



# Enhancing School Quality in Vietnam through Participative and Collaborative Learning

Vietnam Escuela Nueva  
Impact Evaluation Study

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# Contents

Acknowledgments .....	ix
Abbreviations and Acronyms .....	xi
Executive Summary .....	xiii
<b>1. Why Vietnam Escuela Nueva (VNEN)? .....</b>	<b>3</b>
1.1 The Escuela Nueva Model .....	3
1.1.1 Origins in Colombia .....	3
1.1.2 Adaptation in Vietnam .....	3
1.2 VNEN Theory of Change .....	5
1.2.1 Participative and Collaborative Learning .....	6
1.2.2 Community Involvement .....	10
1.2.3 Movement and Learning .....	11
1.2.4 Play and Learning .....	12
1.2.5 Complex Adaptive Systems .....	13
1.3 Overview of the VNEN Impact Evaluation (IE) Study Design .....	14
1.3.1 Randomized Selection of Intervention and Control Groups .....	14
1.3.2 Survey Rounds .....	14
1.3.3 Implementation Heterogeneity .....	15
1.3.4 Use of Item Response Theory (Rasch Indices) .....	16
1.3.5 Qualitative Research .....	17
1.4 Preview of Findings .....	18
Endnotes .....	19
<b>2. School Leadership .....</b>	<b>21</b>
2.1 Strength of Implementation of the Program .....	21
2.1.1 School Autonomy .....	21
2.1.2 VNEN Implementation from Principal's Perspective .....	22
2.1.3 School Grants and Student Scholarships .....	24
2.1.4 Community Engagement .....	25
2.1.5 Readiness for Self-Paced Learning .....	25
2.2 Contextual Factors Influencing Implementation and Results .....	28
2.2.1 Principal's Values and Beliefs .....	28
2.2.2 Principal's Political Skills .....	29
2.2.3 Principal's Innovative Attitude .....	30
2.2.4 Principal's Active Engagement on the Job .....	30
2.2.5 School Size, Infrastructure and Facilities .....	31
2.3 Estimation of Program Impact .....	32
2.3.1 Traditional Mindset about Schooling .....	32
2.3.2 Principal's Self-Belief about Influence .....	34
Endnotes .....	38

<b>3. Teacher Beliefs, Attitudes, and Training</b> .....	<b>39</b>
3.1 Who Are the Teachers? A Profile .....	39
3.1.1 Demographics .....	39
3.1.2 Job Satisfaction and Salary .....	40
3.1.3 Training .....	42
3.1.4 Time Use .....	43
3.2 Teachers' Beliefs .....	44
3.2.1 Beliefs Regarding Educational Objectives .....	44
3.2.2 Beliefs Regarding Pedagogy .....	47
3.2.3 Innovativeness .....	51
3.3 Impact on Teachers .....	51
3.3.1 Self-Efficacy .....	51
3.3.2 Influence .....	53
Endnotes .....	56
<b>4. Pedagogy and Teaching Methods</b> .....	<b>57</b>
4.1 The Classroom .....	57
4.1.1 Classroom Space and Furniture .....	57
4.1.2 Artifacts .....	57
4.1.3 Learning Guides .....	60
4.2 Pedagogical Elements .....	60
4.2.1 Teaching Method .....	61
4.2.2 Group Work .....	61
4.2.3 Assessment .....	62
4.2.4 Student Government .....	64
4.2.5 Parental Engagement .....	65
4.3 VNEN Implementation Index .....	66
4.3.1 VNEN Implementation Index: Principal .....	67
4.3.2 VNEN Implementation Index: Parents .....	69
4.3.3 VNEN Implementation Index: Students .....	69
4.3.4 VNEN Implementation Index: Teachers .....	74
Endnote .....	80
<b>5. Parents, Home, and Community Situations</b> .....	<b>81</b>
5.1 Parent Demographics .....	81
5.1.1 Family and Living Conditions .....	81
5.1.2 Education and Labor Market .....	81
5.2 Parent Beliefs, Values, and Personality .....	83
5.2.1 Parental Beliefs Regarding Education .....	84
5.2.2 Values Children Learn at Home .....	86
5.2.3 Parental Personality .....	87
5.3 Knowledge, Practices, and Preferences Regarding VNEN .....	88
5.3.1 Parents Understanding of VNEN Activities at School .....	88
5.3.2 Parents Participation in VNEN Activities at School .....	90
5.3.3 Home Academic Environment for Student .....	91
5.3.4 Parent Opinion and Preference Regarding VNEN .....	91

