Young Lives

An International Study of Childhood Poverty

YOUNG LIVES SCHOOL SURVEY

VALIDATION OF THE ACADEMIC SELF-CONCEPT QUESTIONNAIRE IN THE VIETNAM SCHOOL SURVEY ROUND 1

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Overview

The Vietnam School Survey captures detailed information about children's schooling experience and was administered in October-December 2011 (first wave) and in April-June (second wave). This included questions intended to measure 'academic self-concept' (ASC). Academic self-concept may be defined as a student's self-perception of their academic ability which influences – and is influenced by – student's academic performance (Liu & Wang, 2008; Tan & Yates, 2007; Marsh & Hau, 2003). The concept of academic self-concept may be particularly important in Vietnam for two main reasons. First, the Confucian Heritage Culture (CHC) stresses the importance of hard work and diligence over ability. Second, there is evidence indicating the mediating role of academic self-concept in the acquisition of other positive educational outcomes. Using the first wave of data the scales were validated using both exploratory and confirmatory factor analysis. Rasch analysis was then used to create interval level data for academic confidence and academic stress at Time One (T1) and Time Two (T2).

Rationale for the Inclusion of a Measure of ASC

Self-concept is considered is a multi-dimensional construct referring to an individual's perception of the self and is developed in interaction with the environment and others (Marsh & Shavelson, 1985). Academic self-concept (ASC), a sub-domain of general self-concept, indicates students' perceptions of their academic ability formed in conjunction with peers, teachers and parents (Marsh, 1987; Marsh & Hau, 2003; Liu & Wang, 2008). ASC is important for students' personal adjustment and for the influence it has on other desired educational outcomes such as academic achievement, educational aspirations, school completion and subsequent university attendance. The link with these outcomes is based on the idea that individuals are likely to accomplish more if they feel more competent, have high self-confidence and have more positive perceptions of themselves (Marsh & Hau, 2003; Tan & Yates, 2007). ASC has relevance for educational policy throughout the world and may have a role in addressing educational inequalities experienced by disadvantaged groups (Marsh & Hau, 2003,2004). ASC is particularly important in Vietnam where the influence of Confucian Heritage Culture (CHC) places significant emphasis on the willingness to work hard and diligence rather than ability in relation to academic outcomes (Salomon & Ket, 2007; London, 2010; Nguyen, 2007). Thus an investigation of student's academic self-concept in Vietnam is warranted.

The Academic Self Concept Questionnaire

Recognising the important influence of CHC on the development of academic self-concept where hard work and commitment are emphasised over ability, Liu, Wang and Parkins (2005) designed

the Academic Self-Concept Questionnaire (ASCQ) to assess students' academic self-concept in Singapore. The development of the ASCQ reflects the conceptualisation of academic self-concept as a hierarchical model consists of one overarching higher order factor, academic self-concept, (20 items) and two first-order factors (academic confidence) and (academic effort). Academic confidence assesses students' feelings and perceptions about their academic competence while academic effort investigates students' commitment to and involvement and interest in schoolwork. The validity and reliability of the ASCQ (Liu & Wang, 2005) have been established in previous studies in Singapore with cronbach's alpha (α) ranging between 0.71 and 0.89 (see Appendix A). Due to the fact that the ASCQ (Liu & Wang, 2005) seeks to capture the meaning of academic self-concept in a setting defined by CHC, this scale was considered to be appropriate for the Schools Survey in Vietnam, as it was thought that this scale would have more relevance than scales developed in Western settings. The original ASCQ was translated in Vietnamese and back-translated into English. Answers to the individual items were rated on a four point scale ranging from 'strongly agree' (1) to 'strongly disagree' (4). Full piloting of the scale was undertaken which involved staff members from GSO, CAF and Young Lives Oxford to help to refine the questionnaires.

