Young Lives
An International Study of Childhood Poverty

YOUNG LIVES SCHOOL SURVEY

DATA USER GUIDE

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VIETNAM SCHOOL SURVEY ROUND 1 (2011- 2012)

March 2013

Background

This note relates to the first round of the Vietnam School Survey, conducted in 2011-2012 with a subsample of the Young Lives Younger Cohort children. The survey aims to offer information about the relationship between primary school children's backgrounds and their learning progress, and the data should be used in conjunction with this document, and accompanying technical documentation.

Sample Design

The Vietnam School Survey Wave 1 involved Young Lives Younger Cohort children[1] studying in Grade 5 in September 2011, together with a sample of their peers. The initial sample of Young Lives children comprised all Younger Cohort children expected to be studying in Grade 5, in schools which fell within the geographic boundaries of the Young Lives sentinel site. These children were tracked to their schools, where all Grade 5 classes containing a Younger Cohort child or children, were sampled. In each class, a random selection of peers were added to the sample of Young Lives children, so that 20 children per class were included in the survey[2].

Wave 2 of the survey involved the same Young Lives children and their peers as were included in Wave 1. If children who had been surveyed at Wave 1 were not present at Wave 2, they were simply not included, and no substitute children were added.

Additional considerations:

- Those Young Lives children studying in sampled schools but not enrolled in Grade 5 were not included in either Wave 1 or Wave 2, since the survey was designed to be grade 5 specific.
- In both Wave 1 and Wave 2, children were not tracked if they had moved to a school not already included in the sample.
- Schools which contained Young Lives children studying in Grade 5, but which fell outside the geographic boundaries of the sentinel site, were not included in the survey.

This design aimed to achieve a balanced sample of pupils at the class-level suitable for school and class-level analysis as well as adding another layer of data to the longitudinal cohort data.

Achieved sample

The final sample is formed of 3,284 Grade 5 pupils in 176 classes in 92 school sites (both main and satellite sites). 1,138 of these pupils are Young Lives index children. Only 79 children participated in Wave 1 but not in Wave 2.

Survey content

The survey instruments included data collection at the school class and pupil level, and involved the Principal, the teacher of the Grade 5 class, and pupil. The instruments included in each Wave of the survey are detailed below in Table 1,

[1] See Nguyen (2008) for details of the sampling approach of Young Lives' household survey in Vietnam

[2] If more than 20 Young Lives children were found in a single class, all Young Lives children were sampled and no peers added, taking it above the 20 children/ class threshold. If the total number of students enrolled in the class was less than 20, the entire class was sampled.

together with short notes on their administration and broad scope. All survey questionnaires are available for download at www.younglives.org.uk/our-themes/education.

Table 1. Survey instruments

Survey Wave	Instrument	Administration details
Wave 1	Roster	- School, Teacher, Class and Pupil rosters to ensure precise identification and linking of children across levels.
	Principal questionnaire	- Administered individually by fieldworkers to principals. Sometimes principals were in charge of main sites and their satellites. - Collected background data on the Principal, as well as school-level information
	School site observation	- Fieldworker completed through observation of school site during their time in the school. One per site i.e. one for main school and another for satellite school. - Collected data on school infrastructure
	Teacher questionnaire	- Administered individually by fieldworkers to teacher of YL child's class. - Collected background data on the Teacher, as well as class-level information
	Teacher assessments in Maths and Vietnamese	- Assessments of 'Pedagogical Content Knowledge' in Maths and Vietnamese to the teacher of YL child's class under fieldworker supervision.
	Pupil questionnaire	-Administered to the whole class. Fieldworker led and directed - Collected background data on the Pupil, as well as information on attitudes to school
	Pupil assessments in Maths and Vietnamese	-Administered to the whole class. Fieldworker led and directed. - Curriculum-related assessments
Wave 2	Roster	- School, Teacher, Class and Pupil rosters to ensure precise identification and linking of children across levels and to collect absenteeism data from the register
	Pupil questionnaire	-Administered to the whole class. Fieldworker led and directed - Re-administered a selection of the attitude items from Wave 1.
	Pupil assessments in Maths and Vietnamese	-Administered to the whole class. Fieldworker led and directed. - Curriculum-related assessments anchored to the test administered in Wave 2.
	Pupil peer questionnaire	-Administered to the whole class. Fieldworker led and directed. - Asked pupils to describe their friendship with other sample children

Survey Development

The survey was developed following a series of stakeholder meetings, in which key education priorities and research questions were identified, and the potential contribution of a Young Lives school survey in relation to existing research activities was clarified.

1. Development and Piloting of Wave 1
Child and Teacher test instruments were pre-piloted in August 2011 and IRT analysis conducted to ascertain the effectiveness of the test items.

Full piloting of all translated instruments, including a second pilot of the child achievement tests, was conducted in two provinces (Lao Cai and Phu Yen) containing Young Lives sites in September 2011. Staff members from GSO, CAF and Oxford University were involved in the piloting. A total of 4 schools and 8 classes were visited across the two provinces. The pilot led to the refinement of the questionnaires and tests. Pilot test data was collected for 160 children and IRT analysis conducted to refine and finalise test instruments[3]. All amendments were reflected in both the English and Vietnamese versions of the final questionnaires. In all cases, instruments were carefully translated into Vietnamese and piloted to ensure consistency of meaning across the English and Vietnamese versions.

2. Development and Piloting of Wave 2
A further pilot of the Wave 2 survey instruments was conducted in March 2012 in the same schools and classes as the Wave 1 piloting. Staff members from GSO and Oxford University participated, and the pilot led to the refinement of the roster and tests. Pilot test data was collected for 160 children and item response analysis conducted to refine and finalise the test instruments.

3. Fieldworker training for Wave 1 and Wave 2
Fieldworker training for Wave 1 of the survey happened between 10 and14 October 2011 in Hanoi. Twenty-four enumerators and 10 Supervisors were trained. Each survey module was introduced and discussed during training and fieldworkers were asked to complete training exercises, after which fieldworkers visited schools in Hanoi to practice administering different survey components. At the end of the training, each fieldworker sat a short test, which determined who participated in final fieldwork. Each fieldworker and supervisor was issued with a manual[4] explaining the general purpose of the survey, together with a more detailed breakdown of each component and its key considerations.

At the second wave of the survey, further instructions were issued to fieldworkers.

Fieldwork
Wave 1 fieldwork took place between 30 October and 14 December 2011, and Wave 2 between 18 April and 18 May 2012.

Fieldwork was conducted by 6 teams, each comprising of 2 fieldworkers and 1 team. In each case, one team was responsible for the conduct of the survey in one Young Lives province, except in Lao Cai where four fieldworkers and 1 supervisor were allocated, as a result of the geographical distance of schools and distribution of children. Six additional supervisors conducted spot checks on fieldwork teams and travelled between sites and teams to ensure data quality.

[3] Additional documentation on the test development and finalisation process is available for download from the website www.younglives.org.uk/our-themes/education
[4] The manual is available for download on the Young Lives website at www.younglives.org.uk/our-themes/education

The data

The data are hierarchically structured, at the pupil, teacher, class, school site and principal level. The files contain information on both Young Lives children and their peers, and these can be clearly identified via the 'childid' and 'pupilid' identifiers. The below table details the identifers present at each level of the data, together with the combination of IDs needed to merge files across levels.[5]

Table 2. Combinations of IDs

Level	Unique ID Combination
Pupil level (All children)	schlid classid pupilid
YL Child level	childid
Teacher/Class level data (1:1 teacher: class ratio)	schlid classid
School level data	schlid
Principal level data	prncid

References

Nguyen, N.P. (2008) *An Assessment of the Young Lives Sampling Approach in Vietnam*, Technical Note 4, Oxford: Young Lives.

[5] NB not all identifiers are present in all data files, since the data are organised at different levels.

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YOUNG LIVES SCHOOL SURVEY

THE DESIGN AND DEVELOPMENT OF ACHIEVEMENT TESTS IN THE VIETNAM SCHOOL SURVEY ROUND 1

ZOE JAMES

March 2013

Introduction

The Vietnam school survey design comprised two waves of data collection. The first wave, conducted at the start of the school year (from October 2011), collected school, class, teacher and child level data including assessments of cognitive and psycho-social competencies. The second wave, conducted at the end of the school year (from April 2012), focussed on 'retesting' children in the same cognitive and psycho-social domains.

The school survey tested children in the domains of mathematics and Vietnamese language. In so doing it assessed progress on the same domains as the nationally-representative Grade 5 Learning Assessment, such that analysis in the five Young Lives' regions can be situated in national context.

The second wave of testing, conducted at the end of the school year, poses a number of analytic advantages. Firstly, it provides a second measure of children's achievement in the tested subjects, improving reliability and robustness of measurement. Secondly, through linking the two tests, it provides a measure of progress over the course of an academic year (Grade 5) in relation to curriculum expectations. As such, the design provides opportunities for analysis of the school data beyond the cross-sectional capabilities of the Vietnam Grade 5 Learning Assessment, as well as adding an additional round of data to the existing longitudinal cohort dataset to enable the measurement of learning over time and a consideration of the role of school in facilitating learning.

This note elaborates on the process of design and development of the cognitive assessments.

Wave 1 Test Development

In Spring 2011, a Technical Working Group was convened in Hanoi, to guide the development of the tests. This comprised members of the Young Lives' team from Oxford University and the Vietnamese Centre for Analysis and Forecasting (CAF) at the Vietnamese Academy of Social Sciences (VASS), as well as expert consultants with experience of curriculum and test design from the Vietnamese Institute of Education Research, VNIES and PEDC[1].

This group drew on the maths and Vietnamese tests used in the 2010 round of the Vietnam Grade 5 Learning Assessment (G5LA), together with textbooks and international assessments (e.g. TIMMS) to generate grade-appropriate items in each competency. Passages for the Vietnamese test were sourced from VNIES. Items were developed in relation to the competency levels defined in technical documentation analysing data from the Grade 5 Learning Assessment, as seen in Tables 1 and 2 below.

[1] The group comprised Vu Son (Institute of Education Research), T.S. Pham Thanh Tam (VNIES), Chi Tran Thi Kim (PEDC), Le Thi Kim Dung as well as colleagues from CAF and Oxford University.

Table 1: Mathematics skill levels in Grade 5

Level 1	- Reads, writes and compares natural numbers, fractions and decimals - Uses single operations of +, -, x and : on simple whole numbers - Works with simple measures such as time - Recognises simple 3D shapes
Level 2	- Converts fractions with denominator of 10 to decimals - Calculates with whole numbers using one operation (x, + or :) in a one-step word problem - Recognises 2D and 3D shapes
Level 3	- Identifies place value - Determines the value of simple number sentence - Understands equivalent fractions - Adds and subtracts simple fractions - Carries out multiple operations in correct order - Converts and estimates common and familiar measurement units in solving problems
Level 4	- Reads, writes and compares large numbers - Solves problems involving calendars and currency, area and volume - Uses charts and tables for estimation - Solves inequalities - Transformations with 3D figures - Knowledge of angles in regular figures - Understands simple transformations with 2D and 3D shapes
Level 5	- Calculates with multiple and varied operations - Recognises rules and patterns in number sequences - Calculates the perimeter and area of irregular shapes - Measurement of irregular objects - Recognised transformed figures after reflection - Solves problems with multiple operations involving measurement units, percentage and averages
Level 6	- Problem solving with periods of time, length, area and volume - Embedded and dependent number patterns - Develops formulae - Recognises 3D figures after rotation and reflection and embedded figures and right angles in irregular shapes - Uses data from graphs

Source: 'Viet Nam High Quality Education for All by 2020' (2011)

Table 2: Vietnamese skill levels in Grade 5

Level 1	- Matches text at word or sentences level aided by pictures - Restricted to a limited range of vocabulary linked to pictures
Level 2	- Locates text expressed in short repetitive sentences and can deal with text unaided by pictures - Type of text is limited to short sentences and phrases with repetitive patterns
Level 3	- Reads and understands longer passages. Can search backwards or forwards through text for information - Understands paraphrasing - Expanding vocabulary enables understanding of sentences with some complex structure
Level 4	- Links information from different parts of the text - Selects and connects text to derive and infer different possible meanings
Level 5	- Links inferences and identifies an author's intention from information stated in different ways, in different text types and in documents where the message is not explicit
Level 6	- Combines text with outside knowledge to infer various meanings, including hidden meanings. Identifies an author's purposes, attitudes, values, beliefs, motives, unstated assumptions and arguments.

Source: 'Viet Nam High Quality Education for All by 2020' (2011)

A test item-bank was first developed, containing items appropriate for children at the start of grade 5 which related predominantly to competencies at curriculum grade 4 or below. In maths, questions considered topics such as fractions, algebra and geometry, and in Vietnamese, questions focussed on reading comprehension. 35 items in each domain were selected for piloting.

Wave 1 Piloting & Test Finalisation

Following a pre-pilot in Bac Giang province, the full pilot was conducted in September 2011 and aimed to assess the appropriateness of both tests, in terms of relevance and difficulty-level. Two pilot sites were selected – one in Phu Yen and one in Lao Cai - to ensure the tests were piloted in diverse contexts. In each site two schools were selected (which were not part of the final survey sample), and two grade 5 classes tested in each. Data were then entered and analysed and item function analysed before refinement and finalisation. The final tests were then administered as part of the main school survey conducted between October – Dec 2011.

Wave 2 Test Development

The development of the second wave of testing was, in many ways, more complex. This related to the multi-purpose nature of the end-of-year test and a need to balance different priorities. At least 10 'anchor' items needed to be included in each test. These 'anchor' items were direct replications of questions from the first test, selected because they had initially functioned well in item analysis and would hopefully enable the linking of test scores across waves. In each case, item functioning was considered in light of the following considerations:

- The item difficulty (i.e. the percentage of children who got each item correct and each item's rank in terms of difficulty).
- The 'fit' of the item as measured through IRT analysis

Items at a range of difficulty levels across the key sub-domains were selected for replication, with the expectation that the range of difficulty would decline slightly upon the second round. The replicated items were placed at the same location in the second test to replicate the conditions of the first test as far as possible.

In addition to these 'anchor' items, the rest of the test comprised new items developed in conjunction with members of the original Technical Working Group. In the case of the maths test, new items related to competencies which children would be expected to have developed over the course of the grade 5 academic year. These items were therefore grade 5-specific, introducing either entirely new concepts, or extending grade 4 techniques through more difficult/ complex questions. In Vietnamese, where the first wave of testing had comprised 5 reading passages and accompanying comprehension questions, the approach was slightly different since 3 entire passages needed to be replicated. Anchor items were still selected, but new more difficult items were written to correspond to replicated passages, and then some new passages and questions were additionally included.

Wave 2 Piloting & Test Finalisation

Piloting was conducted in March 2012 in the same Phu Yen and Lao Cai sites and classes as the Wave 1 pilot. For both the maths and Vietnamese tests, 35 questions were piloted (including the replicated 'anchor' items). This enabled us to drop items after piloting and to draw on a reserve bank of items where items had not worked and needed replacing.

Maths

A total of fifteen items were replicated directly from the first test. These comprised ten curricular items and five non-curricular items. These items were selected for replication because they functioned well during Wave 1. The 10 curricular items covered geometry, basic arithmetic, algebra (both simple and applied), fractions, and general number manipulation. These items corresponded to grade 3 and 4 of the Vietnamese mathematics curriculum and related directly to questions found in the core textbook. Replicating them in the end-of-year test enables the measurement of progress on these competencies during grade 5. All items were piloted again prior to Wave 2, and their item functioning examined.

The five non-curricular items had performed at a high level of difficulty in the first wave of testing. In all cases they required students to apply knowledge of fractions, number patterns, and shapes to unfamiliar question formats. These questions therefore constitute more general (or a separate dimension of) assessments of children's aptitude. Since these items were also replicated, they enable measurement of progress on these competencies during grade 5. All items were piloted again prior to Wave 2, and their item functioning examined.

An additional 25 grade 5-specific 'new' items were developed, of which 20 were selected for piloting (in rotated forms). These items related directly to competencies taught only in grade 5, which included decimals, volume, statistics, speed and weight calculations and complex algebra. Following piloting each item was examined in detail and considered for inclusion in the final test. The following characteristics were considered:

- The item difficulty (i.e. the percentage of children who got each item correct and each item's rank in terms of difficulty). The intention was to include items at a range of difficulty levels, balanced within the curricular domains to be covered.
- The sub-domain being measured by the item, and its relationship to the curriculum. Overall we aimed to achieve a balance between key curriculum sub-domains.

The 'fit' of the item as measured through IRT analysis conditional on other criteria Fourteen of these new grade 5 items were selected for inclusion in the final test, and a further one item was redeveloped to assess a grade 4 level competency in geometry, since this seemed to be an under-represented competency in the test.

Vietnamese

The first wave of the Vietnamese test assessed reading comprehension. It comprised five passages, each with six corresponding questions at varying levels of competency. These questions were much more challenging to make difficult, such that this test provides less variation between children and is at an overall lower level of difficulty than the maths test. The result of this is that there were fewer items from the first test that were obvious candidates for replication in the second test, as many items were too easy to consider replicating a second time. As a result, three passages from the first test were replicated in piloting, each with four replicated questions attached, a total of 12 'anchor' items. Two new items per replicated passage were then developed and piloted, which aimed to test higher order competencies such as interpretation (totalling six newly developed items that relate to replicated passages).

For piloting, three new passages were then added to the test, with between five and six corresponding new questions. Once again, these aimed to present children with more difficult items which involved higher order capacities of understanding and interpretation.

Following piloting each item was examined in detail and considered for inclusion in the final test. The following characteristics were considered:

- The item difficulty (i.e. the percentage of children who got each item correct and each item's rank in terms of difficulty). The intention was to include items at a range of difficulty levels, balanced within the curricular domains to be covered.
- The sub-domain being measured by the item, and its relationship to the curriculum. Overall we aimed to achieve a balance between key curriculum sub-domains.

The three piloted replicated passages were all included in the final test. Eleven of the piloted 12 replicated question items which corresponded to these passages were included in the final test and one question item was adapted. Three out of the six new piloted items that corresponded to replicated passages were adapted to increase their level of difficulty and were included in the final test. One of the three new passages was dropped, along with the six corresponding questions. Of the entirely new passages and items that were piloted and kept in the final test, three questions were adapted and one totally new item was added, to increase the level of difficulty. As such, the final Vietnamese test includes seven question

items that were not fully piloted and 11 replicated ‘anchor’ items from the first wave of testing.

Appendix tables 1 and 2 detail the items administered in Wave 1 and Wave 2 of the test, and clearly indicate which items were replicated. Appendix tables 3 and 4 then report the difficulty parameters of each test item using IRT analysis, linking all test items across the two waves.