<b>6. Cognitive and Non-Cognitive Student Outcomes</b> .....	<b>95</b>
6.1 Visual Representation of Test Score Trends .....	95
6.1.1 Overall Trends for Cognitive Scores .....	95
6.1.2 Trends in Cognitive Scores by Priority I Provinces .....	97
6.2 Impact Evaluation on Test Scores .....	99
6.3 Non-Cognitive Outcomes .....	103
6.3.1 Estimation of Non-Cognitive Outcome .....	103
6.3.2 Impact Evaluation of Non-Cognitive Outcomes .....	106
Endnotes .....	109
<b>7. Findings from the Qualitative Component</b> .....	<b>111</b>
7.1 Overview of Qualitative Component .....	111
7.2 Teaching and Learning Practices in the Classroom .....	112
7.2.1 Lesson Structure .....	112
7.2.2 Instructional Practices .....	113
7.2.3 Type and Extent of Classroom Interaction .....	113
7.3 VNEN Practices and 21st Century Skills in the Classroom .....	113
7.4 The Deep-Dive: Exploration on What Takes Place for 21st Century Skills and Why It Takes Place .....	115
7.4.1 Leadership .....	115
7.4.2 Teamwork and Cooperative Learning .....	117
7.4.3 Communication .....	118
7.4.4 Self-Managed Learning .....	119
7.5 Extent and Nature of Use of the Learning Guide .....	120
7.6 Stakeholders' Views on Benefits and Challenges of VNEN Implementation .....	122
7.6.1 Development of Socio-Emotional Skills .....	122
7.6.2 Increased Parental Involvement in School and Student Learning .....	123
7.6.3 Improved Relationships among Stakeholders .....	123
7.7 Challenges of VNEN .....	124
7.7.1 Challenges Attributed to the Mindset of Teachers .....	124
7.7.2 Challenges Resulting from Ethnic Minority Students' Proficiency in the Vietnamese Language .....	124
7.7.3 Challenges Associated with Parents .....	125
7.8 Further Exploration of Patterns in Classroom Practices and Interactions .....	125
<b>8. Policy Conclusions and Recommendations</b> .....	<b>129</b>
8.1 Positive Impact of VNEN .....	129
8.2 Theory of Change of VNEN .....	129
8.3 Leadership of VNEN .....	130
8.4 Training of Teachers .....	131
8.5 Deepening Participation .....	132
8.6 Communications Program .....	132
8.7 Monitoring Socio-Emotional Skills .....	133
8.8 Directions for Further Research .....	134

<b>Bibliography</b> .....	<b>135</b>
<b>Index</b> .....	<b>141</b>
<b>Picture Credits</b> .....	<b>142</b>