Validation of the Scale in the Vietnamese Context

The ASCQ was administered to 3284 children from all Young Lives younger cohort children and their peers in Grade 5 across the 5 Young Lives provinces and 20 communes in Vietnam. The first wave was conducted at the beginning of the school year in autumn 2011 and the second wave was carried out at the end of the school year in summer 2012. For the purpose of validation, data from the first wave of the study were used and the this sample was randomly split into two sub-samples in order to facilitate cross validation using Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA): sub-group 1 consisted of 1640 students (EFA) and sub-group 2 consisted of 1644 students (CFA).

Validation Stage One – Exploratory Factor Analysis

EFA was carried out on the 20 items of the 'academic self-concept' scale (Liu, Wang & Parking, 2005) on sub-group 1 (n = 1640) of the first wave of data collected at the beginning of the school year using Principal Components Analysis using SPSS statistical software package, version 18. Prior to analysis, the items were examined for accuracy, missing values and outliers and all relevant items were reverse scored (Items 1, 4, 7, 9, 11, 13, 14, 16, 17, 20). The percentage of missing data fell between the range of 0.4 to 1.4. As such, it was decided that the data were

missing at random. To facilitate the interpretation of scores all items were re-coded so that higher scores were indicative of higher levels of academic self concept and lower values were indicative of lower levels of academic self-concept. Summary statistics were generated for each item and these are presented in Appendix B. Also, after inspecting the correlation matrix (Appendix C), it was decided that there was sufficient correlation among the variables in order to conduct factor analysis (Floyd & Widman, 1995). Item four – 'I often do my homework without thinking' - was found to produce a distorted correlation and a decision was made to remove this item from the subsequent analysis.

To assess the factorability of the data, Bartlett's test of sphericity (Bartlett, 1954) and the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (Kaiser, 1970, 1974) were conducted (see Appendix D). The KMO index was found to be 0.83 which was considered adequate and above the recommended minimum of 0.6. The null hypothesis was rejected for Bartlett's test of sphericity ($p < .05$) indicating that it was appropriate to conduct factor analysis (Tabachnick & Fidell, 2007). To decide what factors to retain a combination of three decision rules were used. Kaiser's criterion which looks for eigenvalues above one identified the presence of six components explaining a total of 49% of the variance (see Appendix E). Inspection of the scree-plot indicated a significant elbow after the first factor with another elbow following the third factor (Appendix F). Third, parallel analysis whereby eigenvalues obtained from the current study were compared to those obtained from a randomly generated set of data of the same size with the same number of variables (Watkins, 2000) revealed the presence of three factors (Appendix G). Due to the discrepancies between these results, multiple rotations were run in order to determine the most appropriate number of factors to retain manually, first based on the one factor model suggested by the scree test, secondly on the a-priori two factor structure and then thirdly on the three factor solution suggested by parallel analysis. The item loadings were then compared and the two factor solution was found to have the cleanest solution in that all item loadings were above 0.30 and no items were cross-loading (Costello & Osborne, 2005) (Appendix H). This solution was considered the best fit to the data as it produces the most parsimonious solution and also best reflects the theoretical models of ASC as identified by Liu, Wang & Parking (2005) and thus the two factor model was retained.