Appendix

Table 1: Maths items in wave 1 and wave 2

WAVE 1							WAVE 2					
Wave 1 item no.	Wave 1 item	Source	Skill level	Grade level	% correct	Replicated in Wave2?	Wave 2 item no.	Wave 2 item	Source	Skill level	Grade level	% correct
1	4823+569+33=…… a) 4315; b)5425; c)5415; d)5325	Textbook adapted		4	94.0	N	1	Which figure has double the volume of figure (H)? A)A; b) B; c) C; d) D	G5LA adapted		5	86.55
2	The value of 5 in the number 58643 is: a) 5; b) 500; c) 5000; d) 50000	G5LA adapted		4	88.9	N	2	Find x: x-5,2 = 6,98+7,55 a) 9,33; b) 19,63; c) 19,73; d) 9,73			5	81.62
3	(70850 - 50270) x 3 = …. A) 61740; b)62040; c)80056; d)162280	Textbook adapted		4	93.4	N	3	The cube has a volume of 1cm3. H is: a)7cm3; b)9cm3; c) 6cm3; d) 10cm3	G5LA adapted		5	67.36
4	75683+1507-93=… a) 81000; b)76087; c)77097; d) 77107	G5LA adapted		4	84.0	N	4	Son's father bought 3 watermelons of weights 1,6kg, 1,8kg and 2,6kg. What's the average weight of each watermelon? A) 2.0kg; b) 1,8kg; c) 6.0kg; d) 3,0kg	G5LA adapted		5	69.42
5	Find the value of x: x:3 = 1532 a) 4596; b) 510; c) 1529; d)3596	Textbook adapted		4	90.7	N	5	The decimal number with 6 hundred, 4 units, 2 tenths, and 5 thousandths is: a) 64,25; b) 604, 25; c) 604, 205; d) 64,205	G5LA adapted		5	66.4
6	Fraction showing highlighted part in figure is: a)3/6; b)1/3; c) 6/3; d) 3/1	G5LA adapted		4	39.2	Y	6					56.6
7	Fill in the correct number: 859_67 < 859167 a) 9; b) 0; c) 1; d) 2	Textbook adapted		4	91.2	N	7	A lorry can carry a maximum of 100 bags of rice, each weighing 20kg. If each bag of rice instead weighed 5kg, how many bags could the lorry carry?				70.89

								A) 100; b) 200; c) 300; d) 400				
8	Calculate the perimeter if the rectangle: a) 18cm; b) 72cm; c)36cm; d)24cm	G5LA adapted		4	68.3	Y	8					82.56
9	Fill in the appropriate number: 1, 3 __, 27 a) 9; b) 4; c) 5; d) 15				61.3	Y	9					69.64
10	According to the clock how much time is left until 12:30? a) 1 hour 40 mins; b) 1 hour 20 mins; c) 2 hours 20 mins; d) 2 hours 40 mins	G5LA adapted		3	62.6	Y	10					72.04
11	The number "seven million thirty six thousand two hundred and five" is written as: a) 7036205; b) 73625; c) 7360205; d) 736205	G5LA adapted		5	39.9	Y	11					52.39
12	Fill in the correct number: 9.000.000m2 = ….km2 a) 900; b) 90; c) 9; d) 9000	G5LA adapted		5	79.7	Y	12					85.18
13	Which rule applies to calculate the second number from the first? (3,6); (6,15); (8,21) a) Cong 3; b) Tru 3; c) Nhan 2, cong 3; d) Nhan 3, tru 3	TIMMS G8 Item M012029 adapted			44.7	Y	13					58.88
14	There are 25 circles in groups as follows. Which is the calculation to find circles in each group? A) 25+5; b)25-5; c)25:5; d) 25x5	G5LA adapted		3	76.1	Y	14					84.68
15	The number of right angles in the following figure is: a)2; b)3; c) 6; d)7	G5LA adapted		3	77.7	Y	15					86.46
16	Calculate x in the following equation: x+4/5= 3/2 a) 1/10; b)6/5; c) 7/7; d)7/10	Textbook adapted		4	81.4	N	16	What is the perimeter and area of the shape below? A) 27cm and 31cm2; b) 22cm and 31cm2; c) 27cm and 19cm2; d) 22cm and 19cm2				27.89

17	Fill in the appropriate numbers to create a set of numbers to be divided by 9: 31__; __35; 2__5 a) 5, 1, 2; b) 2, 3, 4; c) 5, 1, 3; d) 4, 2, 2				72.1	N	17	Find 8/15:2/11+7/15:2/11=… a)18 7/10; b) 5 1/2; c) 2/11; d) 15/11				45.44
18	3/5 - 1/3 = … a) 2/5; b) 2/2; c) 2/15; d) 4/15	G5LA adapted		4	84.5	N	18	Find 2 1/4 x 3 3/5 a) 6 1/10; b 3/5; c) 6 13/20; d) 7 13/20				41.47
19	4/3x5/4x7/8x8/10x9/14=… a) 3/4; b) 33/39; c) 10080/13444; d) 4/3	Textbook adapted		4	38.6	N	19	The side of the small cube is 0.5cm. The side of the big cube is 5.5cm. How many small cubes can we fit inside the big cube? A) 1; b) 11; c) 121; d) 1331				20.94
20	The division (1154:62) has the rest of: a) 0; b) 61; c) 35; d) 38	Textbook adapted		4	71.5	N	20	Class 5A has 45 pupils, 27 of whom are female. Male pupils are in charge of sweeping the leaves off the school yard. It takes them 1 hour to finish the task. If the whole class did it together, how long would it take to finish the task? Assume that male and female pupils are equally fast. a) 24 minutes; b) 27 minutes c) 45 minutes; d) 60 minutes				33.92
21	How many squares are there in the following figure: a) 2; b) 10; c) 9; d) 8	G5LA adapted		1 or 2	33.0	Y	21					38.22
22	Huy pays 16000 dong to buy 4 balls. How much does Huy have to pay to buy 7 balls? A) 64000BND; b) 28000VND; c)112000VND; d) 32000VND	G5LA adapted		4	56.5	Y	22					64.18
23	Calculate 20+20 : 4x 5 = … a) 45; b) 50; c) 125; d) 21	G5LA adapted		3 or 4	36.3	Y	23					51.73

24	The pineapple weighs: a) 1kg; b) 1800g; c) 800g; d) 1300g	G5LA adapted		3	61.4	N	24	Thang Long School has 400 pupils, 40% of whom are female. Trung Vuong School has 500 pupils, 58% of whom are females. What is the percentage of female pupils when you combine the two schools? A) 45%; b) 49.5%; c) 50%; d) 54%				37.04
25	If k=4, m=6 and n=24 which is correct? A) k=n/m; b)k=m/n; c) k=mxn; d)k=n-m				36.2	N	25	What's the area of glass used to make an aquarium with 1m length, 0,5m width and 0,5m height? (the aquarium does not have a lid) a) 2m2; b) 0,5m2 c) 1,5m2; d) 2,5m2	G5LA adapted			39.66
26	The area of the shaded area is: a)65m2; b)49m2; c) 59m2 d) 16m2	G5LA adapted		4	36.6	N	26	The distance from A to B is 270km. A car travels from A to B at a speed of 60km per hour. On the way, it stops to take a break at C at 3pm. C is 90km distance away from B. What time did the car start from A?				26.49
27	The fraction showing the highlighted parts in the following figure is: a) 4/3; b) 5/8; c) 3/4; d) 10/13				20.6	Y	27					41.44
28	Which set of numbers has a sum closest to the sum of 691:208 a) 600+200; b) 700: 200; c) 700+300; d) 900+200				46.0	Y	28					58.63
29	If a+2b=5 and c=3, calculate: a+2(b+c)=… a) 14; b) 8; c) 12; d) 11				27.0	N	29	The pie chart shows the proportions of books in the library. Of these books, 31% are maths books, 25% are Vietnamese books. There are 132 books in the library that are neither math nor Vietnamese books. How many math books are there in the library? A) 31; b) 44; c) 93; d) 132				30.61

30	Nhung sold 60 newspapers and Huong sold 80 newspapers, at the same price. The total amount of money they get from selling newspapers is 700000VND. How much money did Huong get from selling the newspapers? A)300000VND; b)420000VND; c) 525000VND; d)400000VND				52.2	Y	30					51.61

Appendix

Table 2: Vietnamese items in wave 1 and wave 2 (N.B. the translation is indicative only)

WAVE 1							WAVE 2					
Wave 1 passage no.	Wave 1 item no.	Wave 1 item	Competency	Difficulty level	% correct	Replicated in Wave2?	Wave 2 passage no.	Wave 2 item no.	Wave 2 item	Competency	Difficulty level	% correct
	1	Who is the primary character in the story?	Link information from different parts of the text.	4	65.7	N		1	What enabled Harry to lecture on relativity?	Search through text, compare close possibilities and combine with outside knowledge	5	77.22
	2	What did Harry usually do while Einstein was lecturing?	Locate text expressed in the passage without aided picture	2	86.0	N		2	How did the questions full of mathematics formulas actually sound/ appear to Harry?	Combine text with outside knowledge to infer/derive real meaning of the text which is opposite to the stated words	6	33.35
	3	Where did Harry lecture on Theory of Relativity in the place of Einstein?	Locate text expressed in the passage without aided picture	2	69.8	Y		3				78.07
	4	What did Einstein do while Harry was lecturing on Theory of Relativity?	Locate text expressed in the passage without aided picture	2	79.4	Y		4				83.53
1	5	What is the passage about?	Link inferences and identify author's intention where message is not explicit	5	52.3	Y	1	5				64.71

	6	What did you learnt from the way Harry answered the audience's questions?	Combine text with outside knowledge to infer/derive new meaning of the text	6	62.2	Y		6				73.73
	7	Does Hoang like fish?	Locate text expressed in the passage without aided picture	2	89.7	N		7	What is the first paragraph about?	Link information from different parts of the text, Link inferences and identify author's hidden message and values from connected details.	5	71.39
	8	What did Nam and Hoang's mother believe about eating fish?	Have to search backward and forward through the text for information	3	62.0	N		8	What does the sentence 'a bad mark makes the whole house feel sad' mean?	Link inferences and identify the author's hidden message and intention that was stated in an imagery way	5	72.89
	9	What kind of nutrients does fish contain?	Locate text expressed in the passage without aided picture	2	85.9	N		9	What is the meaning of the following sentences? 'That is why the (mark) ten yesterday was like three tens… we got'	Link inferences and identify the author's hidden message and intention that was stated in an imagery way	5	75.41
	10	What is eating fish good for children?	Have to search backward and forward to collect information from different parts of the text	3	83.8	N		10	What is the second paragraph about?	Link inferences from different parts of the text. Link inferences and identify the author's hidden message and values from connected details	5	69.02
	11	What advice about eating fish did you find in the passage?	Link details/information from different parts of the text. Link inferences and identify author's intention from information stated in deferent way.	4 or 5	86.1	N		11	The poem was named 'all my family go to school' because?	Combine text with outside knowledge to infer hidden meaning of the passage. Identify author's motives and values.	6	36.63
2	12	What good does fish do for children?	Have to search backward and forward to collect details/information from different parts of the text	3	84.4	N	2	12	? UNPILOTTED ITEM	Identify intention of author, speculate implicit messages beyond written text.	6	63.59

Appendix

	13	What was Tung Nam doing when his friend invited him to go playing foot ball?	Locate text expressed in the passage without aided picture	2	89.3	N		13	What happens in the homes after the cock crows?	Understand long and complex sentences. Identify the right sequences of activities without having indicators of time.	3	72.42
	14	Did Tung Nam want to go with his friend to play foot ball?	Link inferences and identify author's intention from information stated in deferent ways.	5	50.5	N		14	Which animals were mentioned in the passage?	Search the text forward and backward to identify relevant information. Identify information added from outside similar to information included in the text.	3	76.91
	15	Why didn't he go?	Have to search backward and forward to select information from different parts of the text	3	40.2	N		15	Which of the following sounds was not mentioned in the text?	Search the text forward and backward to identify relevant information. Identify information added from outside similar to information included in the text.	3	80.19
	16	What did you learnt from the passage?	Combine text with outside knowledge to infer hidden meaning, identify the author's purpose and values	6	78.7	N		16	What do the villagers do after breakfast?	Locate information in a long sentence without aided picture	?	88.71
	17	Was Tung Nam convinced when his friend said 'You can do your home work tomorrow'?	Link inferences and identify author's intention from information stated in a deferent way and message is not explicit.	5	54.6	N		17	What sound can't be heard in the village when people have gone to work?	Search the text forward and backward to identify relevant information. Connect different parts of the text.	3	64.46
3	18	What did Tung Nam suggest when he answered 'Shall we go all day from early morning tomorrow, but not today'?	Link inferences and identify author's intention from information stated in a deferent way.	5	44.1	N	3	18	What is the passage about?	Identify the author's intention from information stated in different ways. Generalize the topic of the passage from details.	5	51.95

	19	What appears with young green colour when spring comes on the field?	Locate text expressed in the passage without aided picture	2	77.5	Y		19					80.34
	20	What kind of trees are flowering on the hill beyond the field?	Expanding of vocabulary, understanding of sentences with complex structure.	3	72.5	Y		20					72.76
	21	What didn't the author mention in the passage?	Link information from different parts of the text, searching for available and identify missing information	4	65.4	Y		21					69.02
	22	What kind of grass that was described as 'lankily tall'?	Locate text expressed in the passage without aided picture	2	77.7	N		22	With which details was Ms Needle Flydragon described?	Search back ward and forward through the text for information, eliminate incorrect information	3		38.07
	23	Which insect was described with the action 'draw his sword in a dance'?	Locate text expressed in the passage without aided picture	2	80.7	N		23	Which of the following options provide correct names of the birds mentioned in the passage?	Search back ward and forward through the text for information, eliminate incorrect information	5		49.8
4	24	What image did the author want to picture in her description of the Spring Field?	Link inferences and identify author's intention from information stated in a deferent way.	5	77.3	N	4	24	Question response categories adjusted		3		38.69
	25	What colour are the flowers in the garden of Uncle Ho (the Uncle)?	Link information from different parts of the text, identify author's intention from information stated in different ways.	5	16.4	N		25	Which colours were mentioned in the poem?	Search for information through the passage, understand different shades of same words	3		47.43
5	26	When did the Uncle live in 'the house of those salad-days'?	Understand paraphrasing, expand vocabulary	3	38.6	N		26	Which of the following options reflects the author's feeling when visiting the Uncle's house?	Combine text with outside knowledge to infer hidden/underlined message, put oneself in the text to identify the author's motives,	6		32.17

	27	What didn't the author see when visiting the Uncle's house?	Link information from different parts of the text, searching for available and identify missing information	4	61.5	Y		27				62.4
	28	How was the Uncle's house described?	Search back ward and forward through the text for information, eliminate incorrect information	3	57.3	Y		28				59.43
	29	What is the poem about?	Combine text with outside knowledge to infer hidden/underlined meaning, identify the author's motives, attitudes and values	6	64.1	Y		29				66.01
	30	What does it mean by 'the golden-sky-light ripe guava'?	Understand paraphrasing, expand vocabulary	3	72.6	Y		30				72.82

Table 3: Maths Item Parameters

Maths Wave 1					Maths Wave 2			
Item No	**Discrimination**	**Difficulty**	**Guessing**[2]	**Replicated?**	**Item No**	**Discrimination**	**Difficulty**	**Guessing**
1	0.572872	-3.0063	0.269322	N	1	0.734917	-1.04237	0.399171
2	0.979488	-1.90236	0.0373319	N	2	0.577	-1.30409	0.16671
3	0.828108	-2.49787	0.111635	N	3	0.573846	-0.443797	0.114875
4	0.808602	-1.72534	0.0495833	N	4	0.688264	-0.553312	0.0675703
5	0.697346	-2.02461	0.357714	N	5	0.797412	-0.409807	0.0251377
6	1.12471	0.302631	0.109706	Y	6			
7	0.819979	-2.1517	0.173424	N	7	0.794556	-0.564557	0.0614391
8	0.851163	-1.02009	0.019791	Y	8			
9	0.784386	-0.567691	0.036252	Y	9			
10	0.69171	-0.482145	0.153488	Y	10			
11	0.780031	0.247288	0.0346396	Y	11			
12	0.753258	-1.49334	0.0387604	Y	12			
13	0.689512	0.0742908	0.0609396	Y	13			
14	0.869679	-1.25836	0.0275941	Y	14			
15	0.73742	-1.47191	0.047328	Y	15			
16	1.11638	-1.34559	0.0315332	N	16	1.4444	1.56136	0.168603
17	1.14003	-0.899444	0.0451348	N	17	0.972515	0.876224	0.19458
18	1.21238	-1.46401	0.0375962	N	18	0.670169	0.966577	0.117587
19	1.18458	0.2965	0.0526321	N	19	1.17669	1.84163	0.114025
20	1.08954	-0.879918	0.0539888	N	20	0.820874	1.5824	0.181787
21	0.838348	0.831057	0.0822803	Y	21			
22	0.924505	-0.155846	0.123579	Y	22			
23	0.872413	0.499786	0.104576	Y	23			
24	0.498714	-0.332739	0.180598	N	24	1.09022	1.40917	0.223738
25	1.37284	0.666398	0.159428	N	25	1.10852	1.23196	0.221931
26	1.49207	0.502874	0.121367	N	26	1.11232	1.93053	0.181252
27	1.26044	0.924721	0.0942768	Y	27			
28	0.69732	0.214387	0.12549	Y	28			
29	0.398883	2.70696	0.140951	N	29	1.03329	1.83072	0.207979
30	0.655178	0.115256	0.0785311	Y	30			

Table 4: Vietnamese Item Parameters

[2] This is on the whole low for both tests

Appendix

Vietnamese Wave 1					Vietnamese Wave 2			
Item No	**Discrimination**	**Difficulty**	**Guessing**	**Replicated?**	**Item No**	**Discrimination**	**Difficulty**	**Guessing**
1	0.742167	0.757444	0.497557	N	1	0.711137	-0.358788	0.423199
2	0.728591	-1.7084	0.171851	N	2	0.818722	1.06028	0.0897484
3	1.00421	-0.604177	0.208905	Y	3			
4	0.769721	-1.21338	0.184065	Y	4			
5	0.985653	0.341683	0.296367	Y	5			
6	0.928101	-0.32355	0.214148	Y	6			
7	0.79255	-1.97801	0.154022	N	7	0.3701	-1.09213	0.145786
8	0.300872	-0.666641	0.111714	N	8	0.670192	-0.776677	0.133469
9	0.9332	-1.6174	0.0522083	N	9	0.85532	-0.704607	0.182934
10	0.803208	-1.58086	0.0709835	N	10	0.597753	-0.363838	0.237713
11	1.05166	-1.55289	0.0430829	N	11	0.354767	2.25606	0.162278
12	0.895512	-1.56384	0.0415676	N	12	0.352292	-0.722873	0.0637401
13	1.06902	-1.78951	0.0340803	N	13	0.63266	-0.777646	0.134452
14	0.684862	0.788334	0.276411	N	14	0.726399	-1.04016	0.0833791
15	1.13218	3.67041	0.395807	N	15	1.06475	-0.997916	0.074621
16	1.03533	-1.09886	0.0768462	N	16	0.916411	-1.61421	0.113189
17	0.776646	0.0868434	0.154726	N	17	0.653856	-0.367666	0.1094
18	0.539559	0.530879	0.0892658	N	18	0.276727	0.606315	0.137348
19	0.953283	-1.02052	0.115869	Y	19			
20	0.460921	-1.27843	0.0583745	Y	20			
21	0.95844	-0.413802	0.14315	Y	21			
22	1.40075	-0.850509	0.151457	N	22	0.848144	1.15445	0.180408
23	1.62026	-0.843179	0.240652	N	23	0.687587	0.379397	0.113024
24	0.875618	-1.17197	0.0315153	N	24	0.247502	2.31075	0.131091
25	1.57778	4.02839	0.163657	N	25	0.515588	0.721923	0.146303
26	0.582137	1.19342	0.167492	N	26	0.832661	2.20532	0.250391
27	1.05017	-0.127897	0.169054	Y	27			
28	0.760282	-0.168851	0.0854056	Y	28			
29	1.14939	-0.0390075	0.275045	Y	29			
30	0.633629	-0.971435	0.0803206	Y	30			

Young Lives

An International Study of Childhood Poverty

YOUNG LIVES SCHOOL SURVEY

VIETNAM

ROUND 1 (2011)

FIELDWORKER MANUAL

(ENGLISH TRANSLATION)

Contents

1. The School Survey

'Young Lives' is a longitudinal survey of children which began in 2002. It has followed 2000 children in Vietnam since their first year of life. The schools included in the school survey are schools that these 'Young Lives children' attend.

The school survey collects data about pupils in Grade 5, their teachers and their schools. It collects data on Young Lives index children (if they are in Grade 5) and some of their classmates (a total of 20 children per class).

This manual explains how to conduct fieldwork for the Young Lives School Survey. Please read it carefully before beginning the fieldwork. Please refer to the manual each time you visit a school and administer the instruments.

There are seven instrument types to be completed. Instructions are given as to how to administer each, including question by question notes, where this is useful. This manual also explains how to organize administration with the school and gives guidelines on how to conduct the fieldwork appropriately.

Each fieldworker team has 3 members. Usually, each school visit will last 2 days.

Fieldwork will take place from 23rd October to 5th December 2011.