### List of Figures

Figure ES.1	Vietnam Escuela Nueva Impact Evaluation: 2013–2017 .....	xx
Figure 1.1	Replicated from the OECD Publication—Causality and Correlation of Cognitive and Non-Cognitive Skills in Korea .....	7
Figure 1.2	Theoretical Model of Peer Assisted Learning from Topping, 2005.....	9
Figure 2.1	Decentralization of Decision Making, 2013 .....	22
Figure 2.2	School Autonomy Index, 2013 .....	22
Figure 2.3	Principal Familiarity with VNEN Model .....	23
Figure 2.4	Principal View of VNEN Implementation .....	23
Figure 2.5	Principal Report of Parent Participation, 2015 .....	26
Figure 2.6	Community Engagement Measure .....	27
Figure 2.7	Readiness for VNEN (per grade level) .....	27
Figure 2.8	Principal Values and Beliefs (average 2013–2015).....	28
Figure 2.9	Principal Political Skills.....	29
Figure 2.10	Innovation and Correlations .....	30
Figure 2.11	Principal as Busy as a Bee—Every Semester, 2015 .....	31
Figure 2.12	School Wealth Index, 2013.....	32
Figure 2.13	Principal Attitude about Traditional Model.....	34
Figure 2.14	Principal Self-Perception of Influence.....	35
Figure 3.1	VNEN Teachers with Higher Satisfaction .....	41
Figure 3.2	Attitude toward Traditional Model and Familiarity with VNEN .....	45
Figure 3.3	Educational Objectives and Implementation Compared.....	47
Figure 3.4	Beliefs Regarding Importance of Pedagogical Activities .....	48
Figure 3.5	Hypothetical Block-Diagonal Pattern Expected for Heat Map .....	49
Figure 3.6	Challenges Regarding Pedagogical Activities.....	50
Figure 3.7	Innovativeness of Teachers.....	51
Figure 3.8	Self-Efficacy of Teachers.....	52
Figure 3.9	Teachers Self-Perception of Influence.....	54
Figure 4.1	Classroom Space .....	58
Figure 4.2	Artifacts in VNEN Classroom .....	59
Figure 4.3	Measure of Existence of Artifacts.....	59
Figure 4.4	Gender and Ethnic Minority Equality in the VNEN Classroom, 2014 .....	65
Figure 4.5	VNEN Implementation Index: Principal .....	68
Figure 4.6	VNEN Implementation Index: Parents (Part I) .....	70
Figure 4.7	VNEN Implementation Index: Parents (Part II) .....	71
Figure 4.8	VNEN Implementation Index: Students (Part I) .....	72
Figure 4.9	VNEN Implementation Index: Students (Part II) .....	73
Figure 4.10	VNEN Implementation Index: Teachers .....	75
Figure 4.11	VNEN Implementation Index: Formative Assessment Intervention .....	76
Figure 4.12	VNEN Implementation Combined Index: By Year and Overall .....	77
Figure 4.13	VNEN Implementation Index .....	78
Figure 5.1	Family Demographic Situation .....	82
Figure 5.2	Parents Education and Occupation Situation .....	83
Figure 5.3	Parents Opinion about Maintaining Traditional Model, 2016.....	84
Figure 5.4	Parent Beliefs Regarding Education and Values .....	86
Figure 5.5	Qualities Learned at Home .....	87
Figure 5.6	Parental Big Five Personality Traits.....	88

Figure 5.7	Parent Participation and Opinion about Usefulness	90
Figure 5.8	Opinion about VNEN among Parents Who Know about VNEN	91
Figure 5.9	Reason for Positive Opinion of Parents about VNEN	92
Figure 6.1	Vietnamese Test Scores for 15 Randomly Selected Schools	95
Figure 6.2	Same Schools with VNEN Information Added	96
Figure 6.3	District FSQL (Fundamental School Quality Level) Audit	97
Figure 6.4	National Trends in Cognitive Scores	98
Figure 6.5	Trends in Provinces (at least 20 schools in sample)	99
Figure 6.6	Matched Scores	100
Figure 6.7	Construction of Non-Cognitive Outcome Score	104
Figure 6.8	Non-Cognitive Score Overall	105
Figure 7.1	Map of Analytical Components	112
Figure 7.2	Time Spent per Lesson and Level of Advancement for VNEN 21st Century Skills	114
Figure 7.3	Percent of Time Not Following the Learning Guide and Its Effectiveness and Type	120
Figure 7.4	Visual Example of Multiple Layers Coded over the Course of the Lesson	126