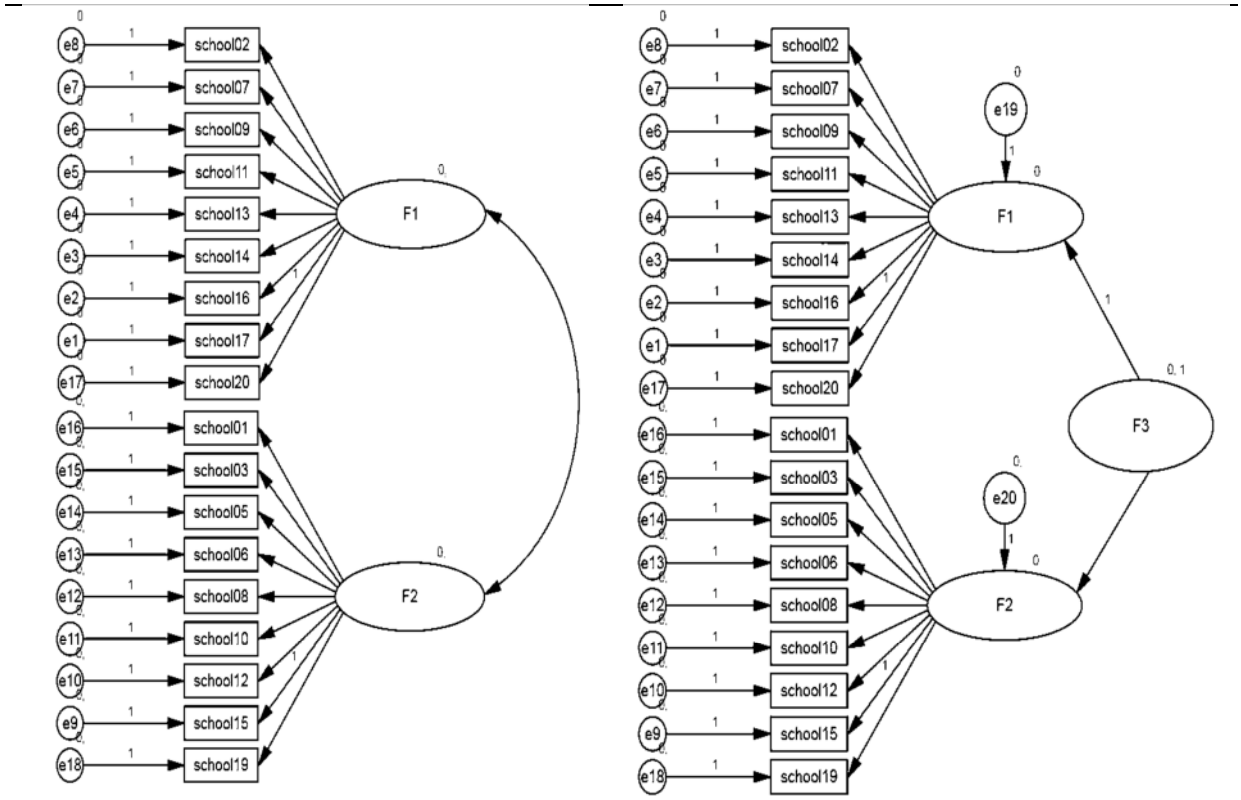
The items were rotated using oblique rotation (Direct Oblimin method) as it was hypothesised that the factors would be correlated (Costello & Osborne, 2005) and only variables with loadings of 0.30 and above were interpreted (Tabachnick & Fidell, 2007). Item 18 – 'I do not give up easily when I am faced with a difficult question in my schoolwork' - had loading less than 0.30 and was subsequently removed from the analysis. The items were found to load well on the two components and explained 27% of the overall variance (19% and 8% respectively). However,

some of the items were found to load on different factors than identified in the original scale. For example, item 14 – 'I often feel like quitting school' – was found to load on academic confidence in the current study and academic effort in the original scale while item 1 – 'I can follow the lessons easily' – was found to load on academic effort in this study rather than academic confidence in the original scale. This may be a result of issues such as cultural differences or translation issues and has important implications for the way in which the composite scores are computed for consequent analyses (Geisinger, 1994).

Validation Stage Two: Confirmatory Factor Analysis

Confirmatory Factor Analysis using Amos (Arbuckle, 2006) was carried out to confirm the two factor solution that emerged from the data in the first stage of the analysis using the second subsample of the population (n = 1644) collected at the first wave of data collection. The proposed model is presented in Figure 1a and was tested using maximum-likelihood method and the covariance matrix was calculated for this model.