2. List of Instruments

The instruments to be used are listed below, with indications of their contents:

1. School booklet 1 (school roster, teacher roster, class roster, school observation schedule)
2. School booklet 2 (school principal questionnaire (interview))
3. Teacher booklet 1 (Grade 5 teacher questionnaire (interview))
4. Teacher booklet 2 (contains self-completion questionnaires about maths and Vietnamese teaching (completed under supervision)
5. Pupil booklet (self-completion questionnaire completed by Grade 5 pupils under supervision)
6. Pupil test in Vietnamese (self-completion test by Grade 5 pupils completed under supervision)
7. Pupil test in Maths (self-completion test by Grade 5 pupils completed under supervision)

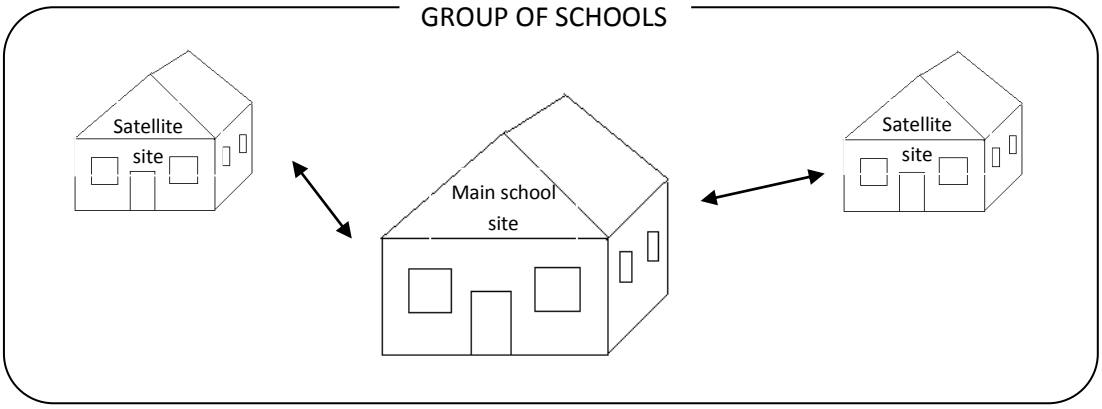
3. Preparing to Visit the Schools

Before you arrive, GSO will have sent a letter to the school explaining the survey and providing information sheets for participants.

Your team leader will have a list of schools for your team to visit during the fieldwork period. Your team leader will also have pre-printed rosters for each school that the team is to visit. These rosters list the Young Lives children we expect to find in each school-site and give some basic information about these children so that you can be sure to identify them correctly. The classes that these children are in will determine which classes in the school-group will be included in the survey. ***We will not know this precisely until arriving at the school***.

Therefore the team leader will need to estimate the number of instruments to take to the school. Please over-estimate to ensure you have enough.

Some schools in Vietnam have just one site. Others have a main site and one or more satellite sites. These satellites have the same principal as the main site, but are located in rural areas to be closer to pupils' homes. The group of sites with the same principal – main site and satellites we call the ***school group***, see below.



In each school site there may be one or more Grade 5 classes. In some large school-groups there could be 8 classes in Grade 5. These are often given numbers like 5A, 5B, 5C. Each Grade 5 class will be part of the survey if and only if one or more Young Lives children is in that class.

The team leader should contact the school prior to the visit with as much notice as possible. He should reconfirm a few days before visiting each school. It is useful to gather information about the school in advance to help plan the fieldwork, if possible. For example – are classes only in the morning or both morning and afternoon?

GSO will estimate the number of days for each school visit on the prior information we have about the size of the school. However, the team leader may need to adjust this when he finds out about the number of classes to be surveyed, the number of satellites to be visited etc. Usually, fieldwork will require 2 days in a school. In a very small school, fieldwork could last 1.5 days and in a very large school up to 3.5 days. Fieldworkers should be flexible about visiting two schools in one day, if appropriate. It is up to the team-leader to organize the fieldwork schedule taking account of the expected workload in each school.

The telephone number of the school will not be pre-printed on the school roster. However, GSO will give the team leader the contact number of the Young Lives commune associate/informant (obtained from CAF). The commune associate/informant will be able to help the team leader to contact the school and will be able to obtain the school telephone number for you.

4. The Survey Sample

The classes in each school-group to be surveyed are all the Grade 5 classes in the selected school which contain one or more Young Lives pupil(s).

In each school-group to be surveyed, the people to be included in the survey are

- All the Young Lives children *plus* their classmates (a total of 20 children per class including Young Lives children)
- The Grade 5 teachers of classes with Young Lives children in them
- The principal of the school-group

In every class in the survey, 20 pupils are sampled (with a few exceptions described below). These 20 are made up of the Young Lives children in the class plus extra children to make a total of 20. For example if the class has 2 Young Lives children in it then 18 extra children (non- Young Lives children) are selected. If it has 5 Young lives children, 15 extra children are selected. The extra (non-Young Lives) children are selected by a random procedure, described later in this manual.

In the rare cases where there are fewer than 20 children in the class or where the number of Young Lives children in the class is more than 20, the number of children in the class sample will not be 20. If one or more Young Lives children in the class is absent, they are still treated as part of the sample. **Always sample all the Young Lives children in the class.**

5. Arriving at the School

On arrival at the school, introduce yourself to the principal or the deputy if the principal is absent. You then need to make arrangements with the principal or deputy for a schedule to administer all the instruments.

Explaining the survey to the principal or deputy:

- Explain that the first instrument to be completed will be the roster (in School Booklet 1). You will need the principal's help for this.

- Explain that you will need to conduct a maths test (45 minutes) and a Vietnamese test (45 minutes) with the 20 selected children in each Grade 5 class in the survey.

- Explain that you will need to interview the principal (30-45 minutes).

- Explain that you will need to interview each Grade 5 teacher in the sample (30-45 minutes) and that each teacher will need to complete two teaching questionnaires (maths and Vietnamese). A maximum of one hour is allowed for each of the teaching questionnaires.

- Explain that 20 pupils in each Grade 5 class will complete a questionnaire (45 minutes).

- Explain also that you will need to observe the school facilities (30 minutes).

Gathering the initial information you need:

- Check that the principal, teachers and pupils have received the information sheets sent by GSO and that they agree to participate in the survey

- Find out how many Grade 5 classes need to be surveyed (when you complete the rosters)

- Find out if any of these classes is in a satellite school (you may need to get information about the class from the satellite school itself if they are not kept at the main school)
- Find out the hours that the children in each class are in school (morning/afternoon or whole day?)

- Fix a time to administer the child tests and child questionnaire. The child maths and Vietnamese tests should not be administered on the same day to avoid pupil fatigue. One fieldworker should normally supervise each test with 20 pupils. You need three 45 minute slots for each class.

- Fix times to interview the principal and the Grade 5 teachers

- Fix times for the Grade 5 teachers to complete the questionnaires in Teacher Booklet 2 (this requires two appointments of a maximum of one hour each). The teachers **must** be supervised by you but can complete these questionnaires at the same time as each other in the same room if possible.

6. Arranging the Fieldwork Schedule

The schedule you arrange will depend on how many grade 5 classes are to be surveyed, whether any are in satellites and when the children attend school. Below is an example for a school with 3 classes in Grade 5 to be surveyed.

Don't arrange both pupil tests on the same day. Also, try to avoid teachers completing both the Vietnamese and maths questionnaires on the same day.

Complete the cover sheets for all instruments and tests in advance. This is especially important for the child instruments including the child test answer sheets. For each test answer sheet and questionnaire booklet, you will need to complete 20 cover sheets (one for each selected pupil). Do this in plenty of time before administering the instrument.

Example Fieldwork Schedule for a 3-Class School

Fieldworker		1	2	3
Day 1	morning	Complete rosters (School Booklet 1)	Complete rosters (School Booklet 1)	School observation (School Booklet 1)
		Pupil maths test (class 5A)	Pupil maths test (class 5B)	Pupil maths test (class 5C)
	afternoon	Teacher interview (Teacher T5A) (Teacher Booklet 1) (class roster)	Teacher interview (Teacher T5B) (Teacher Booklet 1) (class roster)	Teacher interview (Teacher T5C) (Teacher Booklet 1) (class roster)
		Teacher Vietnamese Questionnaire (teachers T5A, B, C)	Principal Interview	Checking instruments
Day 2	morning	Pupil Vietnamese test (class T5A)	Pupil Vietnamese test (class T5B)	Pupil Vietnamese test (class T5C)
		Pupil questionnaire (class 5A)	Pupil questionnaire (class 5B)	Pupil questionnaire (class 5C)
	afternoon	Teacher Maths Questionnaire (Teachers T5A, B, C)	Checking instruments	Checking instruments

Informed Consent

Pupils, teachers and principals should have the survey explained to them in language they can understand. They are free not to participate if they wish. Please explain that their participation is very valuable to the long-running Young Lives project and encourage them to take part, but be clear that their participation is voluntary.

If a non-Young Lives pupil does not wish to take part, select another pupil using the random procedure described later.

If a Young Lives pupil or a teacher does not wish to take part, record this by inserting the correct code in the fieldworker completed sections (see instrument cover sheets).

7. Detailed Instructions for Completing Each Instrument

7.1 School Booklet 1: Completing the Rosters

School booklet 1 contains the school and class rosters plus the school observation schedule. Complete the rosters first following the instructions below. You should do this with the help of the principal as soon as possible after arriving at the school.

It is essential that the rosters are completed correctly as they are the basis for the survey sample.

7.1.1 The School Site Roster

The school roster is pre-completed by GSO with the details of the school and of the Young Lives children we expect to find in the school. Check that the pre-filled details are complete and correct. Complete if necessary. These details are:

**** School site name * Young Lives School site code * School address * Site ID***

**** Commune ID *Principal Telephone *Principal ID * YL Child ID(s)***

**** Name of child *Age of child***

In addition, you will be provided with a supplementary roster sheet which gives more information about the Young Lives children (e.g. their address, parents' names) to help you identify them.

- **You will need to complete columns 4-7 of the school site roster. See the example below.**

- **Check if each child is still enrolled at the school (column 4) and find out which classes they are in (column 5). Class ID refers to the name given to the Grade 5 class e.g. 5A, 5B. This could be different from school to school but please ensure that within schools this code is unique. In this example, there are four Yo ung Lives children in two classes. If a child is not enrolled any more, give the reason why in column 7. Enrolled children should be coded '88' in column 7. Column 6 is completed later by copying the codes from the class roster (see Section 7.3)**

SCHOOL SITE ROSTER – PLEASE COMPLETE ONE ROSTER PER SCHOOL SITE

School site name: ___School of Excellence_____ Young Lives School code: ___PHY0100100_____

School address: ____225 Fresh Water Road_____ Commune ID: _____01___ Site ID:_____01___
District ID:_____01___

Principal ID (first 8 digits of YL school code): PHY01001 Principal/HM/other contact telephone:_ 0123456789 (Mr Chi)

YOUNG LIVES CHILD ROSTER
Young Lives children expected in school in Grade 5 (There may be other YL children in other grades, but they are not to be included in the survey):

1. YL CHILD ID	2. Name of child	3. Age of child	4. Is this child still enrolled in this school? 00=No; 01=Yes	5. If still enrolled, CLASS ID *(ID of class in which YL child studies)*	6. If still enrolled, PUPIL ID *(ID of child within their class, as per class roster)*	7. If no longer enrolled, where is the child? (f known) 00=not known; 01=dropped out; 02= moved schools; 03= other; 88=NA
VN010001	Ngo Duc Hinh	11	*[01]*	*5A*	*CH01*	*[88]*
VN010002	Vu Thi Quynh Hoa	10	*[01]*	*5A*	*CH02*	*[88]*
VN010003	Nguyen Ngoc Hung	10	*[01]*	*5B*	*CH01*	*[88]*
VN010004	Bui Thi Thuy Ngoc	11	*[01]*	*5B*	*CH02*	*[88]*
VN010005	Do Thi Thinh	10	*[00]*	*5 __*	*CH__ __*	*[02]*

[please note that the Young lives school code is 8 digits not 10 digits as shown above. The principal ID is the first 6 digits of the school code, not the first 8 as shown above]

IDENTIFICATION OF YOUNG LIVES PUPILS. This should be done with the school principal using the school records and the rosters which GSO supplied to you. Use the dates of birth, address, parents names etc. to be sure you have identified the child correctly. When you arrive at the class, as a final check, ask the Young loves child whether he remembers participating in the Young Lives survey in the past.

WHEN A YOUNG LIVES PUPIL HAS MOVED SCHOOLS

When you complete the school site roster, you may be informed that a Young Lives pupil has left the school and moved to another school. It is possible that the child has moved to a nearby school in the Young Lives site. This school may be included in the Young Lives School Survey. If the school informs you that the child has moved to another school in the Young Lives site, please inform **Mr Son** at GSO.

7.1.2 School Booklet 1: The Teacher Roster

Usually, children in Grade 5 have just one main teacher. This is the homeroom teacher and is usually also the maths and the Vietnamese teacher. If the class is taught by a number of teachers, the homeroom teacher is the teacher who has the main responsibility for this class. For each class which is to be included in the survey, complete the homeroom teacher's name on the teacher roster next to the class ID. This roster assigns a teacher ID. Then complete the number of days each teacher was absent from school in the last academic year (2010-11) by asking the principal to get this information from the school records. See the example below:

1. CLASS ID	2. HOMEROOM TEACHER NAME	3. TEACHER ID	4. Number of days on which teacher was absent from school in the last academic year (2010-11)?
5A	Vu Son	T5A	3

When interviewing the Grade 5 teacher to complete the teacher questionnaire, ensure that you interview the homeroom teacher as described above.

7.1.3 School Booklet 1: The Class Rosters

One class roster should be completed for each class to be surveyed. In the example above there are two classes to be surveyed, so two class rosters will be completed. The rosters are completed in 3 stages:

1. Before you visit the classes, use the school site roster to transfer information about the Young Lives index children in each class to the class roster

2. When you first visit the classes before you begin administering the first questionnaire or test you will select the group of pupils to be sampled and record their details on the class roster

3. Working with the class teacher to extract information from pupil records

Stage 1: When Completing the School Site Roster

- Use one class roster for each class to be surveyed. Enter the school code and class code on each roster.

- Using the school site roster, insert the Young Lives children's IDs into column 3 on the class rosters.

- Enter code 01 in column 2 for the Young Lives children and 02 for all the others ***(see below for how to select the non-Young Lives pupils)***, totaling 20 children

  - ***Unless*** there are less than 20 children in the class (then include only the children in the class)

  - ***Or***, if there are more than 20 Young Lives children in the class (a rare situation). In this case all of these children must be included in the sample. Use the 'Extra Lines Sheet' at the back of School Booklet 1 to write the extra names and details.

You have completed the first stage of the class roster. Now transfer the child ID codes for the Young Lives children to column 6 in the School Site Roster.
You will need to visit the classes to complete the rest of the roster. Do this as early as possible so that you have the information you need to complete the codes for the pupil test answer sheets and questionnaires. These must be prepared before you begin the tests or questionnaires.

Stage 2: Visiting the Classes

On the first visit to a class you need to complete **stage 2** of the class roster. This will be before you administer the first test or questionnaire.

- Check that the Young Lives children you expected to find in the class are actually the Young Lives children.

- If there are less than 20 pupils in the class, all children will be included on the roster. Write the names of all the non-Young lives children in column 3 of the class roster. This assigns an ID to each child which you will use later.

- If there are more than 20 pupils in the class, you will need to select a number of non-Young Lives children to make a total of 20 for the sample. Do this using the 'Pupil Random Selection Technique' described below.

- Complete the names of the selected non-Young Lives children in column 3 of the class roster.

- If there are 20 or more Young Lives pupils in the class include only Young Lives pupils on the class roster. If there are more than 20 use the extra lines sheet at the back of School Booklet 1.

See the example below:

CLASS ROSTER

YOUNG LIVES SCHOOL CODE: PHY0100100 **CLASS: 5B**

TOTAL STUDENTS ENROLLED IN CLASS:____ TOTAL ETHNIC MINORITY STUDENTS ENROLLED IN CLASS:_____

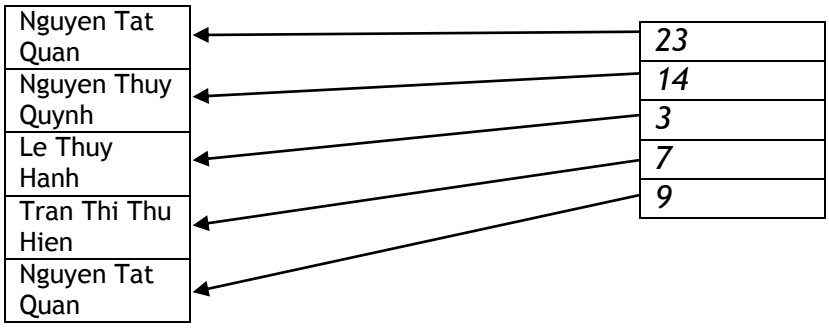
1. PUPIL ID	2. Is this child a Young Lives child? 00=No 01=Yes	3. If YES, please insert YL Child ID from YL school site roster If NO, please write the name of the non-YL child from class register	4. COMPLETE THIS SECTION WITH THE HELP OF THE TEACHER AND CLASS REGISTER		5. ASK THE CLASS TEACHER TO RESPOND TO THIS SECTION USING THE CODES: 01=Very High; 02=High; 03=Medium; 04=Low; 05=Very Low			
			4.1 Test score in Vietnamese	4.2 Test score in Maths	5.1 Level of support at home	5.2 Academic ability	5.3 Motivation to succeed at school	5.4 Participation in class
CH01	*[01]*	*VN010003*	*[09]*	*[08]*	*[03]*	*[03]*	*[04]*	*[01]*
CH02	*[01]*	*VN010004*	*[07]*	*[08]*	*[05]*	*[02]*	*[03]*	*[01]*
CH03	*[02]*	*Vu Son*	*[06]*	*[05]*	*[04]*	*[01]*	*[03]*	*[02]*
CH04	*[02]*	*Tien Nguyen*	*[07]*	*[06]*	*[03]*	*[04]*	*[05]*	*[05]*

[please note that in the second column above code 02 should be 00]

Pupil Random Selection Technique

Follow the procedure below to select pupils for the class sample of 20 after you have completed stage 1 above.

- You need to use this procedure if there are more than 20 pupils in the class in total and if less than 20 are Young Lives children (this will be almost all classes)
- Use the 'Random Number Lists' on the last page of this manual (Appendix 1)
- Ask the class teacher for the class register (list of pupil names)
- Note which children on the list are the Young Lives index children
- Count the number of pupils present in the class
- Select the column on the Random Number List which is **closest but larger than** to the class size you counted above. *For example if there are 18 students in a class, select the random number list with 20 children. If there are 34 students in a class, select the random number list with 40 children.*
- Place this random number list next to the class register (and line up the two lists – they may have different spacing see below)



- Starting with the highest number on the selected random number list, select the child's name next to the highest number (in the example above it is 23)
- This child will be included in the class sample
- If this child is absent from class or is a Young Lives index child or if there is no name next to this number ignore this selection and go to the next highest number
- Also, if a child does not wish to participate, ignore this selection and move to the child with the next highest number (try encouraging the child to participate first)
- write the selected child's name on the class roster in column 3 (see above example)
- Repeat the process using the second highest number, then the third highest number and so on, until there are 20 children recorded in the class roster
- Check that all the selected pupils consent to participate. If a pupil does not wish to take part, return to the random number list to select an extra pupil to replace the pupil who has opted-out.

Example

There are 28 children in the class in this example. So the fieldworker selects the random number list for class size up to 30 and places the list next to the class register. There are four Young Lives index children in the class (highlighted). So the fieldworker must select 16 additional children**. See the example list below**.

- To select the first child the fieldworker finds the highest number on the list, 30, and sees which child's name is next to the number (Chau Quoc Hung). The fieldworker checks that the child is present in class. If so, he writes this child's name on the roster in column 3. This is pupil CH05 (CH01-CH04 are the Young Lives index children).

- To select the second child, the fieldworker finds the next highest number on the list, 29, and sees which child's name is next to the number. He checks whether this child is present. If so, he writes this child's name on the list (Nguyen Thao). This is pupil CH06

- To select the third child, the fieldworker finds the next highest number on the list, 28, and sees which child's name is next to the number. There is no child here (as there are only 28 children in the class). So the fieldworker moves to the next number on the list, 27. This is a Young Lives index child (Le Thi Loan). So again the fieldworker moves to the next highest number, 26. This child can be selected (Chu Minh Nguyet). This is pupil CH07

- To select the fourth child, the fieldworker finds the next highest number, 25. This child (Nguyen Tat Quan) is absent from class. So he finds the next highest number, 24 (Nguyen Ngoc Hung). This is a Young Lives index child. So he finds the next highest number, 23 (Nguyen Linh). This child can be selected and is added to the class roster as pupil CH08.