## List of Tables

Table 1.1	Students Report of Group Activities	16
Table 2.1	Sufficiency of VNEN School Grants	24
Table 2.2	Scholarships Compared to Enrollment, 2015	25
Table 2.3	Distribution by Gender and Ethnic Minority, 2013	31
Table 2.4	School Facilities Compared	33
Table 2.5	Impact of VNEN on Principal Self-Perception of Influence	35
Table 3.1	Profile of Surveyed Teachers	39
Table 3.2	Satisfaction of Teachers, 2015	40
Table 3.3	Excellent Teacher Awards	41
Table 3.4	Teacher Training Received, 2012 to 2015	42
Table 3.5	Teacher Interaction and Cluster Training	43
Table 3.6	Teacher Time Use, 2012 to 2015	44
Table 3.7	Elements of Teacher Self-Efficacy	52
Table 3.8	Teachers as Primary Influencers in Decision Making, 2013	53
Table 4.1	Opinions and Use of Learning Guides	60
Table 4.2	VNEN Methods among Top 3 Teaching Methods	61
Table 4.3	Opinions and Use of Group Work	62
Table 4.4	Teacher Use of Assessment Methods in Mathematics Lessons	63
Table 4.5	Teacher Engagements with Parents (mean number of occasions per year)	66
Table 4.6	Principal Variables	68
Table 4.7	Parents (Part I) Variables	69
Table 4.8	Parents (Part II) Variables	71
Table 4.9	Student (Part I) Variables	72
Table 4.10	Student (Part II) Variables	73
Table 4.11	Teachers Variables	74
Table 5.1	Parent Reports of Classroom Activities	89
Table 5.2	Home Study Environment and Activities	91
Table 6.1	Variables Used for Propensity Score Matching	100
Table 6.2	Impact on Learning Outcomes	102
Table 6.3	Estimating Impact on Non-Cognitive Outcomes	106
Table 6.4	Additional Controls for Test Score Regressions	107





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# Abbreviations and Acronyms

AI	artificial intelligence
ATT	average treatment effect on the treated (model)
BFI	Big Five Inventory
CAS	complex adaptive systems
CHC	Confucian Heritage Culture
EFA	Education for All
EFA-FTI	Education for All-Fast Track Initiative
EN	Escuela Nueva
EPDF	Education Program Development Fund
GPE	Global Partnership for Education
IE	Impact Evaluation
IPA	Importance-performance analysis
IRT	Item Response Theory
LG	Learning Guide
LTP	Long-term Potentiation
MDRI	MeKong Development Research Institute
MIT	Massachusetts Institute of Technology
MOET	Ministry of Education and Training
OECD	Organisation for Economic Co-operation and Development
PEDC	Primary Education for Disadvantaged Children
PISA	Programme for International Student Assessment
PPP	Purchasing power parity
PSI	Political skills inventory
PSM	Propensity score matching
RISE	Research on Improving Systems of Education
SL	Self-managed learning
T&CL	Teamwork and cooperative learning
t.e.t	time-engaged-with-task
t.o.t	time-on-task
UNESCO	United Nations Education, Scientific, and Cultural Organization
VND	Vietnam dong
VNEN	Vietnam Escuela Nueva
WB	World Bank
WMLE	weighted mean likelihood estimate
WVS	World Values Survey
ZPD	zone of proximate development





# Executive Summary

## Findings Highlights

The Vietnam Escuela Nueva (VNEN) program has had a positive impact on cognitive and non-cognitive achievement of children in Vietnam, which should be recognized and made known to all stakeholders. This study has reported the findings of positive impact using a rigorous impact evaluation procedure that followed a cohort of students from Grade 3 through to Grade 5. Almost any educational program tracked over a period of time will show growth in the cognitive and non-cognitive abilities of children. This study compares the growth of the children in the VNEN program with a counterfactual group to see the difference in growth. A rough calculation of the cost of the GPE-VNEN program is also instructive. The program cost approximately US\$85 million, and benefited about a half million children over four years, not counting the children to be benefited in the future. This works out roughly to about US\$40 per student per year. From a recent public expenditure review, we know that the average per student expenditure for primary education in Vietnam is about US\$1,000 per year in purchasing power parity (PPP) terms (approximately Vietnam dong (VND) 8 million), which indicates a reasonable benefit-cost ratio.

Effective participative and collaborative learning is a complex undertaking with heavy cultural influences. A sustained awareness building and motivational campaign is required that targets both communities of the program schools and wider audiences. This campaign needs to clarify the origin and purpose of the reform, explain the expected benefits, and lay out the required behavior from all stakeholders for successful implementation. Further high quality research at all levels needs to be encouraged to learn about the approaches that are best suited to Vietnamese conditions. Vietnam's education system is widely regarded internationally as a 'success story'. Continued engagement with the international education research community will bring mutual benefits for Vietnam as well as other countries who wish to learn from Vietnam.