Figure 1. Proposed Models: Two Factor (1a, left) and Higher Order Two Factor Model (1b, right)



Absolute and incremental fit indices were assessed and the results are presented in Table 1 to provide a comprehensive fit of the model. Absolute fit indices provide the most fundamental

indication of how well a specified a-priori model fit the data (Hooper, Coughlan & Mullen, 2008). The Chi-Square statistic of the null hypothesis of a good fitting model was rejected $\chi^2(134) = 743.40.87$, $p < 0.05$. However, it is suggested that this index is problematic in large sample sizes and therefore alternative fit indices were consulted (Hooper, Coughlan & Mullen, 2008). The Root Mean Square Error of Approximation (RMSEA) indicated that the model was a good fit, RMSEA = 0.052 with a 90% confidence interval falling between the range of 0.049 to 0.056. Secondly, the incremental fit indices, which are not influenced by sample size (Marsh, Balla & Hau, 1996), which compare the chi-square value to a baseline model and analyse model fit based on comparisons between the hypothesised model and a null model were consulted (Hooper, Couglan & Mullen, 2008). The Comparative Fit Index (CFI = 0.78) and the Tucker-Lewis Index (TLI = 0.83) both indicated a reasonable fit. The standardised regression weights were also inspected and the results are presented in Appendix I.

Table 1. Fit Indices

	Fit Index	Acceptable Threshold	ASC
Absolute Fit Indices	χ^2	$p > 0.05$	$\chi^2(134) = 743.40.87$, $p < 0.05$
	χ^2/df	2:0 - 5:0	5.48
	RMSEA	< 0.07	.052
	RMSEA 90% C.I.	0.00 to 0.08	.049 to .056
	Fit Index	**Acceptable Threshold**	**ASC**
Incremental Fit Indices	TLI	> 0.95	.78
	CFI	> 0.90	.83

In order to investigate whether the two factors obtained in the current analysis were underpinned by a higher order factor (academic self-concept) and two first-order factors (academic confidence and academic effort), as conceptualised by Liu and Wang (2005), confirmatory factor analysis was carried out on a hierarchical model consisting of the two factors together with a higher order factor (see Figure 1b). However, the solution obtained from this proposed model was inadmissible, thus suggesting that the model was not the correct fit to the data.

A two factor model emerged from the data (see Appendix J). An example of an item measuring factor one is ‘I day dream a lot in class ‘while an example of an item measuring factor two is ‘I can follow the lessons easily’. Reliability analysis, using Cronbach’s alphas indicated moderate-to-high reliability for each subscale: factor one (9 items) = .70 and factor two (9 items) = 0.65. The items that loaded on these two factors were different to the loadings of the original scale and

further examination of the results indicated that the item loadings of the two factors are strongly influenced by the positive and negative phrasing of the items. A possible explanation for this may be that difficulties were encountered in the translation of the negatively phrased items or that children encountered difficulties with the negative phrasing requires higher level of verbal reasoning than required by positive items as suggested by Benson and Hocevar (1985). Thus future studies should give careful consideration to using a combination of positively and negatively phrased items. Nonetheless, the similarity in loadings of the items on the two factors between the original scale and the scale administered in Vietnam was considered adequate to retain the distinction between academic confidence and academic effort. Overall, the evidence generated in the current study suggests that the ASCQ scale, originally developed for used in Singapore, can be used to confidently assess academic confidence and academic effort in Vietnam.