- The fieldworker continues this process until there are **a total of 20 children** on the roster

	Classroom register (Child name)	**Random number list for class size up to 30**
1	Bui Viet Hung	9
2	*Nguyen Ngoc Hung*	24
3	Chau Quoc Hung	30
4	Tran Thanh Huong	21
5	Tran Lan Huong	16
6	Nguyen Thi Thanh Huyen	8
7	Nguyen Thanh Huyen HR	13
8	Tran Minh Khon	11
9	Tran Thi My Linh	19

10	*Le Thi Loan*	27
11	Nguyen Thao	29
12	Nguyen Linh	23
13	Le Nghi	1
14	Phan Van Ngoc	2
15	Tu Bach Ngoc	12
16	Bui Thi Thuy Ngoc	15
17	Chu Minh Nguyet	26
18	Dang The Nhan	6
19	Trinh Chu Khanh Nhien	7
20	Dao Ngoc Ninh	5
21	*Le Tien Phong*	20
22	Luong Minh Phuong	22
23	Nguyen Tat Quan	25
24	Nguyen Thuy Quynh	18
25	Le Thuy Hanh	3
26	Tran Thi Thu Hien	14
27	Nguyen Duc Thang	17
28	*Tran Kim Thu Thao*	10
29		4
30		28

SELECTION OF NON-YOUNG LIVES PUPILS. As this procedure is complex and can be time-consuming, you should complete this BEFORE visiting the class to administer the child questionnaire or tests. Ask the class teacehr to supply the class list and to indicate who is absent today. Take this to a quiet place (e.g. the staff room) to identify the selection of non-Young Lives pupils. You can then enter the identifiers on the child questionnaire cover sheets and the test answer sheets and take these to the class with you.

Stage 3: With the Class (Homeroom) Teacher

Columns 4 and 5 of the class roster are completed together with the class teacher. You should ask the teacher to collect the necessary class and pupil records to complete column 4. It will take around one hour to complete the data for columns 4 and 5, so be sure to arrange a convenient time for the teacher to do this. You should make the instructions clear to the teacher as follows:

Column 4: Complete a score (out of 10) for each child using your records for the first 45 minute test in this school year (2011-12) in Vietnamese and maths.

Column 5: Using your knowledge of each pupil on the list, complete column 5 by entering a score from 01(very low) to 05 (very high) for each of the four categories.

Please ask the teacher to identify the number of pupils enrolled in the class and the number of ethnic minority pupils and complete this at the top of the class roster.

Dealing with Pupils with Identical Names

Sometimes there will be more than one pupil in a school with the same name. It is important that every Grade 5 Young Lives pupil in the school is correctly identified and located in the appropriate class.

GSO will provide supplementary information on each YL child – name, address, parents' names to help confirm the child's identity.

If necessary, confirm by asking the child individually. Check whether the child's household was visited by a fieldworker 2 years ago (in Round 3 of the survey).

It is essential to ensure that no pupil is incorrectly identified because of there being more than one pupil with the same name.

7.2 Pupil tests in Maths and Vietnamese

These tests should be administered in a class group of 20. In exceptional cases (very large schools) you may combine two groups and administer in a group of 40 (two classes together).

Be careful to take with you enough of the child test papers and answer sheets. You will not know exactly how many classes will need to take the test until you arrive at the school. So please overestimate.

Follow the instructions below:

- Don't administer both child tests on the same day. You can administer one test before or after the child questionnaire, however.

- 20 selected pupils will complete the tests. Pupils who are not selected should leave the room. Explain that the selection is purely random so that pupils do not feel excluded. If there are 21 or 22 pupils in the class, you can allow the 1 or 2 non-selected pupils to take the test. Please do not complete the fieldworker section of the test answer sheet and please destroy the answer sheet for these pupils immediately. Do not return it for data entry.

- Explain that this is not a school test. The results of the test are confidential and will not be linked to the pupil's name.

- Complete the IDs at the top of the answer sheet for the 20 pupils. Use the school/class roster to get the information you need. Complete the answer sheets before the class as pupils will need the full 45 minutes to answer the tests. a space is being added to the answer sheet for 'child is absent'. The Fieldworker should complete this if the Young Lives child is absent on the day of the test or in the case of a non-Young Lives child who was present on the first day (selected by the random process) but not on the second day (for the second test). Also mark absent any pupil who refused to complete the test.

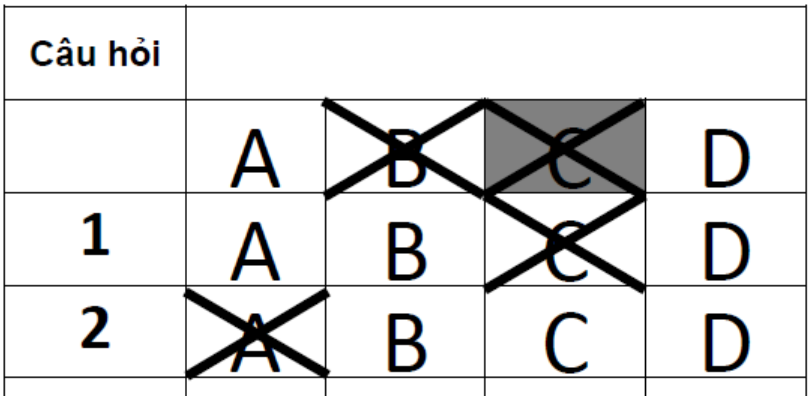
- Give the correct answer sheet to each selected pupil on the class roster. Note that pupil names are NOT written on the answer sheets, so you must be sure that the correct sheet is given to the pupil according to the roster.

- Explain to the class how to complete the answer sheet – the box of the correct answer is crossed as in the example on the sheet

- Explain that pupils should not write on the question booklet, only on the rough paper.

- Provide a sheet of rough paper for pupils' notes/calculations.

- If pupils want to change an answer, they should cross the new box and shade in the old one. For example:



- Distribute the question booklet face down

- Begin the test, write the start and end time on the blackboard (45 minutes)

- Pupils should be instructed to attempt all the questions. If they cannot answer a question, they should select what appears to be the best answer and move to the next question.

- No calculators may be used

- Do not help the pupils with the questions

- Do not allow the pupils to talk to each other or to see each others' answers

- If pupils complete the test early they should remain seated and wait quietly to the end of the test

- 10 minutes before the end of the test, ask pupils to check their answers if they have finished

- Keep the answer sheets for the class together and label the package carefully with the school details (including id).

7.3 Pupil Booklet (Pupil Self-Completion Questionnaire)

The pupil booklet must be completed by all 20 sampled children in each surveyed class. The booklet is self-completed, supervised by the fieldworker. The booklet will take around 45 minutes to complete. It contains a background questionnaire plus a set of attitude items.

Prepare the pupil booklets before administration. Complete the details on the cover page (see below). This pupil is in class 5D. All these details are taken from the school/class rosters. note that the final version of the pupil questionnaire will also have a space to complete for if the child is absent or refuses to complete the questionnaire.

	YL School code	**PHY0100100**
	Grade 5 Class	**5D**
	Pupil ID *(from roster)*	**CH02**
	Is this a Young Lives child? 00=No; 01=Yes *(from roster)*	**[01]**
	If yes, what is the YL child ID? *(from roster)*	**VN010003**
	DATE OF INTERVIEW	**01 / 11 / 2011**

[please note the school code is 8 digits not 10 digits as shown in this example]

- ***Explain to the children that none of their responses will be linked to their name and that no information about them will be given to the school or teacher.***

- Encourage them to answer all questions as honestly as possible. Ask the class teacher to leave the room during the administration of the questionnaire so that children feel free to respond honestly.

- You can help pupils to understand and to answer the questions but you should be careful not to lead them to particular answers on attitude/opinion questions

Pupil Questionnaire Part 1

If the class are good readers (ask the class teacher about this) then allow the pupils to complete this section quietly by themselves. Allow 25 minutes. Ask pupils to raise their hand if they need help understanding any question. The fieldworker should walk around the class to check that the questions are being understood correctly.

If the class are weaker readers (check with the class teacher) you may read each question and ask the pupils to select their answer as you go along.

Ask pupils to check that they have answered EVERY question before completing part 1 and moving to part 2.

Please complete the front page before giving the booklets to pupils. Ensure that the correct booklet is given to the student with that pupil ID (using the class and school roster).

Fieldworkers are encouraged to help pupils both as a group and individually to understand these questions and to select the appropriate response category. However, pupils should not discuss their answers with each other and should not allow other pupils to see their responses.

Specific Question Guidance

Q 1 Pupil's date of birth. Please note that some pupils may not readily recall their date of birth. Write an example of a date of birth on the board in the class and help the pupils to work out their dates of birth if necessary.

Q 10 Please include only biological brothers and sisters

Q 18 If using more than one method of transport to get to school, pupils should select the method that is used to cover the largest distance.

PUPIL QUESTIONNAIRE - please note changes to the questions on extra classes and include the guidance below:

'Extra classes' are classes which some children in the grade 5 class attend and which are outside of the compulsory school day. Please explain this carefully to the class before allowing them to answer the questions on extra classes. There are many different cases. For example, some children attend full-day schooling but at 430, after the full day ends, they go to English and Computer classes in the school (for which they pay extra). These are extra classes. Some attend half-day schooling but in the afternoon go to other classes 2 days a week (for which they pay extra). Others may go to a teacher's house on Saturday morning. These are extra classes. If the WHOLE class attends and the class is COMPULSORY and no EXTRA PAYMENT is required, this is not an extra class.

If a parent is blind and can read braille, the child should answer that the parent can read and write Vietnamese.

Pupil Questionnaire Part 2

For part 2, pupils respond to a series of attitude statements. Explain to the pupils that there are no correct answers to this part of the questionnaire. Explain that you will read a sentence aloud and then they should select the response which best describes how they feel in relation to that sentence.

The attitude items come in three boxes. Note that the response categories are different each time.

- ***Before you read the sentences, carefully explain the response categories for the set of sentences you are about to read.***

This part of the questionnaire should take around 15 minutes. At the end, ask pupils to check that they have responded to all the items before concluding.

Dealing with Pupil and Teacher Absence

- **Always complete the cover sheets for all instruments for absent pupils and teachers and return these along with the completed instruments. Be sure to identify the pupil or teacher as absent on the cover sheet (a box will be inserted for this).**

If a Young Lives pupil is enrolled in school but absent on the first day of fieldwork, complete the rosters as normal including for this pupil. Include this pupil in the sample of 20 pupils. Complete the cover sheets for the tests and pupil questionnaire for this pupil.

On each subsequent day of the survey fieldwork, check whether the pupil is present. If he is present, ask him to complete both the tests and the pupil questionnaire if possible.

If at the end of the fieldwork, this Young Lives pupil has not attended, include the uncompleted test answer sheets and questionnaire booklets in the package of instruments to be returned for data entry.

If any non-Young Lives children do not complete all three child instruments, for example because they are absent on the second day of fieldwork, please return the uncompleted instruments with the others for data entry.

If there is one or more Young Lives children on the class list, even if no Young Lives children are actually present, please continue to conduct the survey with that class.

If a grade 5 teacher of a class which contains a Young Lives child (one of the classes in the sample) is absent on the first day of fieldwork, complete the rosters as normal and also the cover sheets for the three teacher questionnaires.

On each subsequent day of the survey fieldwork, check whether the teacher is present. If he is present, ask him to complete all three questionnaires if possible.

7.4 School Booklet 1: School Observation Schedule

One infrastructure observation schedule should be completed for each school site in which young lives children study in grade 5.

It is to be administered by the fieldworker through ***observation***. That is, the fieldworker should walk around the school site and complete the questionnaire by observing the facilities.

Please complete the cover sheet including the correct school site ID. The school site ID is pre-completed on the school roster.

Specific Question Guidance

Q1.0

A school in need of 'Major repairs' could include a school where there is damage to the building which may make render classrooms unusable in poor weather conditions, for example. It could include a school where damage to parts of the building means that classrooms have to be shared between two classes or where other rooms (e.g. assembly room) have to be used as classrooms owing to the need for repairs. Major repairs would not include cosmetic repairs or upgrading of classrooms to an above basic functional standard. The question is intended to capture whether the need for repairs is such that learning is likely to be compromised.

Q1.1

Separate classroom here means that the grade 5 class is not taught in a room shared with other classes.

Q1.2 – 1.4

Observe the facilities here. If it is not possible – e.g. no access to computer rooms, ask children as well as teachers whether the internet is used by pupils.

A library here could include a book-cupboard or store if children borrow books regularly from it.

Q1.5

Note this question applies only to drinking water, not water for other purposes. It applies to drinking water for children not school staff.

7.5 School Booklet 2: Principal Questionnaire

One principal questionnaire should be completed for each **school group**. Sometimes, when there are satellites and a main school, a principal is in charge of more than one school site. These sites have one principal, so the questionnaire is completed only once.

This questionnaire is fieldworker administered. Therefore you need to arrange a time to interview the principal. The interview should last around 45 minutes.

Please ensure that the cover sheet is correctly completed. Please note that codes for all the school sites which this principal is in charge of should be completed on the cover sheet.
If the principal is absent during the fieldwork time, please interview the deputy principal and ask him to answer with reference to the principal. Try to find a deputy who knows the principal well.

Specific Question Guidance

Q 0.1 Write the codes for the main school plus any satellites which belong to this school group and which are headed by this principal. The first 6 digits of all the codes entered here should be the same.

Q 0.2 The principal code can be copied from the school codes in 0.1 (removing the last two digits).

Q 1.6 Including working in any kind of school in any location as a teacher.

Q 1.8 and 1.9 If no exact match is found, choose the closest alternative.

Q 1.10 Total number of equivalent full-days that training was undertaken.

Q 1.11 This is a professional award that can be given at several levels. Teachers are required to enter formally for the selection process. If a teacher has been awarded the title of 'excellent teacher' at more than one level (e.g. province and district) enter the highest level only.

Q 2.1 This should refer to the maximum range (if there are satellites). E.g. the main school may offer grades 1-5 and a satellite grades 1-2. If so enter 01 to 05.

Q 2.7 P135 is a government programme to support poor communes

Q 3.1 Full-day schooling means two shifts – before and after lunch on most days of the week.

Q 3.2 This question asks about classes in Grade 5. If some classes are full day and some are half day, answer for the full day classes here.

Q 3.3 Free of charge here means that the pupils pay no extra fees for attending school for a full day when compared to attending for a half day.

Q 4.1 This question is intended to examine how serious these challenges were in a particular school. So the principal should be asked to think about how often each one of these difficulties presented a problem for him, but especially for the children's learning. Child labour here means work outside of school e.g. domestic work, paid work, farming work.

Q 5.0 This question asks if all parents who wish for their children to attend this school are able to send their children here or if there are restrictions on entry.

Q 5.2 Please enter figures in VND (000s) for the annual amount payable to the school in the current school year. If expenses are paid but not to the school (e.g. to a shop for school uniform or textbooks), do not include these expenses here.

Trai Tuyen: This fee will only to apply to a child who has joined the school in Grade 5. Otherwise it will have been paid in Grade 1.
Please note that while most of the fees should be entered as annual figures, extra classes and full-day schooling fees should be entered as monthly fees.

7.6 Teacher Booklet 1: Grade 5 Teacher Questionnaire

This questionnaire is for the homeroom teacher of the sampled Grade 5 class. Interview the teacher to complete it. Some of the questions are similar to those asked of the school principal. Be sure that you have read the notes on the principal interview (above). again, the final version of the teacher questionnaire will have a space to complete for absence or refusal on the cover page. We will not include this for the principal. If the principal is absent the fieldworker should interview the deputy.

The final section of the questionnaire asks the teacher to respond to a list of attitude items. Give the questionnaire to the teacher and ask him to complete this section by himself. Ask him to respond as honestly as possible and allow him to do this without you looking at the responses. Explain to the teacher that this information will not be linked to him individually or shared directly with the school.

Specific Question Guidance

1.16 Applies to any meeting at which the teacher's work was evaluated during the year, including at the end of the semester or at the end of the year, by the principal or by an inspector etc.

2.11 Refers to formal meetings planned in advance, not ad hoc individual meetings with parents.

2.5 This question ask about fees only, not other costs of attending full-day schooling, for example paying for school lunch.

What if the Homeroom Teacher does not teach maths or Vietnamese to the Grade 5 Class?

If a teacher who is not the homeroom teacher teaches maths or Vietnamese to a selected Grade 5 class, follow these instructions:

- The homeroom teacher should always be the teacher to be interviewed for the teacher questionnaire
- If the homeroom teacher does not teach maths to his Grade 5 class, do not ask him to complete the maths teaching questionnaire. Ask the maths teacher to complete it.
- If the homeroom teacher does not teach Vietnamese to his Grade 5 class, do not ask him to complete the Vietnamese teaching questionnaire. Ask the Vietnamese teacher to complete it.

7.7 Teacher Booklet 2: Teacher Questionnaires on Maths and Vietnamese teaching

Each grade 5 teacher should complete the maths and Vietnamese teaching questionnaires. Arrange a time for the teachers to complete the questionnaires under your supervision. ONLY the homeroom teacher should complete the teaching questionnaires (teacher tests). If the homeroom teacher does not teach maths or Vietnamese to the class, fieldworkers SHOULD NOT ask any other teacher to complete the test in his/her place. For simplicity, ALWAYS ASK THE CLASS TEACHER (HOMEROOM TEACHR) TO COMPLETE THE MATHS AND VIETNAMESE TEST.

- Explain to the teachers that at least 45 minutes is required to complete the questionnaires. The questions require careful thought.
- Allow up to one hour per questionnaire.
- Try to arrange for teachers to complete the questionnaires on different days
- Do not allow the teachers to discuss their answers or to see each other's responses
- Do not help the teacher to answer the questions
- The time allowed for each of the teaching questionnaires (tests) is one hour. Instruct the teacher to attempt every question and leave no responses blank if possible.

8. Compensation for Participants and Schools

GSO will provide instructions to the team leader on how to compensate the schools and the participants in the school survey. Please follow these instructions carefully.

9. Fieldworker conduct

Please read this section carefully and follow the guidance given.

9.1 Basic Principles

There are a number of basic principles that the fieldworker must follow throughout the survey:

1. Ensure participants have seen information sheets and understood why you are conducting a survey in their school
2. For questionnaires, ensure you ask the questions exactly as they appear in the questionnaires
3. Make sure that you thoroughly check test and attitude items and follow-up on any incomplete sections
4. Never make answers or information up
5. Keep a neutral attitude with the respondents
6. Avoid any harm to the respondent
7. Treat everything the respondent tells you as confidential
8. Never make promises to participants that you cannot keep
9. Avoid 'leading' the respondent to any particular answer. You should, however, clarify the meaning of the question if required using the information from this manual.

9.2 General Conduct

CONDUCT OF THE FIELDWORKER

1. Be polite towards everyone and treat all participants with respect. Your behaviour can have an enormous influence on people's opinions in the localities covered by the survey.

2. Avoid disturbing or upsetting anyone by your behaviour.

3. Be properly dressed, so that the respondent will be inclined to trust you, as a reliable and responsible person.

4. Arrive at the stated time, and never keep the respondents waiting.

5. Never attempt to sell anything to the child or school and its representatives.

6. Never lend or borrow money or goods from the school and/or its representatives.

7. Never bribe the child or school in order to get them to cooperate.

10. What if…?

- One of the selected pupils has learning difficulties and cannot complete the instruments or tests? *Help the pupil to complete the pupil questionnaire and ask him to complete any questions he can on the maths and Vietnamese tests. Leave any questions that the pupil cannot understand unanswered (blank).*

APPENDIX 1: RANDOM NUMBER LISTS

Class size:	up to 30	up to 40	up to 50	up to 60
	9	11	36	28
	24	10	15	8
	30	3	3	47
	21	39	37	48
	16	25	30	24
	8	19	42	45
	13	26	38	3
	11	22	27	15
	19	4	40	41
	27	31	2	2
	29	13	19	33
	23	38	48	39
	1	33	23	6
	2	23	12	54
	12	18	41	53
	15	16	46	42
	26	8	16	30
	6	37	7	7
	7	28	9	35
	5	6	44	40
	20	17	4	25
	22	12	45	55
	25	15	10	37
	18	34	13	4
	3	29	6	56
	14	21	47	32
	17	1	25	31
	10	30	18	60
	4	27	5	11
	28	9	11	10
		35	21	16
		36	31	9
		24	1	59
		20	14	50
		5	20	23
		2	32	34
		32	29	57
		40	35	49
		14	49	26
		7	39	29
			43	5
			8	38
			50	18
			26	44
			33	22
			34	58
			24	17
			28	1
			17	52
			22	14
				21
				51
				12
				43
				19
				27
				46
				13
				36
				20

Young Lives

An International Study of Childhood Poverty

YOUNG LIVES SCHOOL SURVEY

ITEM RESPONSE SCORING IN THE VIETNAM SCHOOL SURVEY ROUND 1

ABHIJEET SINGH

July 2013

Overview

This note summarizes the process of generation of comparable test scores for Math and Vietnamese across the test and retest components of the Vietnam school survey (2012). The two rounds of testing were carried out at the beginning and the end of the academic year and were designed specifically to allow for the analysis of the learning increments ('value-added') over the course of the academic year. For this purpose, it is very useful to generate scores on the same metric using anchor items in Item Response Theory (IRT).

