on the above CFA calculation stated that 8 statements on the dimensions of social integration, there are 6 statements that will be used as an indicator of the dimension. Two statements will be discarded because they have smaller t-values than any other statement, which can be interpreted as less supported to the measured dimension.

Table 4: The result of CFA calculation on Social Integration dimension.

No	Est (lf)	Est (lf)	Std	Std	t-val	t-val
	bef	Aft	Bef	Aft	Bef	Aft
3	0,23	-	0,36	-	8,92	-
6	0,35	0,35	0,56	0,57	14,49	14,54
20	0,46	0,46	0,68	0,68	18,13	18,16
24	0,49	0,46	0,53	0,51	13,60	12,89
29	0,24	-	0,24	-	5,71	-
30	0,24	0,35	0,64	0,64	16,91	16,84
35	0,51	0,49	0,59	0,57	15,55	14,67
36	0,39	0,41	0,54	0,56	13,77	14,23



Chi-Square=206.83, df=9, P-value=0.05620, RMSEA=0.074

Figure 3. Output Standardized Values on Social Integration dimension.

Table 5: The result of CFA calculation on Achievement dimension

No	Estimates (loading factor)	Std	t-values
4	0,42	0,57	15,38
7	0,50	0,75	21,79
16	0,49	0,80	23,92
26	0,44	0,67	19,07
40	0,44	0,67	18,84

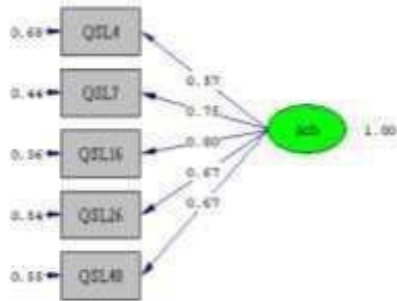


Figure 4. Output Standardized Values on Achievement dimension.

Inf: loading factor is good (>0,05) for t statistic>1,96 which means the indicator/statement can still be seen as the former from achievement dimension.

The Fit Model test results shows the score of Chi-Square= 15,11, P-value=0,05989, RMSEA = 0,053 (This model is still acceptable because P value> 0,05 and RMSEA is already < 0,05-0,08. This result showed that achievement dimension was supported by all of its items.

Table 6: The result of CFA calculation on Opportunity dimension.

No	Estimates (loading factor)	Std	t-values
9	0,39	0,75	22,65
12	0,34	0,74	22,25
15	0,33	0,80	24,93
25	0,35	0,69	20,43
31	0,35	0,79	24,65
39	0,34	0,77	23,60

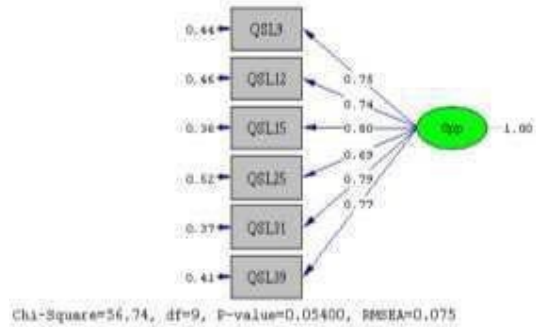


Figure 5. Output Standardized Values on Opportunity dimension.

Inf: loading factor is good (>0,05) for t statistic>1,96 which means the indicator/statement can still be seen as the former from opportunity dimension.

The Fit Model test results shows the score of Chi-Square= 56,74, P-value=0,05400, RMSEA = 0,075 (This model is still acceptable because P value> 0,05 and RMSEA is already < 0,05-0,08. This result showed that opportunity dimension was supported by all of its items.

Table 7: The result of CFA calculation on Adventure dimension.

No	Estimates (loading factor)	Std	t-values
10	0,38	0,60	16,48
13	0,38	0,72	20,98
23	0,42	0,77	22,93
27	0,40	0,70	20,18
32	0,39	0,77	22,79

Table 8. The result of CFA calculation on Teacher dimension.