Rasch Analysis

The quality of the instrument reflects the confidence with which we can draw inferences about a construct. Unfortunately a large majority of empirical studies do not include the deliberate construction of a variable before performing the statistical analysis instead using raw scores with the belief that each item contributes equally to the measure of the construct and that each item is measured on the same interval scale. The Rasch model can be used to transform raw data from the human sciences into abstract, equal-interval scales based on the principle that individuals are more likely to answer easy items correctly than difficult items, and all items are more likely to be passed by person of high ability than by those of low ability. Rasch analysis was performed on each identified subscale separately using Stata software to investigate the functioning of the items and the overall fit of the data to the Rasch model. As the responses to the ASCQ were recorded on a Likert scale polytomous Rasch modelling was first employed. The Partial Credit Model considers the implications of an ordered set of response categories for each pair of adjacent categories (Masters, 1988). However, this approach identified that many of the item thresholds were disordered and that there was a positive response bias among the items. As previously identified, justification for the use of polytomous Rasch model over the dichotomous Rasch model requires that the sample varied enough in the presence of the underlying psychological construct that all the response options for all of the items will be used (Bond & Fox, 2001). As this was not found to be the case for the current data a decision was made to collapse the response categories from four to two and Rasch analysis was carried out on the dichotomised responses and with the assumption that no information about the latent trait being lost. The frequencies of the dichotomised responses for the ASCQ are presented in Appendix K.

Rasch Analysis of Factor One

Rasch analysis was undertaken on ten items of factor one of the ASCQ using CML estimation as identified through exploratory and confirmatory factor analysis. In the first analysis several items had a bad fit according to the *R*1*c* statistic and an iterative process was undertaken whereby items that had a bad fit were dropped from the model based on items that produced a significant U value and outfit and infit standardised statistics. In addition, the ICCs were inspected to inspect the fit of the items (see Figure 1). Seven items were removed from factor one of the ASCQ scale because they caused a bad fit of the data to the Rasch model and the remaining three items had a non-significant *R*1*c,* U, infit and outfit statistics (see Table 2).

Table 2: Fit Statistics

	Difficulty				Standardized			
Items	**Difficulty Parameters**	**Std Err.**	**Ric**	**Df**	**p-values**	**Oufit**	**Infit**	**U**
School13	0.56902	0.03695	0.081	1	0.7758	-0.305	-0.300	-0.161
School14	-1.30715	0.05186	0.247	1	0.6191	-0.707	-0.293	-0.557
School17	0.73813	0.03687	2.719	1	0.0991	1.584	1 .585	0.940
R1c test	R1c= 3.551 2 0.1694							
Andersen LR test	Z= 3.411 2 0.1817							
The mean of the difficulty parameters is fixed to 0								

Rasch Analysis of Factor Two

Rasch analysis was conducted on factor two of the ASCQ using CML estimate. However this model could not be estimated as there was not sufficient variation across the range of scores and a decision was made to remove the items that had the least variation in the responses which resulted in the removal of items 8, 10, 12 which allowed the Rasch model to be generated. In the first instance item 6 and 15 demonstrated bad fits to the Rasch model as indicated by a significant U value and outfit and infit statistics. The remaining three items had a non-significant *R*1*c,* U, infit and outfit statistics and demonstrated a good fit to the model.

Table 3: Fit Statistics

	Difficulty				Standardized			
Items	**Difficulty Parameters**	**Std Err.**	**Ric**	**Df**	**p-values**	**Oufit**	**Infit**	**U**
School03	-0.68871	0.03380	0.006	1	0.9393	0.057	0.069	0.044
School05	-0.91142	0.03545	0.920	1	0.3375	-1.312	-1.220	-0.738
School19	1.60014	0.03393	9.316	1	0.0023	1.671	0.243	1.707
R1c test	R1c= 10.796 2 0.0045							

Andersen LR test Z= 9.697 2 0.0078
The mean of the difficulty parameters is fixed to 0

Creating T1 and T2 scores

The items collected at the beginning and at the end of the school year, were pooled to allow for the creation of scores from the first (T1) and second (T2) wave of data collection. The summary statistics for these scores are presented in Table 4.

Table 4. Summary Statistics for the Academic Confidence and Academic Effort

Scale	***Mean***	***SD***	***Minimum***	***Maximum***
Academic Confidence T1	1.60	1.038	-2.47	2.30
Academic Effort T1	1.22	1.33	-2.44	2.72
Academic Confidence T2	1.66	1.04	-2.47	2.30
Academic Effort T2	1.22	1.35	-2.44	2.72

Conclusions

The psychometric properties of the ASCQ (Liu et al. 2005) was conducted in two stages were assessed using exploratory factor analysis, conducted on subsample one (n=1640) of the entire sample and confirmatory factor analysis, using subsample two (n=1644), and these results confirmed the presence of two first order factors, academic confidence and academic effort. Rasch analysis then was undertaken to create interval level measures. In summary this process has revealed a justifiable scale for measuring academic self-concept in students in Vietnam.