In this note, I detail the specific methodology of generation of the IRT scores in the Vietnam data and provide diagnostic graphs illustrating item fit and the distribution of final test scores.

Methodology

All questions in the Vietnam school survey tests, both for math and reading comprehension, were multiple choice questions; accordingly a three-parameter (3PL) Item Response Theory Model was thought to be most appropriate. This is the approach also taken by international testing programs such as TIMSS and PISA[1].

IRT models posit a mathematical relationship between the latent ability of an individual and the probability that the individual will correctly answer a given item; this relationship differs from item-to-item but is assumed constant across individuals. In the 3PL model, this relationship is given by:

$$P_g(\theta_i) = c_g + \frac{1 - c_g}{1 + \exp[-1.7 \cdot a_g \cdot (\theta_i - b_g)]}$$

where θ_i is the individual's ability, c_g is the "pseudo-guessing parameter", b_g is the item difficulty parameter and a_g is the item discrimination parameter. Under three core assumptions of IRT – unidimensionality of the trait being measured, local independence of item responses conditional on ability and no differential item functioning, standard maximum likelihood techniques can be used for estimating item specific parameters (a ,b, c) and individual ability parameters (θ) which are referred to here as the test scores.

Estimation was carried out in Stata using the OpenIRT suite of commands written by Tristan Zajonc. Missing responses to particular questions on a given test booklet were marked as incorrect for the purpose of generating the test scores. Estimated scores were standardized to have a mean of 500 and a variance of 100 in the base period, allowing these to shift in the second round. Replicated items across the two rounds were used to anchor the ability distributions across the two test rounds.

Results

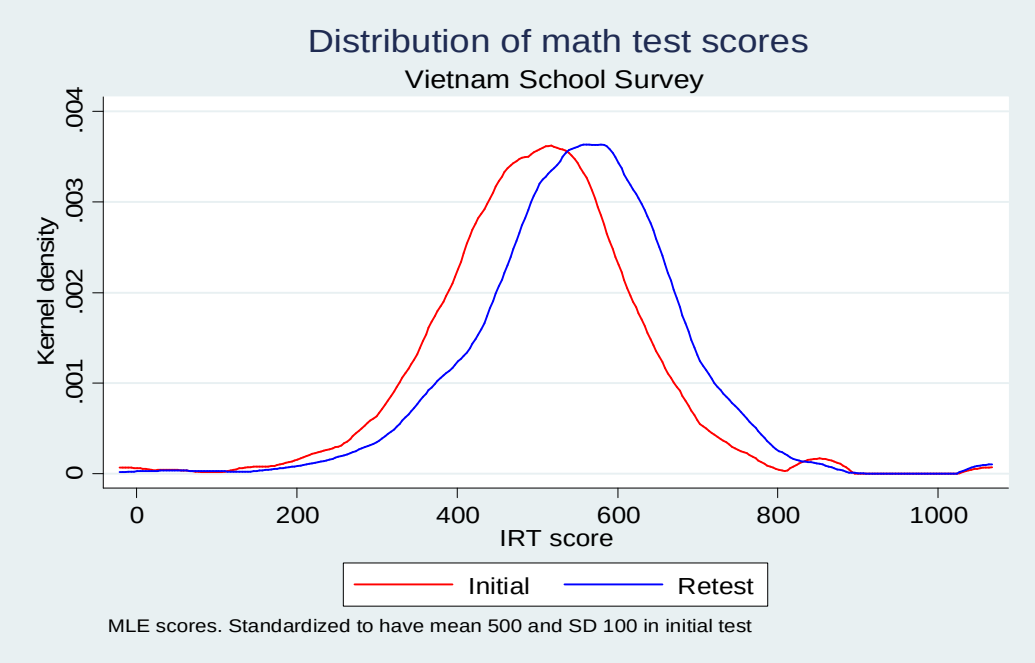
The OpenIRT software generates three sets of estimates of ability – maximum likelihood estimates, Bayesian expected posterior estimates and plausible values or multiple imputations estimates. Maximum likelihood estimates are unbiased estimates for an individual's ability (and for the sample mean) although it may be subject to significant noise especially at the ends of the distribution. Plausible values estimates draw plausible values from an individual's posterior distribution and then use these draws to estimate the true ability distribution (Das and Zajonc, 2010); these are better estimates of the higher moments (variance, skewness etc.) of the ability distribution[2].

The distribution of the math test score is given in Figure 1. As can be seen, the distribution has shifted rightwards i.e. indicating that additional skills have been acquired over the school year.

[1] See Van der Linden and Hambleton (1997) for an overview of IRT models.

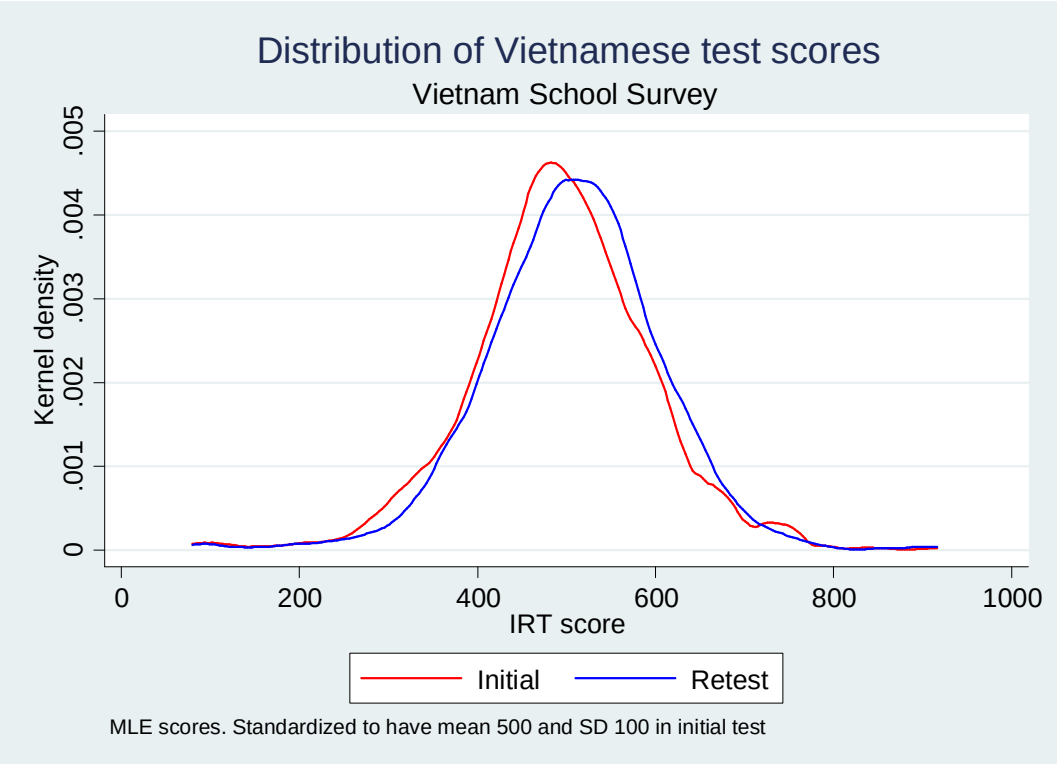
[2] See Das and Zajonc (2010) for a detailed discussion of the different estimates and their interpretation. EAP scores are generated without the inclusion of any manifest predictors.

Figure 1. Distribution of test scores in Mathematics



The distribution of the Vietnamese test scores is given in Figure 2. The near overlap between the two distributions indicates less evidence of increments in learning, although there are some signs that the distribution might have shifted to the right marginally and there is a statistically significant change in the mean score.

Figure 2. Distribution of test scores in Vietnamese



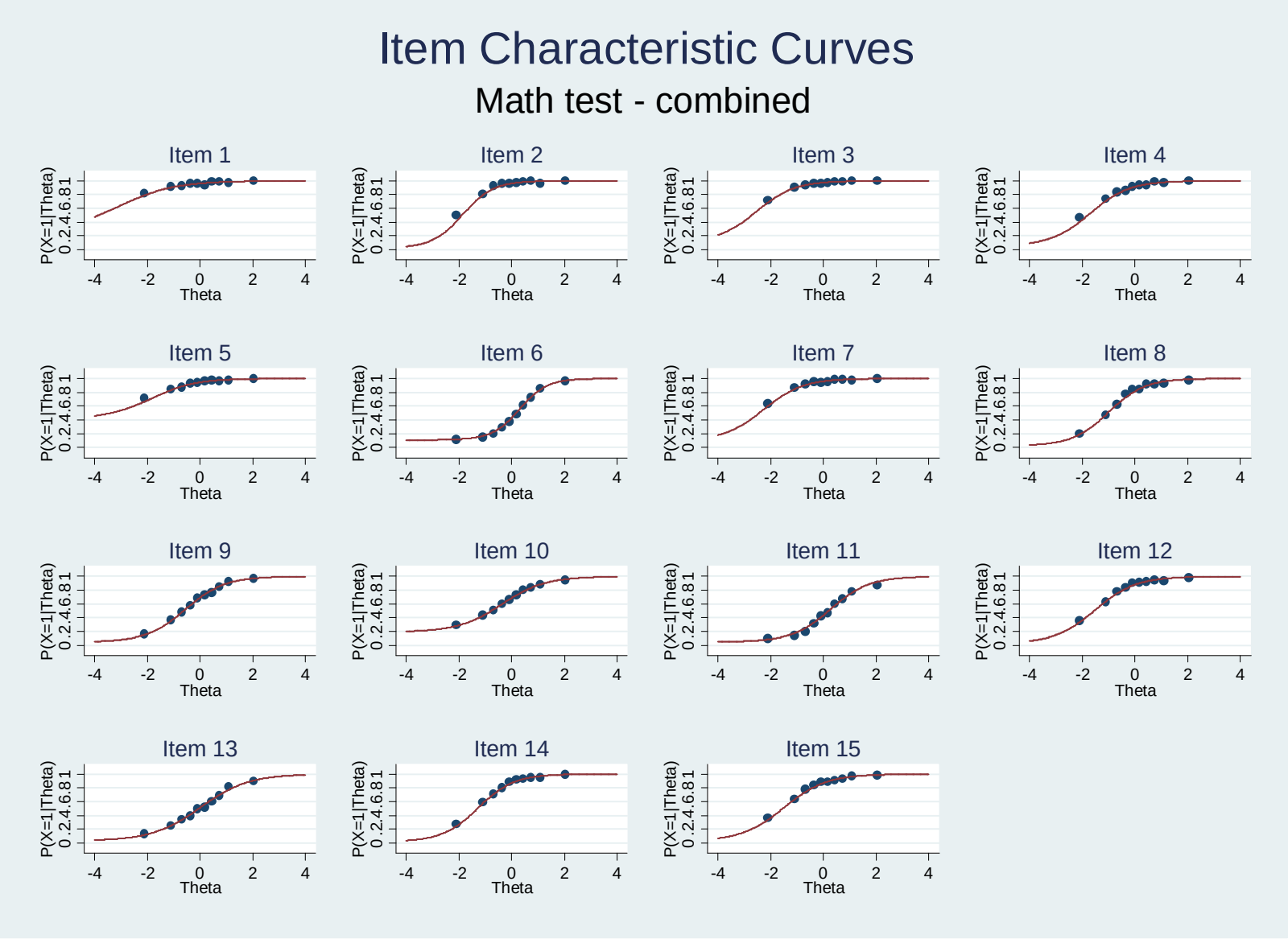
We also investigated the item fit of each of the test items by visually inspecting the Item Characteristic Curves (ICC) for each item. ICCs plot the predicted probability that an individual at a given level of ability answers the question correctly with the observed proportion correct in the data. Appendix 1 provides the ICCs for mathematics and Appendix 2 provides ICCs for Vietnamese.

References

Das, J. & Zajonc, T. (2010). India shining and Bharat drowning: Comparing two Indian states to the worldwide distribution in mathematics achievement. *Journal of Development Economics*, *92*(2), 175-187.

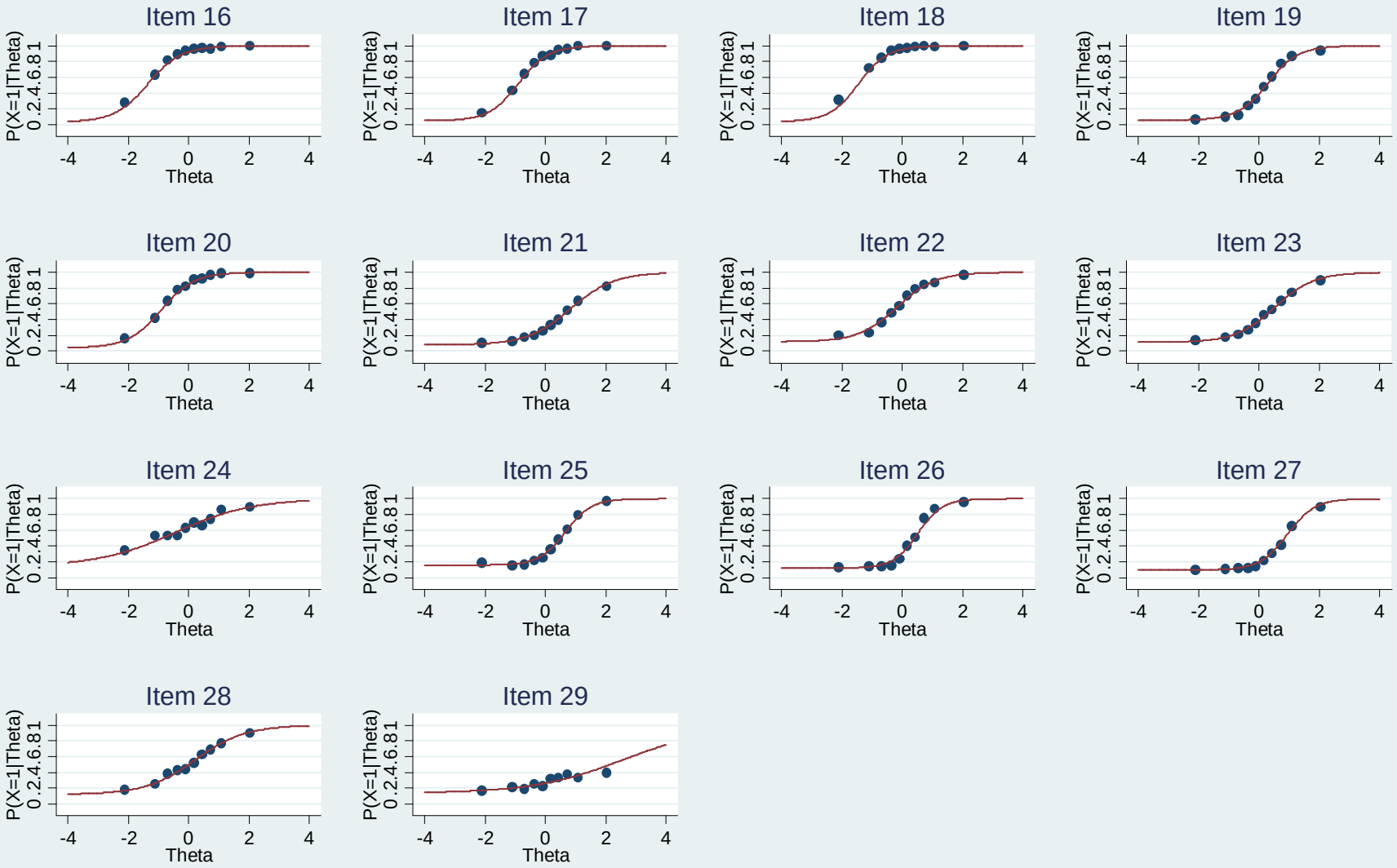
Van Der Linden, W. J., & Hambleton, R. K. (1997). Item response theory: Brief history, common models, and extensions. *Handbook of modern item response theory*, 1-28.