## Introduction

**Together with structural transformations in the economy, the single biggest determinant of future living standards in Vietnam will be an education system that enables Vietnamese citizens to be competitive in the globalized economy.** To this end, learners must not only master traditional knowledge and facts, but also develop competencies for independent and innovative thinking which belong to the set of non-cognitive or socio-emotional skills. Research has also shown that non-cognitive and cognitive skills are causally linked and related—children who develop

strong socio-emotional skills are also more likely to persist with effort in the face of hardship and achieve high test scores. Vietnam's Fundamental and Comprehensive Education Reform adopted by the government in 2013 provides the policy basis for a major transformation of the education system so that it can provide the elements necessary for learners to obtain these 21st century skills and competencies. Other innovations include a competency based curriculum, rigorous learning assessment, school-based teacher support, and universal full day schooling at the general education level.

**As part of its overall education reform strategy, Vietnam introduced a “whole school” reform to teaching and learning as part of the Vietnam Escuela Nueva (VNEN) program.** The VNEN incorporates and integrates several innovative and globally recognized practices including: (a) participative and collaborative learning; (b) self-paced learning guides; (c) student government; (d) formative assessment combined with summative assessment; (e) application or real-life oriented learning, with community integration; and (f) teacher professional networks. The combination of these elements is intended to spur a transformative and powerful learning experience. This approach to learning is expected to lead to the new skills and competencies expected by the reform effort. The GPE-VNEN project and the larger VNEN program sought the implementation of this “whole school” approach in 1,447 schools from 2012–2016.

**The motivation for establishment of the program comes from decisions at the highest level in Vietnam to undertake a program of Fundamental and Comprehensive Reform of the education sector.** Resolution 29 of November 4, 2013, of the 8th plenum of the 11th Party Congress and the related Resolution 44 of June 9, 2014, from the Prime Minister’s office, provide the policy setting for the Fundamental and Comprehensive Reform that motivated the establishment of the VNEN program. Resolution 29 notes the achievements of the education system and points out the challenge of developing well-rounded citizens for the modern world. Educational literature uses the term ‘competency’ to mean not only the acquisition of a skill, but the real-life application of the skill, typically in a social context. Resolution 29 exhorts Vietnamese educators to develop creativity in children and the ability for self-learning. General education should provide children with ethical as well as practical learning to apply knowledge. Teachers are encouraged to avoid the imposition of knowledge, passive learning, and rigid memorization. Resolution 44 describes the commitment of the government to

focus on developing learner competencies and character. The ideals and goals enshrined in these directive policy documents have to be translated to daily classroom activities.

**Vietnam Escuela Nueva is a Vietnamese program that melds Vietnamese capabilities with rich and varied international knowledge and experience of educational reform under the Escuela Nueva or New School model.** Escuela Nueva or New School is an award winning internationally recognized program with elements that have origins in a number of programs around the world such as Waldorf and Montessori schools. The ideas underlying the model have origins in most important pedagogical-cultural movements in Europe and the Americas in the early decades of the twentieth century. VNEN includes the application of a set of elements developed for the Vietnamese context that has an intellectual inspiration from the Colombian program. Escuela Nueva provides some *philosophical* bases—for instance the idea that human beings learn best as part of a community; and Escuela Nueva provides the *practical* experience of decades with self-learning taught using learning guides. In Vietnam the philosophy has to be adapted to meld with the thinking of Vietnamese philosophers such as Nguyen Trai (1380–1442) and Chu Van An (1292–1370), who stressed the importance of living a virtuous life. On a practical plane, learning guides for Vietnamese children needed to be developed for Vietnam by Vietnamese textbook experts.

**The Vietnam Escuela Nueva Impact Evaluation aims to produce evidence-based input for policy decision making by using state-of-the-art research methodologies to examine the results of this pilot.** The basic research questions that motivated the study were: (a) how useful was the new approach for students, and (b) how well were teachers able to incorporate the new pedagogy into their practice. The impact evaluation measured the extent to which students acquired cognitive and non-cognitive skills by comparing

results from a randomly chosen set of VNEN and traditional schools from a nationally representative sample. Considering that the pedagogical changes introduced by VNEN constitute a paradigmatic shift for students, parents, teachers, and education managers—by no means a simple task—the study also aimed to better understand the challenges to implement this approach successfully.