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Appendices

Appendix A: Reliability Co-Efficients (α) for ASCQ across Studies

Reference	ASC	Confidence	Effort
Liu et al. (2005)	0.82	0.71	0.76
Liu & Wang, (2008)	0.83 to 0.86	0.73 to 0.79	0.75 to 0.79
Liu (2009)	0.89	0.87	0.83

Appendix B: Summary Statistics for Each Item

Variable	N	Min	Max	Mean	s.d
1. I can follow the lessons easily.	3263	0	3	2.28	.684
2. I day dream a lot in class.	3260	0	3	2.12	.795
3. I am able to help my classmates with their schoolwork if permitted.	3245	0	3	2.27	.812
4. I often do my homework without thinking.	3246	0	3	1.36	.891
5. If I work hard I think I can go to the college or university.	3254	0	3	2.37	.769
6. I pay attention to the teachers during lessons.	3243	0	3	2.51	.610
7. Most of my classmates are smarter than I am.	3253	0	3	1.92	.797
8. I study hard for my tests.	3245	0	3	2.59	.628
9. My teachers feel that I am poor in my work.	3238	0	3	2.08	.811
10. I am usually interested in my schoolwork.	3242	0	3	2.38	.653
11. I often forget what I have learnt.	3235	0	3	2.03	.826
12. I am willing to do my best to pass all the subjects.	3255	0	3	2.67	.595
13. I get frightened when I am asked a question by the teachers.	3266	0	3	2.12	.834
14. I often feel like quitting school.	3270	0	3	2.67	.609
15. I am good in most of my school subjects.	3257	0	3	1.58	.776
16. I am always waiting for the lessons to end.	3255	0	3	2.13	.805
17. I always do poorly in tests.	3247	0	3	2.01	.820
18. I do not give up easily when I am faced with a difficult question in my schoolwork.	3257	0	3	2.17	.976
19. I am able to do better than my friends in most subjects.	3264	0	3	1.50	.802
20. I am not willing to put in more effort in my schoolwork.	3272	0	3	2.44	.882
Confidence (1, 3, 5, 7, 9, 11, 13, 15, 17, 19), Effort (2, 4, 6, 8, 10, 12, 14, 16, 18, 20)					

Appendix C: Correlation Matrix for Items

Correlations																				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	1																			
2	.17**	1																		
3	.08**	.10**	1																	
4	-.17**	-.05**	-.03	1																
5	.16**	.08**	.13**	-.09**	1															
6	.20**	.19**	.13**	-.08**	.11**	1														
7	.06**	.13**	.07**	-.00	.12**	.06**	1													
8	.17**	.15**	.15**	-.14**	.20**	.30**	.13**	1												
9	.12**	.24**	.08**	-.07**	.13**	.12**	.32**	.18**	1											
10	.19**	.10**	.17**	-.10**	.18**	.24**	.12**	.24**	.12**	1										
11	.13**	.28**	.08**	-.04*	.13**	.15**	.22**	.17**	.30**	.17**	1									
12	.15**	.12**	.167**	-.10**	.24**	.28**	.13**	.35**	.18**	.28**	.17**	1								
13	.11**	.23**	.09**	.01	.08**	.14**	.17**	.14**	.30**	.15**	.33**	.17**	1							
14	.11**	.17**	.11**	-.04*	.11**	.16**	.16**	.19**	.22**	.14**	.20**	.22**	.20**	1						
15	.23**	.14**	.12**	-.18**	.16**	.13**	.05**	.13**	.19**	.10**	.16**	.17**	.13**	.07**	1					
16	.10**	.18**	.08**	-.01	.08**	.10**	.09**	.14**	.16**	.15**	.18**	.13**	.26**	.26**	.04*	1				
17	.15**	.22**	.10**	-.04*	.09**	.11**	.21**	.19**	.34**	.11**	.29**	.14**	.22**	.20**	.20**	.14**	1			
18	.07**	.03	.13**	-.03	.09**	.10**	.09**	.16**	.05**	.13**	.08**	.16**	.08**	.11**	.07**	.05**	.10**	1		
19	.15**	.07**	.09**	-.14**	.14**	.09**	-.02	.10**	.09**	.09**	.06**	.11**	.05**	.04*	.42**	.00	.11**	.03	1	
20	.05**	.11**	.08**	.10	.08**	.11**	.11**	.11**	.15**	.12**	.15**	.14**	.16**	.23**	.05**	.17**	.17**	.15**	.02	1

. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).

Appendix D: Kaiser-Meyer-Olkin Measure of Sampling Adequacy and Bartlett's Test of Sphericity

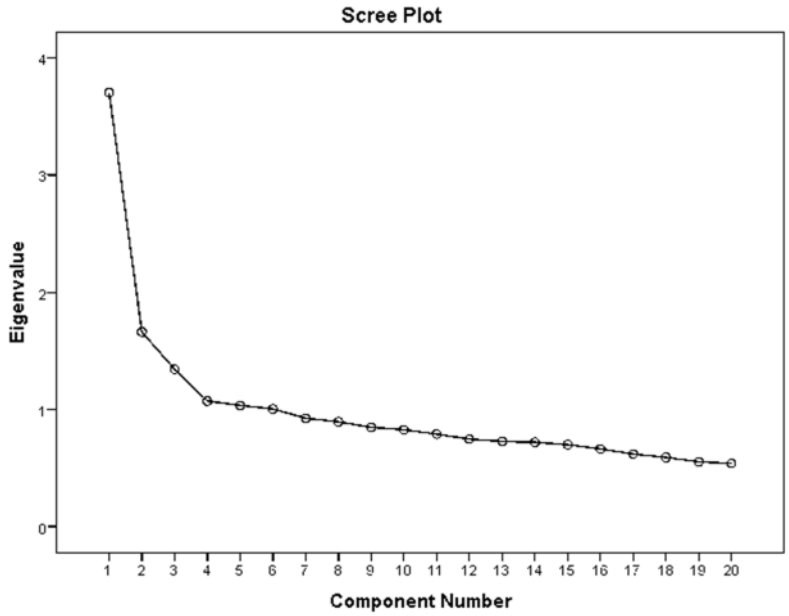
KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.832
Bartlett's Test of Sphericity	Approx. Chi-Square	3743.00
	df	171
	Sig.	.000

Appendix E: Initial Eigenvalues for Un-rotated Solution

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.702	18.508	18.508	3.702	18.508	18.508
2	1.665	8.326	26.834	1.665	8.326	26.834
3	1.347	6.735	33.569	1.347	6.735	33.569
4	1.074	5.370	38.938	1.074	5.370	38.938
5	1.037	5.187	44.126	1.037	5.187	44.126
6	1.006	5.030	49.156	1.006	5.030	49.156

7	.928	4.638	53.794			
8	.896	4.482	58.276			
9	.850	4.248	62.524			
10	.829	4.145	66.669			
11	.791	3.955	70.625			
12	.749	3.744	74.368			
13	.729	3.646	78.014			
14	.721	3.605	81.619			
15	.702	3.508	85.127			
16	.665	3.325	88.452			
17	.622	3.108	91.560			
18	.592	2.961	94.521			
19	.555	2.775	97.296			
20	.541	2.704	100.000			