Appendix 1. Item Characteristic Curves for Mathematics



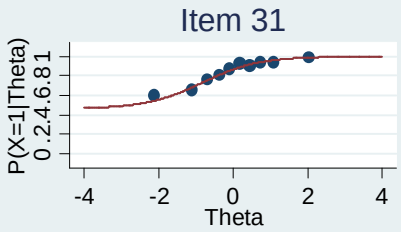
Item Characteristic Curves

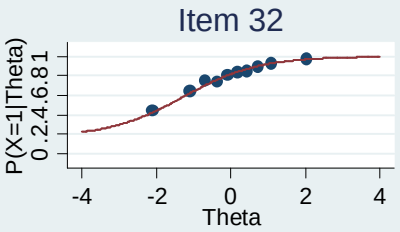
Math test - combined

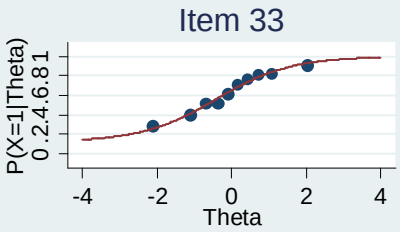


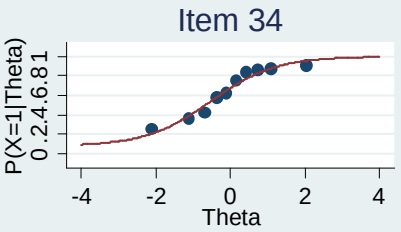
Item Characteristic Curves

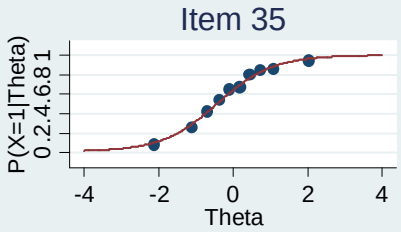
Math test - combined

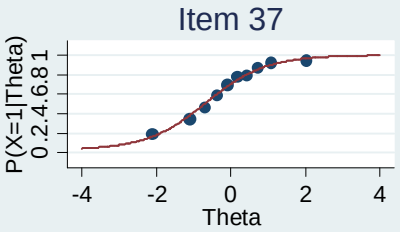


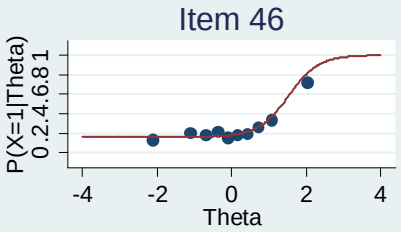


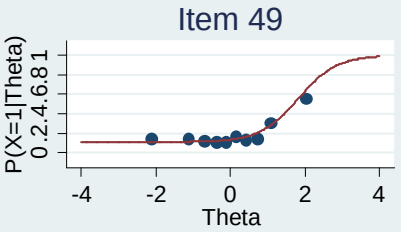


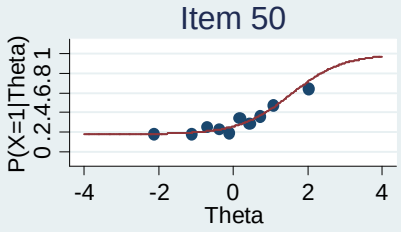


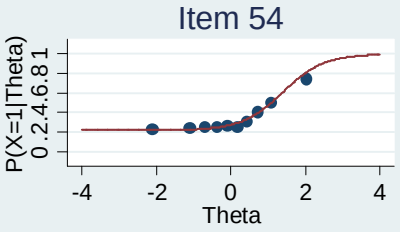


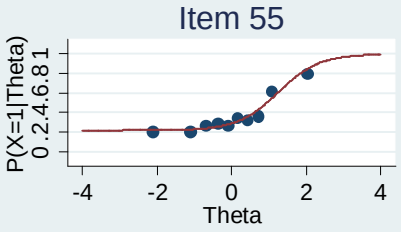


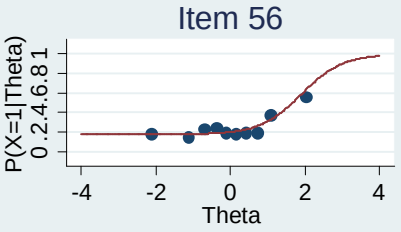


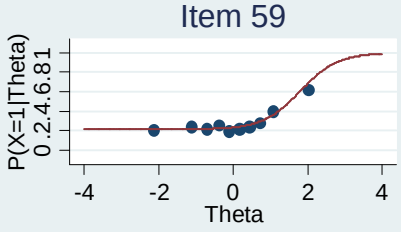




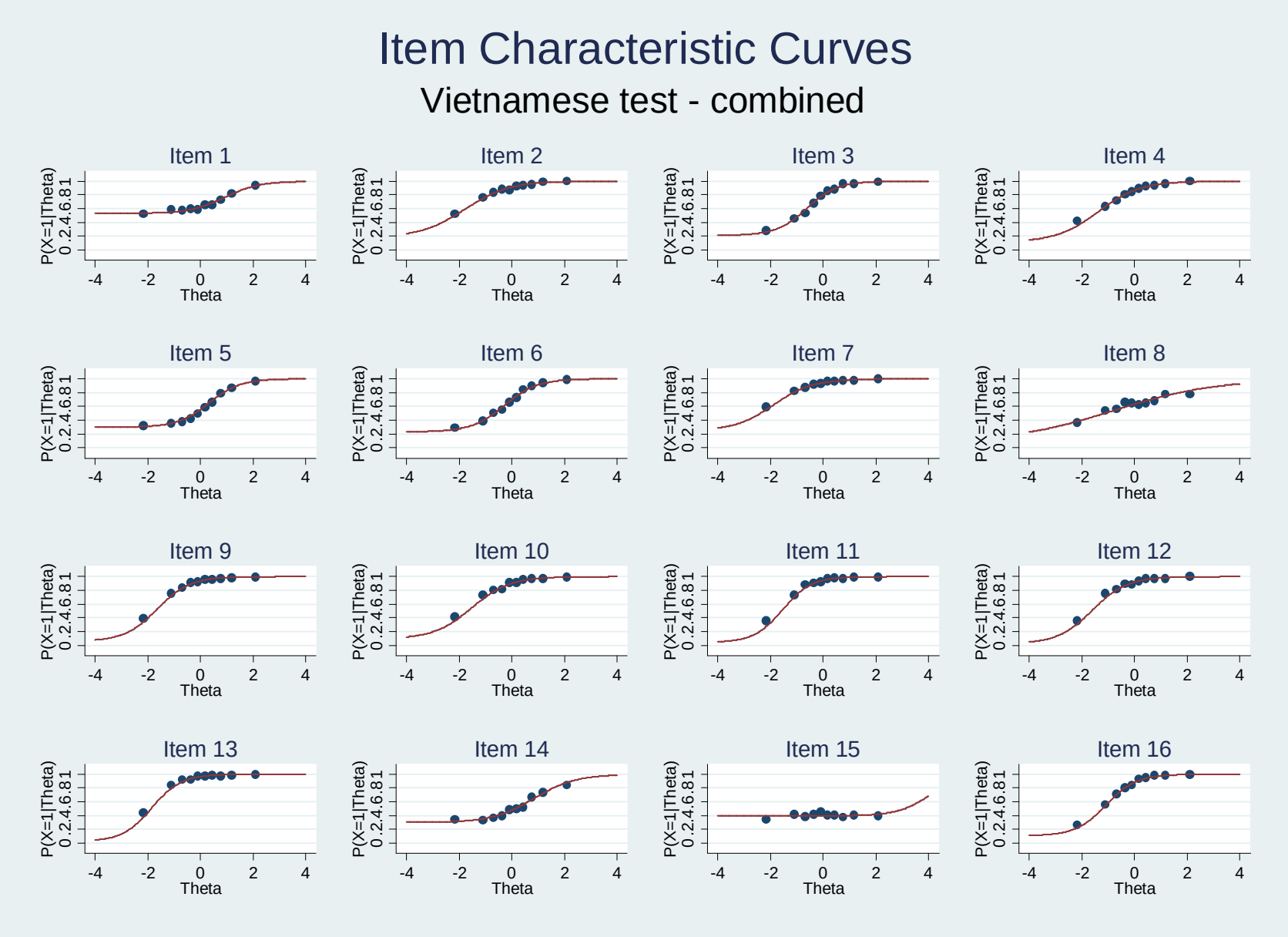






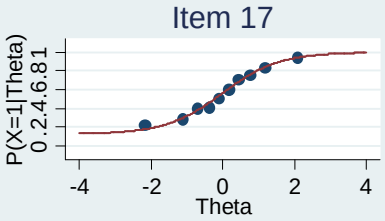


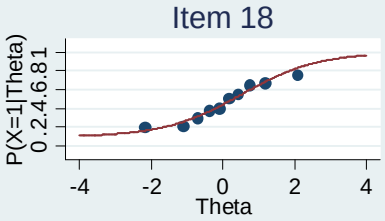
Appendix 2. Item Characteristic Curves for Vietnamese

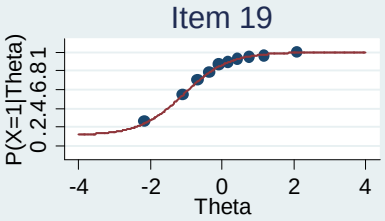


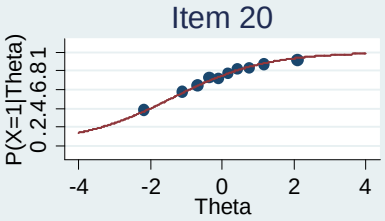
Item Characteristic Curves

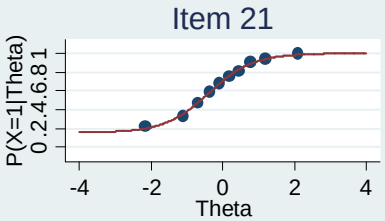
Vietnamese test - combined

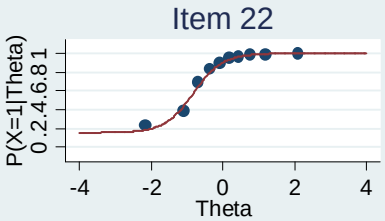


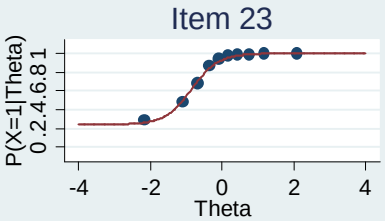


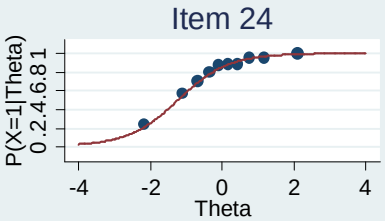


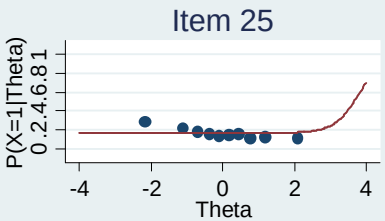


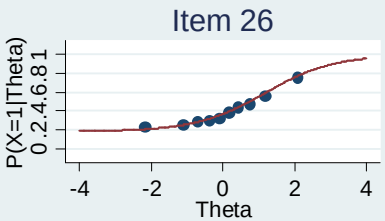


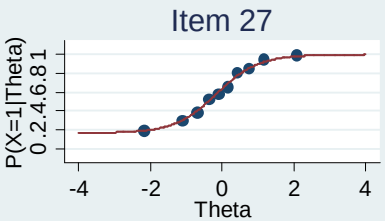


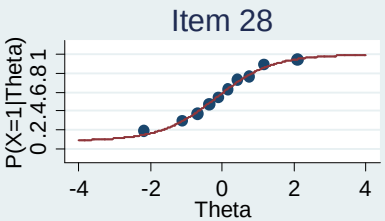


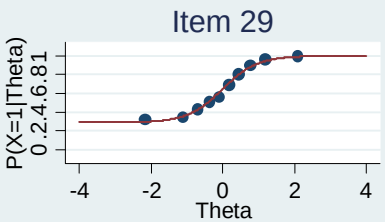


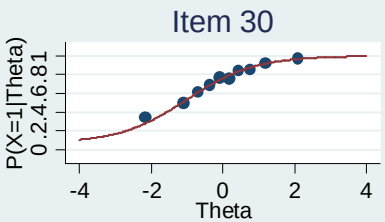


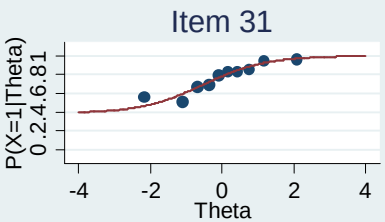


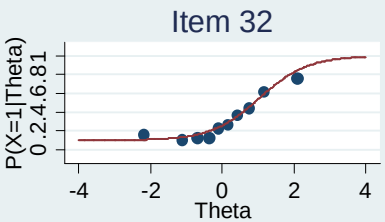






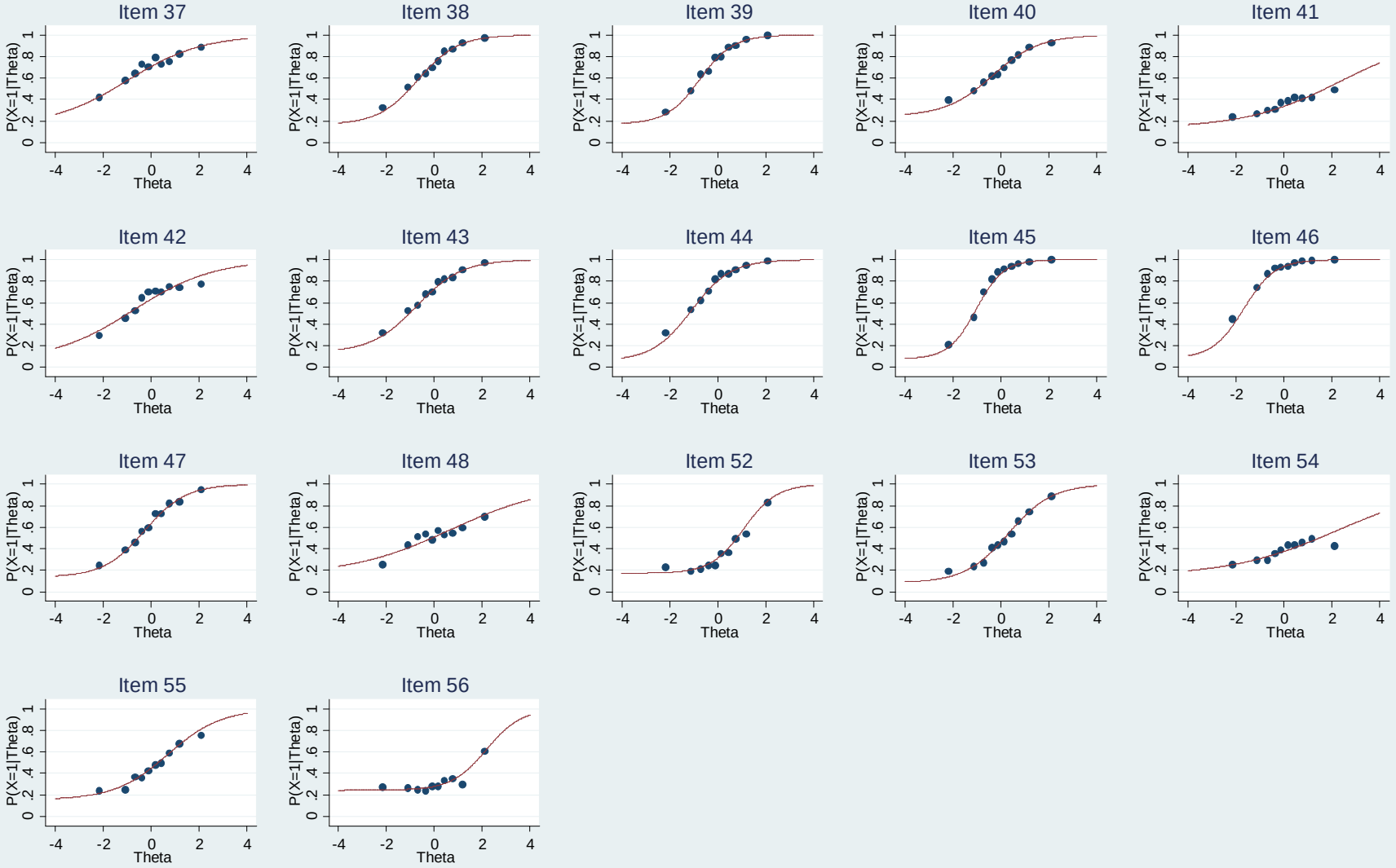






Item Characteristic Curves

Vietnamese test - combined



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

LOUISE YORKE

July 2013

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.

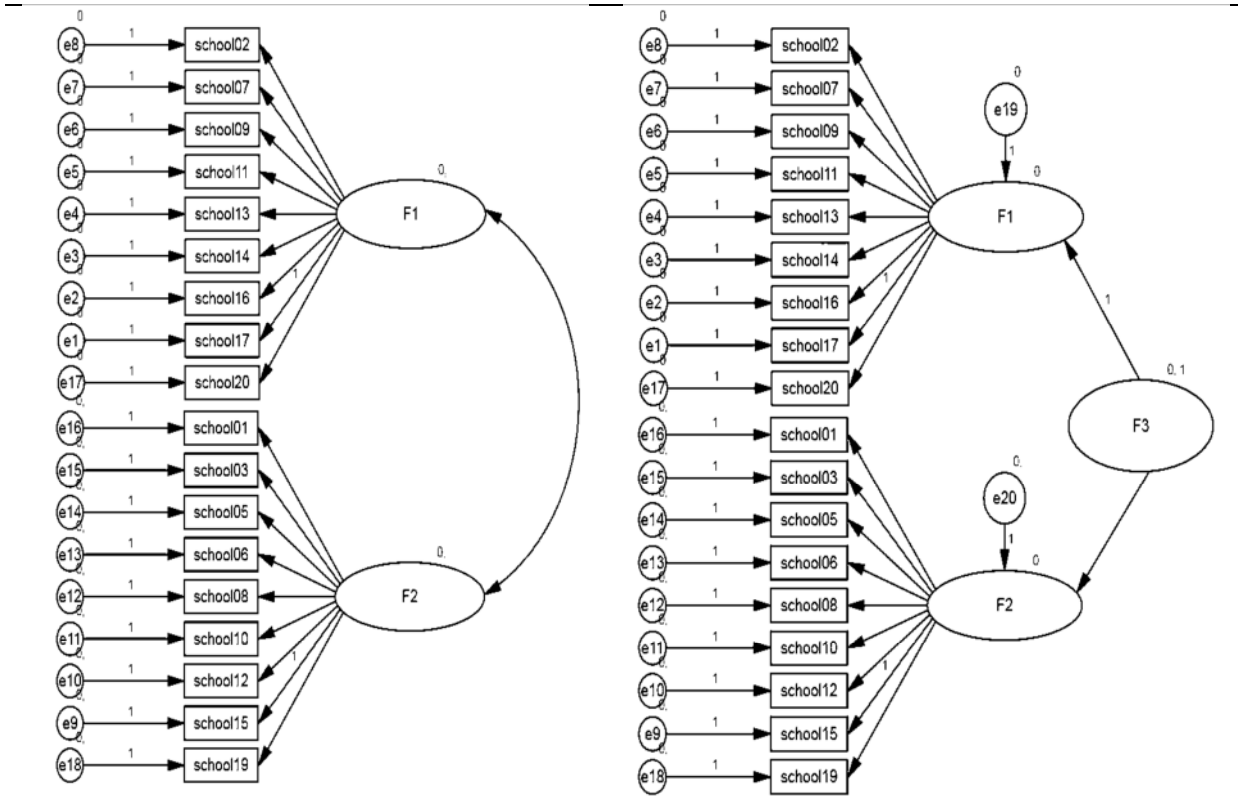
The items were rotated using oblique rotation (Direct Oblimin method) as it was hypothesised that the factors would be correlated (Costello & Osborne, 2005) and only variables with loadings of 0.30 and above were interpreted (Tabachnick & Fidell, 2007). Item 18 – 'I do not give up easily when I am faced 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

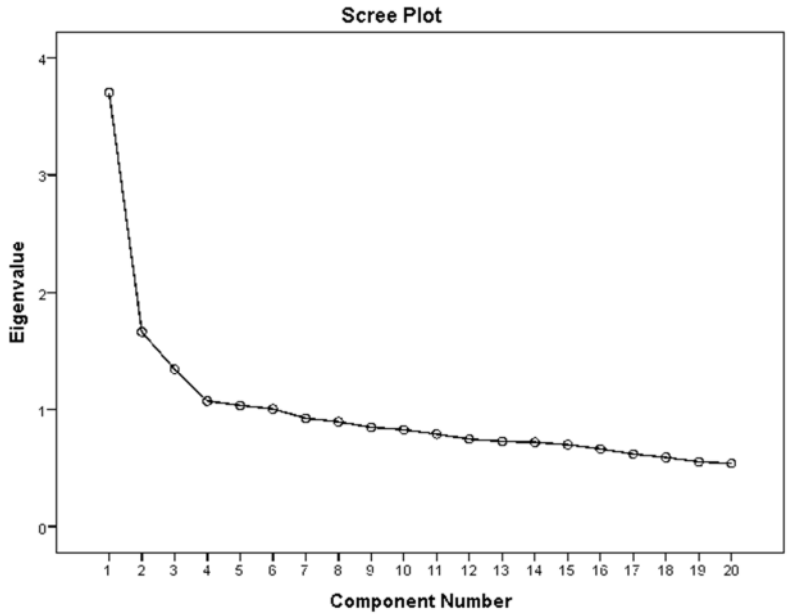
KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.832
Bartlett's Test of Sphericity	Approx. Chi-Square	3743.00
	df	171
	Sig.	.000

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

Young Lives

An International Study of Childhood Poverty

YOUNG LIVES SCHOOL SURVEY

VALIDATION OF THE ACADEMIC STRESS SCALE IN THE VIETNAM SCHOOL SURVEY ROUND 1

LOUISE YORKE

July 2013

Overview

With the objective of capturing detailed information about children's schooling experiences, the Vietnam School survey included items that were anticipated to measure academic stress amongst students. The Vietnam School Survey was administered to Young Lives children and their peers at two points during the academic school year 2011/2012 (wave one), first in autumn 2011 and again in summer 2012 (wave two). In contexts defined by Confucian Heritage Culture such as Vietnam, significant expectations and demands are placed on children and may be detrimental in their healthy development (Tan & Yates, 2007). Thus investigating academic stress in Vietnam has particular relevance. The academic stress scale (Hesketh et al. 2010) was used to assess academic stress in Vietnam. As this scale had not previously administered in a Vietnamese context, a two stage process involving exploratory and confirmatory factor analysis was undertaken to assess the psychometric properties of this scale using data collected at the beginning of the school year. The selection, adaptation and validation of the academic stress scale are described herein.

Rationale for the Inclusion of a Measure of Academic Stress

In cultures defined by the Confucian Heritage Culture (CHC) parents are usually highly invested in their children's education, and place significant demands on children holding high aspirations for their academic outcomes (Tan & Yates, 2007). For this reason, research suggests that children may experience high levels of academic-related stress which has negative consequences for their development. For example, in a study investigating the impact of academic stress in China, Hesketh et al. (2010) found that high levels of stress were experienced by Chinese primary school children, both at home and in the school environment, and placed pressures on the health and well-being of children. Academic stress may be particularly relevant in Vietnam where CHC exerts a significant influence on children's lives and education is seen as a pathway to upward mobility and as a means of alleviating poverty, improving economic growth and overcoming inequalities (Salomon & Ket, 2007; London, 2010; Nguyen, 2007). Due to the suggested negative effects of high levels of academic stress on children's development, an investigation of children's levels of academic stress is warranted.