No	Est (lf)	Est (lf)	Std Bef	Std Aft	t-val Bef	t-val Aft
2	0,36	0,37	0,68	0,69	18,12	18,34
19	0,29	-	0,38	-	9,42	-
22	0,42	0,40	0,54	0,51	13,86	13,06
34	0,36	0,34	0,67	0,63	17,73	16,54
38	0,48	0,50	0,75	0,78	20,17	20,94

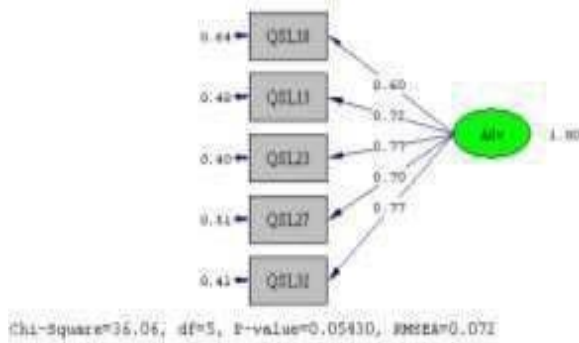


Figure 6. Output Standardized Values on Adventure dimension.

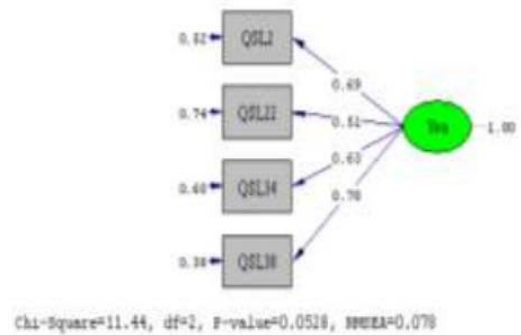


Figure 7. Output Standardized Values on Teacher dimension.

Inf: loading factor is good ($>0,05$) for t statistic $>1,96$ which means the indicator/statement can still be seen as the former from adventure dimension.

The Fit Model test results shows the score of Chi-Square= 36,06, P-value=0,05430, RMSEA = 0,072(This model is still acceptable because P value $> 0,05$ and RMSEA is already $< 0,05-0,08$. This result showed that adventure dimension was supported by all of its items.

Inf: most of loading factor is good ($>0,05$) only point 19 are not good, however for t statistic $>1,96$ which means the indicator/statement can still be seen as the former from teacher dimension.

The Fit Model test results shows the score of ChiSquare= 11,44, P-value=0,0528, RMSEA = 0,078 (This model is still acceptable because P value $> 0,05$ and RMSEA is already $< 0,05-0,08$

Based on the above CFA calculation stated that 5 statements on the dimensions of teacher, there are 4 statements that will be used as an indicator of the dimension. One statement will be discarded because they have smaller t-values than any other statement, which can be interpreted as less supported to the measured dimension.

Table 9: Summary of CFA Calculations on the 7 dimensions of the Quality of ECE Life.

No	Dimension	CFA Results
1	<i>General Satisfaction</i>	Not fully fit
2	<i>Negative affect</i>	Not fully fit
3	<i>Social Integration</i>	Not fully fit
4	<i>Achievement</i>	Fit
5	<i>Opportunity</i>	Fit
6	<i>Adventure</i>	Fit
7	<i>Teacher</i>	Not fully fit

IV. CONCLUSION

The measuring instrument test results, from 7 dimensions with a total of 40 statements of statements, showing good alpha cronbach calculations in the sense that all dimensions have adequate internal consistency without discarding any statement in each dimension. The next calculation stage of confirmatory factor analysis shows that from the 7 dimensions, there are 3 fully fit dimensions, and 4 dimensions still require comparative tests with different samples to obtain more convincing results. Thus, the measuring instrument of the quality of ECE that has been arranged can actually be said as adequate, but field test still needs to be done in a wider scope. Given the need for measuring instrument to see the quality of school life, especially ECE, the development of quality of ECE life measuring instrument from the parent's perspective needs to be studied further with a larger sample. Larger sample comparisons are expected to result in more in-depth analysis and result in higher quality measuring instruments.

For parents of ECE students, in choosing a school (in this case ECE) for their children, should consider the quality of school life. This is important to be considered, because aspects of the quality of school life such as teachers, student satisfaction with the school in general, interaction with teachers, interaction with other students in school, learning opportunities provided by schools, school activities and feelings of success obtained by students from teaching and learning activities at school strongly support the formation of student's positive attitude towards learning. This positive attitude towards learning is the basic foundation for children to move forward and develop in preparing for a better future.

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Dekan



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