Appendix F: Scree Plot



Appendix G: Parallel Analysis

Component Number	Actual Eigenvalues from PCA	MCPCA1	MCPCA1	MCPCA1	Average	Decision
1	3.702	1.1915	1.1953	1.1902	1.1923	Accept
2	1.665	1.1587	1.1589	1.1570	1.1582	Accept
3	1.347	1.1310	1.1307	1.1324	1.1314	Accept
4	1.074	1.1099	1.1092	1.1077	1.1089	Reject

Appendix H: Pattern Matrix

	Component

	1	2
school01		.487
school02	.460	
school03		.377
school05		.476
school06		.485
school07	.527	
school08		.495
school09	.616	
school10		.463
school11	.599	
school12		.538
school13	.603	
school14	.495	
school15		.602
school16	.507	
school17	.514	
school18		
school19		.618
school20	.425	

Extraction Method: Principal Component Analysis.
Rotation Method: Oblimin with Kaiser Normalization.
a. Rotation converged in 6 iterations.

Appendix I: Standardized Regression Weights

Factor One			Estimate	Factor Two			Estimate
school17	<---	F1	.467	school15	<---	F2	.383
school16	<---	F1	.371	school12	<---	F2	.565
school14	<---	F1	.433	school10	<---	F2	.460
school13	<---	F1	.525	school08	<---	F2	.548
school11	<---	F1	.525	school06	<---	F2	.466
school09	<---	F1	.566	school05	<---	F2	.396
school20	<---	F1	.344	school03	<---	F2	.320
school07	<---	F1	.388	school01	<---	F2	.363
school02	<---	F1	.428	school19	<---	F2	.291

Appendix J: Generated Factor Solution

	Factor One		**Factor Two**
2	I day dream a lot in class. **(R)**	**1**	I can follow the lessons easily.
7	Most of my classmates are smarter than I am. **(R)**	**3**	I am able to help my classmates with their schoolwork if permitted.
9	My teachers feel that I am poor in my work. **(R)**	**5**	If I work hard I think I can go to the college or university.
11	I often forget what I have learnt. **(R)**	**6**	I pay attention to the teachers during lessons.
13	I get frightened when I am asked a question by the teachers. **(R)**	**8**	I study hard for my tests.
14	I often feel like quitting school. **(R)**	**10**	I am usually interested in my schoolwork.
16	I am always waiting for the lessons to end. **(R)**	**12**	I am willing to do my best to pass all the subjects.
17	I always do poorly in tests. **(R)**	**15**	I am good in most of my school subjects.
20	I am not willing to put in more effort in my schoolwork. **(R)**	**19**	I am able to do better than my friends in most subjects.

**R = Items that were reversed scored*

Appendix K: Frequency for Dichotomised Reponses

		False (0)	True (1)
1	I can follow the lessons easily.	333	2930
2	I day dream a lot in class. **(R)**	598	2662
3	I am able to help my classmates with their schoolwork if permitted.	444	2801
4	I often do my homework without thinking. **(R)**	1798	1448
5	If I work hard I think I can go to the college or university.	338	2916
6	I pay attention to the teachers during lessons	130	3113
7	Most of my classmates are smarter than I am. **(R)**	776	2477
8	I study hard for my tests.	157	3088
9	My teachers feel that I am poor in my work. **(R)**	663	2575
10	I am usually interested in my schoolwork	216	3026
11	I often forget what I have learnt. **(R)**	728	2507
12	I am willing to do my best to pass all the subjects.	119	3136
13	I get frightened when I am asked a question by the teachers. **(R)**	638	2628
14	I often feel like quitting school. **(R)**	118	3152
15	I am good in most of my school subjects.	1613	1644
16	I am always waiting for the lessons to end. **(R)**	560	2695
17	I always do poorly in tests. **(R)**	760	2487
18	I am not willing to put in more effort in my schoolwork. (R)	686	2571
19	I am able to do better than my friends in most subjects.	1734	1530
20	I am not willing to put in more effort in my schoolwork. **(R)**	382	2890