Measuring Academic Stress in the Vietnamese Context

The academic stress scale developed by Hesketh et al. (2010) was designed to capture the levels of academic stress experienced by children in China. Seven indicators of school stress were included: enjoyment of school; worry about exams; pressure to do well; difficulty completing homework; fear of punishment of teachers; and being physically bullied or corporally punished at home. This scale was considered relevant for students in Vietnam. The original scale was translated into Vietnamese and back-translated into English. Answers were rated on a three-point scale as follows: 'always', 'sometimes' and 'rarely/never'.

Validation

A total of 3284 students completed the academic stress scale which was included as part of the School Survey in Vietnam at both the beginning and the end of the academic school year (2011/2012). To ensure that the scale was measuring the qualities that it purports to measure and to avoid the misinterpretation of information that would potentially lead to erroneous conclusions (Geisinger, 1994; Resise, Waller & Comrey, 2000; Douglas & Nijssen, 2003) the psychometric properties of the academic stress scale (Hesketh et al., 2010) are investigated using exploratory and confirmatory factor analysis. For the purpose of validating the scale, data from the first wave of collection, at the start of the school year, was used. This data was subdivided into two groups to facilitate cross-validation of the scale. Group 1 consisted of 1640 students and group 2 consisted of 1644 students.

Validation Stage One – Exploratory Factor Analysis

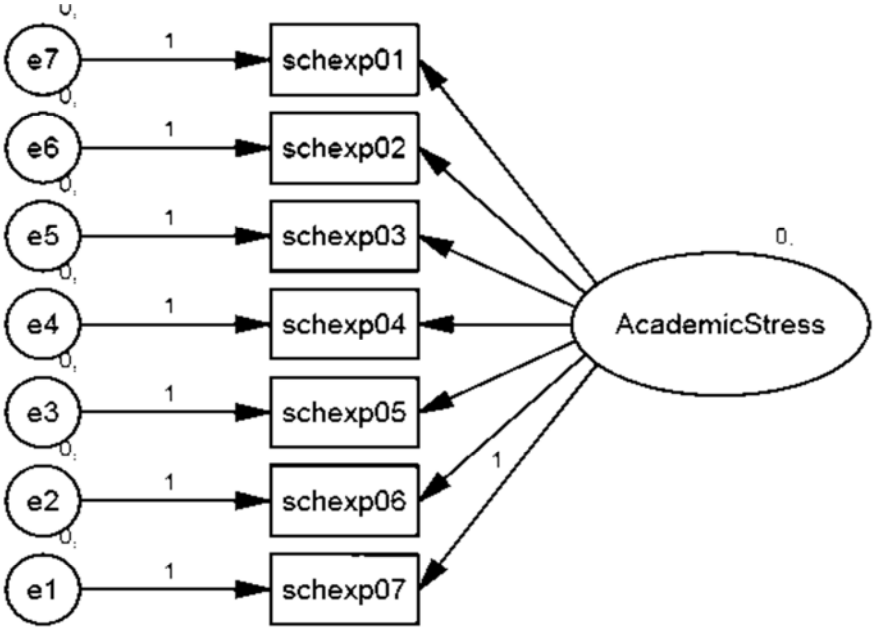
Principal Components Analysis was conducted on the seven items of the academic stress scale (Hesketh et al., 2010) using SPSS statistical software package, version 18 on a sub-group 1 (n = 1640) of the entire sample. Prior to analysis the items were examined for accuracy, missing values and outliers and all relevant items were re-coded. As the percentage of missing data fell between the range of 0.4 to 1.4, it was decided that the data were missing at random. Items were coded in the same direction so that higher scores were indicative of higher levels of stress and lower scores indicated lower stress levels. Summary statistics were generated for the items (Appendix A) and the inter-item correlation matrix was inspected (Appendix B) to ensure sufficient correlation among the variables for factor analysis (Floyd & Widman, 1995).

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 (Appendix C). The results of these tests pointed to the adequacy of the data to factor analysis (Tabachnick & Fidell, 2007). To decide what factors to retain, three decision rules were used: Kaiser's criterion which looks for eigenvalues above 1, inspection of the scree-plot (Cattell, 1966) and parallel analysis (Horn, 1965). Kaiser's criterion revealed the presence of two components with eigenvalues exceeding 1, which explained a total of 39% of the variance (See Appendix D). The scree plot indicated a significant elbow after the first factor (See Appendix E). Parallel analysis revealed the presence of one factor (See Appendix F). A one factor model most accurately reflects the theoretical model of academic stress proposed by Hesketh et al. (2010) and thus a one factor model was retained. As only one component emerged the items were not rotated.

Validation Stage Two – Confirmatory Factor Analysis

Confirmatory Factor Analysis was carried out using Amos (Arbuckle, 2006) to confirm the one factor structure that emerged from the exploratory factor analysis. This analysis was carried out on the second subsample of the population (n = 1644). The one factor model that emerged from the data in the first stage of the analysis is presented in Figure 1. The maximum-likelihood method on the covariance matrix was employed in the study.

Figure 1: Academic Stress



In order to achieve a comprehensive evaluation of model fit, both absolute and incremental fit indices were assessed and the results are presented in Table 1. The absolute fit indices, which provide the most fundamental indication of how well a specified a-priori model fit the data, were first consulted (Hooper, Coughlan & Mullen, 2008). For the Chi-Square test, the null hypothesis of a good fitting model was rejected $\chi^2(14) = 85.77$, $p < 0.05$. However, this statistic has been found to be problematic in large sample sizes and for this reason alternative fit indices were also consulted (Hooper, Coughlan & Mullen, 2008). The Root Mean Square Error of Approximation (RMSEA) equal to 0.056 with a 90% confidence interval falling between the range of 0.045 to 0.068 indicated that the model had good fit. The incremental fit indices were then consulted. These indices 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 and are not influence by sample size (Marsh, Balla & Hau, 1996; Hooper, Coughlan & Mullen, 2008). The Comparative Fit Index (CFI = .59) and the Tucker-Lewis Index (TLI = .80) indicated a borderline fit.

Table 1. Fit Indices

	Fit Index	Acceptable Threshold	ASC
Absolute Fit Indices	χ^2	$p > 0.05$	$\chi^2(14) = 85.77$, $p < 0.05$
	χ^2/df	2:0 - 5:0	6.13
	RMSEA	< 0.07	.056
	RMSEA 90% C.I.	0.00 to 0.08	.045 to .068
	Fit Index	**Acceptable Threshold**	**ASC**
Incremental Fit Indices	TLI	> 0.95	.59
	CFI	> 0.90	.80

The standardised regression weights were also inspected and the results are presented in Appendix G (Hooper, Coughlan & Mullen, 2008). Item 1 – 'Do you enjoy school?' was found to have a low factor loading and thus was removed from the model and the covariance matrix was re-calculated for this revised model. However, the model fit decreased when this item was removed (See Appendix H). Thus a decision was made to retain the original model. Following this procedure, reliability analysis was conducted. The seven items of the academic stress scale demonstrated moderate-to-low reliability ($\alpha = .44$). The overall fit of the proposed model is quite poor and modifications to the model did not improve the overall fit with the cronbach's alpha demonstrating moderate-to-low reliability. Thus the use of the current scale in the current Vietnamese sample is questionable. For this reason a decision was made to dichotomise the responses for the variables, as demonstrated by Hesketh et al. (2010) so that the response categories 'frequently' and 'sometimes' are grouped together. Rasch analysis was then undertaken to test the functioning of the individual items.

Rasch Analysis of Academic Stress

Rasch analysis was employed to investigate the functioning of the items and the overall fit of the data to the Rasch model. First of all the items were analysed using the Partial Credit Model which 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 thus a decision was made to collapse the response categories. The responses to the items were dichotomised, as demonstrated by Hesketh et al. (2010), so that the response categories 'frequently' and 'sometimes' are grouped together. The frequency of the dichotomised responses is presented in Appendix I.

In the first analysis the item 6 demonstrated a bad fit as indicated by a significant U value and outfit and infit statistics. The ICC's of the items were also inspected. When this item 6 was removed, item 7 was also found to have a bad fit and this item was also removed from the model. The remaining five items had a non-significant *R1c,* U, infit and outfit statistics (see Table 2) and demonstrate a good fit to the model.

Table 2: Fit Statistics

Items	Difficulty Difficulty Parameters	Std Err.	Ric	Df	Standardized p-values	Oufit	Infit	U
schexp01	3.11941	0.08520	2.792	3	0.4248	0.163	-0.087	0.740
schexp02	-1.84836	0.04744	3.244	3	0.3555	-1.241	-1.430	-1.637
schexp03	-1.84836	0.03998	6.363	3	0.0952	1.127	0.187	0.358
schexp04	0.28614	0.04088	1.625	3	0.6536	-0.399	-0.695	-0.856
schexp05	-1.30757	0.04309	5.850	3	0.1192	1.788	1.473	2.996
R1c test	R1c= 23.556 12 0.0234							
Andersen LR test	Z= 22.856 12 0.0290							
The mean of the difficulty parameters is fixed to 0								

Summary statistics for this scale are presented in Table 3.

Table 3: Summary Statistics for Academic Stress

	Mean	*SD*	*Minimum*	*Maximum*
Academic Stress	-.31	1.41	-3.34	4.21

Conclusions

The seven items of the academic stress scale (Hesketh et al., 2010) were subjected to principal components analysis using SPSS statistical software package, version 18. A one factor model was found to account for 24% of the variance. However, this factor produced a poor fitting model

with moderate-to-low reliability. For this reason, Rasch analysis was undertaken on the dichotomised responses of the scale which produced a new scale that can confidently assess students' academic stress in Vietnam.

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Appendices

Appendix A: Summary Statistics for Each Item

Variable	N	Min	Max	x	s.d
1. Do you enjoy school?	1622	0	2	.05	.24
2. Do you worry about exams/test?	1620	0	2	1.09	.71
3. Do you feel under pressure to perform well at school?	1616	0	2	.60	.69
4. Do you find it difficult to complete homework?	1603	0	2	.46	.66
5. Do you fear teacher's punishment?	1616	0	2	1.05	.79
6. Are you physically bullied at school?	1614	0	2	.45	.63
7. Are you hit by parents?	1622	0	2	.72	.55

Appendix B: Correlation Matrix

	schexp01	schexp02	schexp03	schexp04	schexp05	schexp06	schexp07
schexp01	1						
schexp02	.11**	1					
schexp03	.08**	.13**	1				
schexp04	.07**	.17**	.20**	1			
schexp05	.03	.25**	.13**	.09**	1		
schexp06	.04	.12**	.15**	.15**	.12**	1	
schexp07	.03	.12**	.09**	.09**	.17**	.13**	1

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

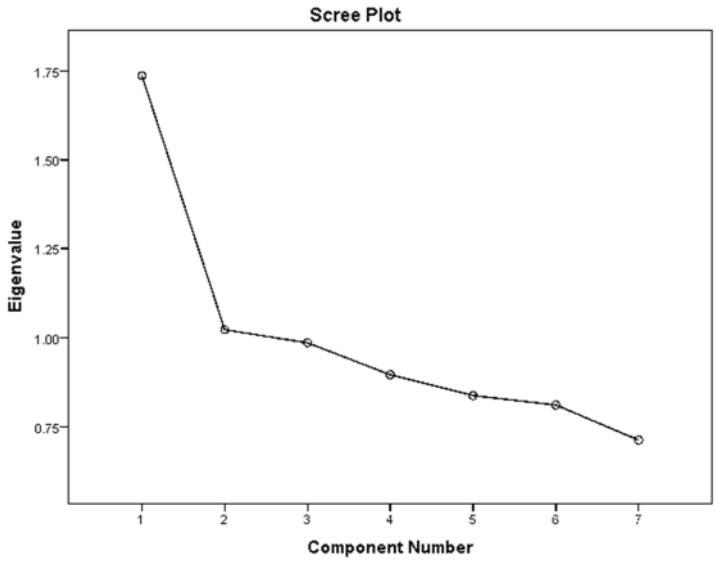
Appendix C: Kaiser-Meyer-Olkin Measure of Sampling Adequacy and Bartlett's Test of Sphericity

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.67
Bartlett's Test of Sphericity	Approx. Chi-Square	441.53
	df	21
	Sig.	.000

Appendix D: Initial Eigenvalues for Un-rotated Solution

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.738	24.822	24.822	1.738	24.822	24.822
2	1.022	14.594	39.416	1.022	14.594	39.416
3	.985	14.071	53.488			
4	.895	12.792	66.279			
5	.837	11.961	78.240			
6	.811	11.584	89.824			
7	.712	10.176	100.000			

Appendix E: Scree Plot



Appendix F – Parallel Analysis

Component Number	Actual Eigenvalues from PCA	MCPCA1	MCPCA1	MCPCA1	Average	Decision
1	1.74	1.09	1.09	1.10	1.09	Accept
2	1.02	1.05	`1.05	1.06	1.05	Reject
3	.99	1.03	1.02	1.03	1.03	Reject

Appendix G - Standardized Regression Weights

	Estimate
schexp07 <--- F1	.313
schexp06 <--- F1	.254
schexp05 <--- F1	.347
schexp04 <--- F1	.356
schexp03 <--- F1	.409
schexp02 <--- F1	.400
schexp01 <--- F1	.140

Appendix H - Revised Model Fit

	Fit Index	Acceptable Threshold	ASC
Absolute Fit Indices	χ^2	p > 0.05	$\chi^2(14) = 85.77$, p < 0.05
	χ^2/df	2:0 - 5:0	8.43
	RMSEA	< 0.07	.067
	RMSEA 90% C.I.	0.00 to 0.08	.054 to .082
	Fit Index	**Acceptable Threshold**	**ASC**
Incremental Fit Indices	TLI	> 0.95	.54
	CFI	> 0.90	.80

Appendix I: Frequency for Dichotomised Reponses

	False (0)	True (1)
Do you (not) enjoy school? R	3120	138
Do you worry about exams/tests?	691	2562
Do you feel under pressure to perform well at school?	1670	1574
Do you find it difficult to complete homework?	2016	1215
Do you fear teacher's punishment?	962	2285
Are you physically bullied at school?	2043	1200
Are you hit by parents?	1107	2150

Young Lives

An International Study of Childhood Poverty

YOUNG LIVES SCHOOL SURVEY

VALIDATION OF THE TEACHER EFFICACY SCALE IN THE VIETNAM SCHOOL SURVEY ROUND 1

LOUISE YORKE

July 2013

Overview

An abbreviated 20 item version of Gibson and Dembo's (1984) teacher efficacy scale was administered to teachers in Vietnam (n= 176) in autumn 2011. Teacher Efficacy is defined as the extent to which teachers believe that they can bring about positive student development (Gibson & Dembo, 1984). Understanding teachers' level of efficacy in Vietnam may be particularly relevant to help to identify ways in which teachers can be enabled to overcome the challenges that they face and to ensure that children receive a quality education. This note describes the selection, adaptation and administration of a scale measuring teacher efficacy in Vietnam. This is followed by a preliminary validation of the scale using exploratory factor analysis.

Rationale for the Inclusion of a Measure of Teacher Efficacy

Teacher Efficacy is defined as the extent to which teachers believe that they can bring about positive student development and has been conceptualised to consist of two dimensions (Gibson & Dembo, 1984). 'General' teaching efficacy refers to the teacher's general beliefs about their ability to have an influence on student's academic outcomes regardless of student's home environment, family background or parental influences. 'Personal' teaching efficacy', on the other hand, refers to whether teachers believe that they can personally enhance the learning of their students. In general research has demonstrated that teacher efficacy is strongly linked to teacher's motivation and behaviour. For example, teachers with higher levels of teaching efficacy have been found to persist longer and to be more effective in the classroom which subsequently impacts upon student's learning (Gibson & Dembo, 1984; Bandura, 1997). For this reason, understanding the development of teacher efficacy may provide important insights for helping to improve the quality of education that children receive.

The Teacher Efficacy Scale

Gibson & Dembo (1984) have developed one of the most widely used teacher efficacy scales, based on Bandura's conceptualization of self-efficacy, consisting of two sub-scales of general teaching efficacy and personal teaching efficacy. An example of an item which assesses general teaching efficacy is 'If a teacher has adequate skills and motivation, she/he can get through to the most difficult students'. An example of an item assessing personal teaching efficacy is 'I have enough training to deal with almost any learning problem'. Responses to these items were given on a six point scale ranging from 'strongly disagree' to 'strongly agree'. This scale demonstrated

good internal consistency (alpha = 0.79) (Gibson & Dembo, 1984). For the Vietnamese teacher survey 22 of the 30 items from Gibson and Dembo's (1984) original scale were retained. Items which were not thought to be relevant in a Vietnamese context were removed. An example of an item which was excluded is 'Some students need to be placed in slower groups so they are not subjected to unrealistic expectations'. Three items were reworded from 'teacher' to 'I', while four items were reworded from 'I' to 'teacher'. Three items were re-orientated from positive to negative phrasing. The scale was translated into Vietnamese and back-translated into English. In the current study answers were rated on a four-point Likert scale ranging from 'strongly disagree' to 'strongly agree'. Following an initial pilot study, two items were subsequently removed resulting in a final 20-item scale.

Validation: Exploratory Factor Analysis

Researchers have indicated that instrument validity and factor structure should be demonstrated for different populations and cultures when used in these contexts (Reise, Waller & Comrey, 2000). Therefore it is important to assess the instrument validity and factor structure of the teacher efficacy scale in the Vietnamese context. The 20 items of the 'Teacher Efficacy' scale were subjected to Principal Components Analysis (PCA) using SPSS statistical software package, version 18 using the data collected from the teacher efficacy scale was administered to 176 grade 5 teachers in Vietnam.

Prior to analysis, the variables were examined through various SPSS programs for accuracy of data entry, missing values and outliers. In addition all relevant items were re-coded (Item 3, 4, 5, 6, 7, 8, 11, 12, 15, 20). Accuracy of the data file was confirmed and for all items and summary statistics were generated for each item and these are presented in Appendix A. The percentage of missing data fell within the range of 0.6% to 1.1%. Due to this low percentage of missing data it was concluded that the data were missing at random. The correlation matrix was inspected to assess linearity as it is suggested that if an item does not correlate at least moderately (e.g. r = .20 or greater) with other items for the construct, then the item will likely perform poorly in a factor analysis (Floyd & Widman, 1995). The correlation matrix was inspected (see Appendix B) and it was decided that there was sufficient correlation among the variables to conduct factor 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 C). The KMO index was found to be .67 which was considered adequate and above the recommended minimum of .6 (Tabachnick & Fidell, 2007). The null hypothesis was rejected for

Bartlett's test of sphericity ($p < .05$) and therefore it is considered appropriate to conduct factor analysis (Tabachnick & Fidell, 2007).

To decide what factors to retain for the teacher efficacy scale three decision rules were used: Kaiser's criterion, inspection of the scree-plot (Cattell, 1966) and parallel analysis (Horn, 1965). First of all, principal components analysis revealed the presence of seven components with eigenvalues exceeding 1, which explained a total of 60% of the variance. Secondly, the scree-plot was inspected and this indicated a significant elbow after the three factors. Finally parallel analysis (Watkins, 2000) was conducted and the size of the eigenvalues obtained from principal components analysis were compared to those obtained from a randomly generated set of data of the same size with the same number of variables. Four components were found to have eigenvalues exceeding those generated by the random data. As demonstrated, disparities were found from the results for each of these methods. For this reason a decision was made to manually determine the best number of factors to retain by running multiple rotations.

The items were rotated using oblique rotation using the oblique method (Direct Oblimin) as it was decided that the factors generated were likely to be related (Costello & Osborne, 2005). The rotations were run for a two, three and four factor model and the item loadings were compared for each rotation. The two factor solution was found to provide the cleanest loading in that all items loadings were above 0.30 and no items were cross-loading (see Appendix F). This also produces the most parsimonious solution and best reflects the two-factor models proposed in previous studies (Gibson & Dembo, 1984; Guskey & Passaro, 1994). The two factor solution was thus retained. As a rule of thumb, only variables with loadings of 0.30 and above were interpreted (Tabachnick & Fidell, 2007) and as such items 15, 18 and 19 were deleted. The items were found to load well on the two components and accounted for a total of 29% of the variance (17% and 12% respectively). An example of an item comprising the first subscale is 'If I try really hard I can get through to the most difficult or unmotivated students' while an example of an item on the second subscale is 'The amount a student can learn is primarily related to family background'. The subscales each demonstrated good internal reliability. The Cronbach's alpha was 0.74 for factor one and 0.68 for factor two.