### **The study introduces important methodological innovations that set an important precedent for future education research in Vietnam.**

The study used impact evaluation methods to compare the results and outcomes in VNEN and traditional schools. Because the VNEN project had not selected participating schools through randomization, the study used a propensity score matching exercise to determine a matched panel of 650 control and treatment schools. Questionnaires were administered to principals, teachers, parents, and students. Standardized tests were administered to a sample of randomly selected students from within each selected school in Grade 3 in 2013. The cohort of students were tested again in Grade 4 in 2014 and Grade 5 in 2015. This method allowed the researchers to compare growth across two years. Finally, using digital video to film teaching and learning practices from a sample of 15 schools, educational researchers gained important insights of classroom activity in both VNEN and traditional schools. These methods hold great promise for understanding the effects of the Fundamental and Comprehensive Reform that other researchers plan to extend in the future.

## **Key Findings**

**Principals, the frontline leaders of the reform, have a strong belief about the need to reform the traditional model, and this belief is positively related with their actual program experience.** The literature on reform and change management points out that in order for change to be possible, the stakeholders have to be

cognizant about the problems with the status quo. This is also a common sense view—you will only make an effort to change if you think there is need for change. In this study we asked principals about their opinion regarding the statement that “the traditional model is working fine, there is no need for change.” About 75% of VNEN principals disagreed with the statement throughout the three years of the survey. The interesting finding is that in 2013, 73% of control group principals were of the same opinion, but this group has declined to 63% in the next two years.

**Principal’s self-belief about their influence was also positively impacted by participation in the program, indicating a pathway for success in reform.** When dealing with a paradigmatic change in the educational model, even if you believe in the need for reform and have a favorable opinion about the new school model, as a school principal you may doubt your ability as a school leader to bring about positive change. We tracked the self-perception of the principals about their influence regarding a set of decisions that affect education delivery at the school. These decisions included issues such as ‘adapting curriculum to local conditions’ and ‘evaluating teachers’ performance’. When we plotted the principal influence index for 2015 as compared to the principal influence index for 2014, we found an interesting pattern. The value of the index grew over time, and it grew twice as much for VNEN school principals as compared to traditional school principals. VNEN requires principals to exercise some measure of autonomy and have a leadership role in integrating the school activities with the local community. The finding shows again the importance of practical experience of principals in implementing the model.

**Turning from belief to understanding, teachers appear to have understood the model conceptually quite well, but may be facing challenges in practical implementation.** We consider four statements about teacher activities to characterize the traditional model: give effective lectures,

maintain discipline and order, strive that students do not make mistakes, and repeat explanations until the student understands. Similarly four statements characterize the VNEN model: stress student enquiry, students helping other students, students engaged in self-learning, and organizing fun activities for students. We asked teachers to rank the eight activities according to importance—the four activities that form the traditional model received low ranks—for example, lowest rank, by 42% of the teachers was for giving effective lectures, while 57% gave first rank to student self-learning. In contrast to the ranking on importance, teacher responses regarding how challenging they found it to implement the activity indicated that encouraging student enquiry is a highly ranked challenge—27% of teachers mentioned it as first rank. Students not making mistakes was mentioned by 25% of teachers as a first ranked challenge. Hopefully, teachers are not trying too hard in that area, because mistakes are very useful when students learn from them.

**The video analysis shows how VNEN students are exposed to multiple pathways of learning.**

They have a more prominent pedagogical use of exploration and discussion as well as opportunities to practice and exercise problem solving through both individual and group work. While they tend to spend a similar amount of time on individual work as non-VNEN students, a key difference appears to be that VNEN classrooms spend a lot of time in group activity rather than whole class work. To the extent that group work allows for greater cognitive engagement as compared to whole class work, the VNEN classroom may reflect greater efficiency in teaching. Despite some variation across schools and within classrooms, VNEN schools provide much more space for students to develop and practice 21st century skills, such as leadership, teamwork and cooperative learning, communication, and self-managed learning. Some of the interactions involving 21st century skills are still at a basic level, but the majority tend to be at intermediate and advanced levels. With training support from MOET, VNEN teachers are

using the learning guide with a certain level of flexibility as they see fit by making modifications to and/or deviations from activities, yet still meeting quality standards and teaching all required content. Some of the challenges faced by VNEN include the persistence of a traditional mindset among some teachers, the limited Vietnamese language proficiency of ethnic minority students, and the inability of some parents to provide academic support for their children.