Gibson and Dembo (1984) suggest that the two factors from the teaching efficacy scale corresponded to general teaching efficacy and personal teaching efficacy. However, other researchers have suggested that the teacher efficacy scale consists of different factors than those proposed by Gibson and Dembo (1984). For example Guskey and Passaro (1994) identified a two factor structure consisting of internal factors and external factors. Internal teaching efficacy represents perceptions of personal influence, power, and impact in teaching and learning situations while external teaching efficacy is related to teacher's perception of the influence, power

and impact of elements that lie outside the classroom and thus beyond the direct control of individual teachers. They believe this distinction more accurately represents teachers' perceptions of the impact of different factors on teaching practices. The factors retained in the current study appear to be more representative of the internal factors and external factors suggested by Guskey and Passaro (1994). However, these results should be interpreted with caution as examination of the results indicates that the items 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.

Rasch Analysis

The teacher efficacy scale was subjected to Rasch analysis to determine the fit of the data to the model and to detect any problematic items. The first approach to the analysis was to undertake Rasch analysis using the Partial Credit Model (PCM) which is appropriate for use with likert scales. However, this approach was not suited to the data as the model failed to converge. Thus an alternative approach was taken whereby the responses to the individual items were dichotomised and Rasch analysis was then undertaken. The frequencies of the dichotomised responses are presented in Appendix H.

Rasch Analysis of Factor One

Following the dichotomisation of the responses to the individual items, Rasch analysis was undertaken using the CML estimation. An iterative process was undertaken and items 2 and 16 demonstrated a bad fit to the Rasch model as indicated by a significant U value and outfit and infit statistics and were removed from the model. The remaining six items had a non-significant *R*1*c,* U, infit and outfit statistics (see Table 1).

Table 1: Fit Statistics

	Difficulty				Standardized			
Items	**Difficulty Parameters**	**Std Err.**	**Ric**	**Df**	**p-values**	**Oufit**	**Infit**	**U**
tchat01	1.02129	0.19177	0.673	1	0.4120	-1.058	-0.988	-1.009
tchat09	-0.64637	0.21689	0.301	1	0.5831	1.011	1.782	1.133
tchat10	0.53611	0.19071	0.020	1	0.8879	0.106	0.535	0.502
tchat13	-0.17470	0.20141	0.000	1	0.9851	-0.679	-0.930	-0.535
tchat14	-0.03214	0.19809	0.099	1	0.7534	-1.060	-1.163	-1.115
tcaht17	-0.70420	0.21930	0.406	1	0.5241	0.620	-0.002	0.864
R1c test		R1c= 2.240	5 0.8150					
Andersen LR test		Z= 2.044	5 0.8431					
The mean of the difficulty parameters is fixed to 0								

Rasch Analysis of Factor Two

Rasch analysis was undertaken using the CML estimation on Factor Two of the Teacher Efficacy Scale. In the first analysis item 7 demonstrated a bad fit to the Rasch model demonstrated a bad fit as indicated by a significant U value and outfit and infit statistics. When this item was removed, item 5 was also found to have a bad fit and this item was also removed from the model. The remaining seven items had a non-significant *R1c,* U, infit and outfit statistics (see Table 2 and Figure 1).

Table 2: Fit Statistics

	Difficulty				Standardized			
Items	**Difficulty Parameters**	**Std Err.**	**Ric**	**Df**	**p-values**	**Oufit**	**Infit**	**U**
Tchat03	-0.14842	0.17849	0.174	2	0.9166	0.133	0.163	0.071
Tchat04	1.16597	0.23541	1.643	2	0.4398	-0.614	0.223	0.132
Tchat06	0.81805	0.21431	0.271	2	0.8734	0.226	-0.177	0.062
Tchat08	1.53126	0.26334	0.611	2	0.7367	-0.975	-0.238	-0.607
Tchat11	-3.34614	0.28745	0.431	2	0.8060	-0.843	-0.177	-0.928
Tchat12	0.12771	0.18559	1.351	2	0.5089	-0.608	-0.916	-0.872
Tchat20	-0.14842	0.17849	3.729	2	0.1550	1.062	1.550	1.352
R1c test		**R1c= 7.990 12 0.7859**						
Andersen LR test		**Z= 10.410 12 0.5800**						
The mean of the difficulty parameters is fixed to 0								

The summary statistics for the scores obtained through Rasch analysis for factor one (Internal Teaching Efficacy) and factor two (External Teaching Efficacy) are presented in Table 3.

Table 3: Summary Statistics for Internal and External Teaching Efficacy

Scale	***Mean***	***SD***	***Minimum***	***Maximum***
Internal Teaching Efficacy	1.14	1.57	-2.75	2.78
External Teaching Efficacy	-1.06	1.49	-4.44	3.36

Conclusions

To investigate the factor structure of scale Principal Components Analysis was carried out using SPSS statistical software package, version 18. It was found that a two factor solution was best at yielding a clear pattern of loading which accounted for a total 29% of the total variance between items (17% and 12% respectively) and demonstrated good internal consistency. Rasch analysis was then used to create interval level measurements from the scales. Overall, the evidence suggests that the adapted version of Gibson and Dembo's (1984) teacher efficacy scale can be

used to confidently assess internal and external teaching efficacy amongst teachers in the Vietnamese context.

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Appendices

Appendix A: Summary Statistics for Each Item

	N	Range	X	s.d.
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20				
1. If I try really hard I can get through to even the most difficult or unmotivated students.	176	1-3	2.57	.52
2. When a student does better than usually, many times it is because the teacher exerts a little extra effort.	176	1-3	2.60	.50
3. The hours in my class have little influence on students compared to the influence of their home environments. **REVERSE**	176	1-4	2.26	.65
4. The amount a student can learn is primarily related to family background. **REVERSE**	175	1-4	2.06	.57
5. If students aren't disciplined at home, they aren't likely to accept any discipline. **REVERSE**	175	1-4	2.82	.63
6. I have not been trained to deal with many of the learning problems my students have. **REVERSE**	175	1-4	2.10	.57
7. My teacher training programme and/or experience did not give me the necessary skills to be an effective teacher. **REVERSE**	176	1-4	1.84	.63
8. When a student is having difficulty with an assignment I have trouble adjusting it to his/her level. **REVERSE**	176	1-4	1.95	.53
9.When a student gets a better grade than he/she usually gets, it is usually because I found better ways of teaching that student	176	1-3	2.80	.42
10. When I really try I can get through to most difficult students.	175	1-3	2.65	.48
11. I am very limited in what I can achieve because a student's home environment is a large influence on his/her achievement. **REVERSE**	175	1-4	2.95	.51
12. Teachers are not a very powerful influence on student achievement when all factors are considered. **REVERSE**	175	1-4	2.18	.66
13. When the grades of students improve it is usually because their teachers found more effective teaching approaches.	175	1-3	2.74	.45
14. If a student masters a new concept quickly this might be because the teacher knew the necessary steps in teaching that concept.	174	1-3	2.72	.46
15. If parents would do more for their children teachers could do more. **REVERSE**	174	1-4	2.67	.72
16. If a student did not remember information I gave in a previous lesson, I would know how to increase his/her retention in the next lesson.	175	1-3	2.73	.46
17. If a student in my class becomes disruptive and noisy I feel assured that I know some techniques to redirect him/her quickly.	175	1-3	2.81	.41
18. The influences of a student's home experience can be overcome by good teaching.	174	1-3	2.59	.52
19. If a student couldn't do a class assignment, most teachers would be able to accurately assess whether the assignment was at the correct level of difficulty.	175	1-3	2.63	.55
20. Even a teacher with good teaching abilities may not reach many students. **REVERSE**	175	1-4	2.28	.65

Appendix B: Correlation Matrix

1	1.00																				
2	.07	1.00																			
3	-.05	-.09	1.00																		
4	.082	-.080	.409	1.00																	
5	.129	-.048	.201	.205	1.00																
6	.083	.115	.274	.213	.112	1.00															
7	.081	.062	.187	.105	-.062	.428	1.00														
8	.116	-.004	.166	.196	.110	.377	.452	1.00													
9	.360	.263	-.080	-.070	.053	-.084	.023	.035	1.00												
10	.530	.143	-.087	-.027	.034	.034	.017	.162	.271	1.00											
11	.034	.040	.208	.225	.263	.152	-.041	.139	-.098	-.004	1.00										
12	.106	.056	.151	.110	.194	.200	.194	.219	.174	.156	.263	1.00									
13	.288	.253	-.013	.034	-.041	.031	-.049	.046	.235	.246	-.051	.039	1.00								
14	.333	.304	-.012	-.010	-.001	-.004	.022	.087	.263	.306	-.013	.102	.560	1.00							
15	-.097	-.090	.039	.102	-.042	.023	-.095	-.070	.010	-.217	-.010	-.110	-.085	-.155	1.00						
16	.166	.205	-.062	-.074	-.004	.057	.123	-.003	.160	.198	-.053	.007	.220	.211	-.007	1.00					
17	.281	.122	.012	.048	.089	.081	.074	.116	.167	.237	-.042	.192	.473	.346	-.238	.363	1.00				
18	-.047	.041	-.008	.032	.023	-.039	.003	.015	.073	-.015	-.169	-.022	.051	.112	.024	.104	.180	1.00			
19	.063	-.021	.247	.013	.158	-.048	-.013	-.058	.090	.005	.021	.088	.122	.248	.025	.218	.238	.201	1.00		
20	.222	-.060	.187	.157	.208	.268	.057	.120	.128	.202	.142	.276	.228	.169	.121	.081	.377	.027	.164	1.00	

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

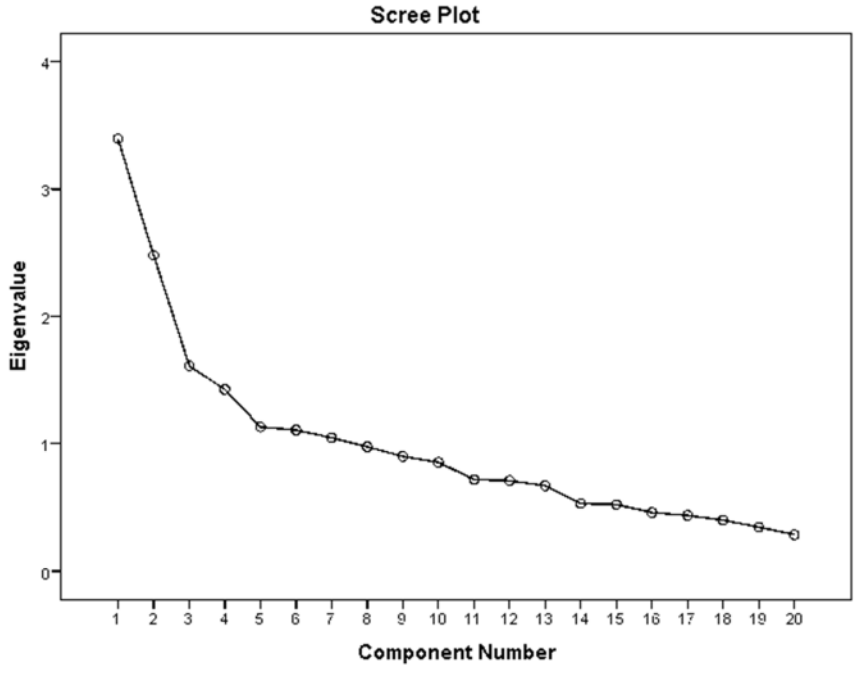
KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.667
Bartlett's Test of Sphericity	Approx. Chi-Square	698.735
	df	190
	Sig.	.000

Appendix D: Initial Eigenvalues for Unrotated Solution

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	**3.394**	**16.972**	**16.972**	3.394	16.972	16.972
2	**2.480**	**12.398**	**29.369**	2.480	12.398	29.369
3	**1.609**	**8.045**	**37.415**	1.609	8.045	37.415
4	**1.425**	**7.123**	**44.538**	1.425	7.123	44.538
5	**1.130**	**5.650**	**50.189**	1.130	5.650	50.189
6	**1.106**	**5.531**	**55.720**	1.106	5.531	55.720
7	**1.046**	**5.230**	**60.950**	1.046	5.230	60.950
8	.975	4.874	65.824			
9	.900	4.498	70.322			
10	.853	4.265	74.587			
11	.719	3.594	78.180			
12	.710	3.549	81.730			
13	.670	3.351	85.080			
14	.531	2.653	87.733			
15	.523	2.616	90.350			
16	.460	2.299	92.649			
17	.437	2.186	94.835			
18	.401	2.005	96.840			
19	.345	1.727	98.567			
20	.287	1.433	100.000			

Extraction Method: Principal Component Analysis.

Appendix E: Scree Plot



Appendix E: Scree Plot

Component Number	Actual Eigenvalues from PCA	MCPCA1	MCPCA1	MCPCA1	Decision
1	**3.394**	1.6488	1.6393	1.6463	Accept
2	**2.480**	1.5243	1.5309	1.5315	Accept
3	**1.609**	1.4338	1.4400	1.4345	Accept
4	**1.425**	1.3524	1.3566	1.3509	Accept
5	**1.130**	1.2840	1.2855	1.2974	Reject

Appendix F: Pattern and Structure Matrices for Two Factor Solution

	Pattern Matrix		**Structure Matrix**	
	Component		**Component**	
	1	**2**	**1**	**2**
tchat01	.595		.604	
tchat02	.412		.406	
tchat03		.625		.615
tchat04		.574		.566
tchat05		.429		.430
tchat06		.649		.647
tchat07		.476		.478
tchat08		.577		.582
tchat09	.541		.537	
tchat10	.595		.599	
tchat11		.475		.466
tchat12		.495		.507
tchat13	.690		.689	
tchat14	.714		.714	
tchat15				
tchat16	.489		.487	
tchat17	.660		.670	
tchat18				
tchat19				
tchat20	.314	.463	.345	.484
Extraction Method: Principal Component Analysis. Rotation Method: Oblimin with Kaiser Normalization. a. Rotation converged in 5 iterations.				

Appendix G: Factor Solution Generated from Young Lives Vietnamese Sample

Internal Teaching Efficacy		External Teaching Efficacy	
1	If I try really hard I can get through to even the most difficult or unmotivated students.	**3**	The hours in my class have little influence on students compared to the influence of their home environments. **REVERSE**
2	When a student does better than usually, many times it is because the teacher exerts a little extra effort.	**4**	The amount a student can learn is primarily related to family background. **REVERSE**
9	When a student gets a better grade than he/she usually gets, it is usually because I found better ways of teaching that student	**5**	If students aren't disciplined at home, they aren't likely to accept any discipline. **REVERSE**
10	When I really try I can get through to most difficult students.	**6**	I have not been trained to deal with many of the learning problems my students have. **REVERSE**
13	When the grades of students improve it is usually because their teachers found more effective teaching approaches.	**7**	My teacher training programme and/or experience did not give me the necessary skills to be an effective teacher. **REVERSE**
14	If a student masters a new concept quickly this might be because the teacher knew the necessary steps in teaching that concept.	**8**	When a student is having difficulty with an assignment I have trouble adjusting it to his/her level. **REVERSE**
16	If a student did not remember information I gave in a previous lesson, I would know how to increase his/her retention in the next lesson.	**11**	I am very limited in what I can achieve because a student's home environment is a large influence on his/her achievement. **REVERSE**
17	If a student in my class becomes disruptive and noisy I feel assured that I know some techniques to redirect him/her quickly	**12**	Teachers are not a very powerful influence on student achievement when all factors are considered. **REVERSE**
		20	Even a teacher with good teaching abilities may not reach many students. **REVERSE**

Appendix H: Frequency for Dichotomised Reponses

		False	True
1	If I try really hard I can get through to even the most difficult or unmotivated students.	70	97
2	When a student does better than usually, many times it is because the teacher exerts a little extra effort.	64	103
3	The hours in my class have little influence on students compared to the influence of their home environments. **(R)**	52	115
4	The amount a student can learn is primarily related to family background. **(R)**	22	145
5	If students aren't disciplined at home, they aren't likely to accept any discipline. **(R)**	119	48
6	I have not been trained to deal with many of the learning problems my students have. **(R)**	28	139
7	My teacher training programme and/or experience did not give me the necessary skills to be an effective teacher. **(R)**	12	155
8	When a student is having difficulty with an assignment I have trouble adjusting it to his/her level. **(R)**	17	150
9	When a student gets a better grade than he/she usually gets, it is usually because I found better ways of teaching that student	33	134
10	When I really try I can get through to most difficult students.	58	109
11	I am very limited in what I can achieve because a student's home environment is a large influence on his/her achievement. **(R)**	145	22
12	Teachers are not a very powerful influence on student achievement when all factors are considered. **(R)**	44	123
13	When the grades of students improve it is usually because their teachers found more effective teaching approaches.	42	125
14	If a student masters a new concept quickly this might be because the teacher knew the necessary steps in teaching that concept.	45	122
15	If parents would do more for their children teachers could do more. **(R)**	97	70
16	If a student did not remember information I gave in a previous lesson, I would know how to increase his/her retention in the next lesson.	43	124
17	If a student in my class becomes disruptive and noisy I feel assured that I know some techniques to redirect him/her quickly.	32	135
18	The influences of a student's home experience can be overcome by good teaching.	66	101
19	If a student couldn't do a class assignment, most teachers would be able to accurately assess whether the assignment was at the correct level of difficulty.	57	110
20	Even a teacher with good teaching abilities may not reach many students. **(R)**	52	115

Young Lives

An International Study of Childhood Poverty

VIETNAM

RETEST -
INSTRUCTIONS FOR FIELDWORKERS

April-May 2012

Fieldworkers should locate the Grade 5 classes and children involved in the original fieldwork, using the pre-printed class roster and in consultation with the head teacher and grade 5 teacher. **Only pupils involved in the original fieldwork are included in the retest.**

Class Roster

(i) Consult the class teacher to identify the pupils to be included, as pre-printed on the roster.
(ii) Complete the roster questions which are not pre-printed. Some will require consultation with the class teacher e.g. children's attendance and enrolment.

Identification of the correct pupils is vital. Ensure names and pupil ids are correctly matched and completed on all instruments.

If pupils from the original sample are not present on the day of retest fieldwork, do not substitute others. Only pupils originally involved should be part of the retest.

Instruments to be used:

In each class, 4 instruments are administered in the following order. This should take around 2.5 hours:

- Child mathematics test (45 minutes) followed by a **short break**
- Pupil rosters (peer questionnaire) (20 minutes)
- Pupil questionnaire (20 minutes) followed by a **short break**
- Child Vietnamese test (45 minutes)

Maths and Vietnamese tests

(1) Make every effort to ensure pupils answer on their own and do not cheat. This includes:

(i) Do not allow the class teacher to be in the room during test administration
(ii) Instruct pupils that they may not discuss the test or look at other pupil's answers.
(iii) Ensure pupils are not sat so close together that it is easy for them to copy.
(iv) Do not help pupils with test answers. You may only clarify instructions for completion.

(2) Encourage pupils to use the full time available for the test, to check their answers and to attempt all questions, avoiding leaving questions unanswered.

Pupil Rosters (peer questionnaire)

- This item may be unfamiliar to pupils. Please explain it carefully to pupils.
- The questionnaire is designed to help us understand who the pupils associate with outside of their usual school classes and who are their friends. Ensure pupils tick only one box for each friend.

  (i) The first question asks the pupils about how close their friendships are with other class members. They are asked to answer this on the basis only of how close they feel their friendship to be.

  (ii) The second question asks about things the pupils do together outside of school.
- You may clarify the questions with examples such as those below:

'A very close friends could be someone I share secrets with, or someone I will ask for help.'

Pupil Questionnaire

This is the same as part of the pupil questionnaire in the original school survey. Ensure that the identification information at the start of the questionnaire is completed correctly, and that children understand how to complete the questionnaire.