**Program classrooms counted on the presence of physical artifacts from real life to bring education closer to real life, but the use of this element may have been below the potential.**

The data indicate that there was widespread adoption of the practice of bringing in some real-life artifacts such as models of farming implements or local handicrafts in the classroom to help children relate education to real life. However, it appears that full utilization was not made of this element of VNEN in all schools. While there is a great deal of energy and excitement when materials are first brought into the classroom, after a while they tend to lose their novelty value as well as their didactic utility. Not all teachers have utilized a rotation policy regarding artifacts, and there is not always a new set of artifacts to help students engage in conversation or study related to exploration around the artifacts. For instance, the teacher could direct students to be observant about the kind of hoes used on the farm and to compare them with the prototype they have in the classroom. In addition to having different objects, different activities can be organized by the teacher that relate to the object she has in the classroom, like the community map.

**Student government is another program innovation that likely is instrumental in providing students with socio-emotional skills as well as enriching values for 21st century skills.** One idea under VNEN is that socio-emotional skills including collaboration and responsibility as well as character strength building can best be done through practical experience. Every VNEN

class has a student government and teachers are encouraged to rotate roles so that many students can get a chance to serve. By organizing committees for different tasks, students develop organizational skills, which is another way to make education relevant to real life. It appears that some of the instances of student government were implemented quite well, while others utilized this method in a limited way. In order to be effective, there needs to be clear definition of the roles and responsibilities of all members, and feedback from the teacher and the student regarding performance and improvement. Even though only a few teachers may have implemented the full extent of student government, it is likely that this VNEN element has been effective in helping children acquire socio-emotional skills.

**Close parent participation in school and classroom activities is a program activity that appears to have been only sporadically adopted though parents may be quite in favor of it.** One of the aspects of VNEN which may have proved difficult to implement is the close involvement of parents in school activities. Given the semi-urban and rural location of most VNEN schools, the overwhelming majority of parents are farmers and few have education beyond secondary school. However, the data show that parents were quite well informed about the details of the VNEN model and what goes on in VNEN schools. Parents who knew about VNEN were in support of the program. When we asked parents about the usefulness of parent participation in classroom activities, we found both groups of parents, VNEN parents and the control group parents, expressed a favorable opinion. However, actual participation of parents was sporadic—participation for VNEN parents was quite similar as participation from control group parents.

**The data indicate that the program has had a positive impact on the socio-emotional skills of children enrolled in program supported schools.** However, there is not yet an agreed and established method among educational

researchers regarding the measurement of socio-emotional skills. Indeed, the opportunity to develop a program in Vietnam in view of the potential related to implementation of VNEN is one of the recommendations of this study. We have utilized a method that appears to be a reasonably sound way for the purpose at hand, based on parent feedback regarding the behavioral development of their children over the three-year development of the VNEN program. The results show that students in the VNEN program did better than the students in traditional schools. VNEN students did particularly better at the lower end of the distribution. This is an important finding because these students tend to come from disadvantaged groups and are often a special focus of educational policy makers.

**Test scores for Vietnamese and mathematics show that program students perform as well or better compared to traditional school students.** The scores of students from VNEN as well as control group schools moved up as they moved through the grades. However, the students from VNEN schools already showed a higher mean score at the baseline of the study, which was 18 months after the initiation of the project. This difference is retained throughout the years, though it narrows down over the last two years. Regression analysis shows a statistically significant effect of the VNEN program, with some specifications showing effect sizes of about one-fifth of a standard deviation, about 15 points in Vietnamese and 18 points in mathematics. These findings involved a number of technical issues related to measurement and statistical inference and will be presented for discussion and review in the academic literature.

**Variation in the level of performance of students within the program group of schools is related to variation in the intensity of the program.** The study documents a considerable level of variation or heterogeneity in the implementation of VNEN practices. Merely seating children in groups and providing them with learning guides



does not ensure that adequate participative and collaborative learning will take place. While some principals and teachers were able to take the opportunities provided to them by the model very far, there were others who appear to have lacked the knowledge or the inspiration. It would not be advisable to attempt to mandate or direct all schools to rigidly adhere to specific methods. Rather, there is scope for feedback loops to be generated, where those who are implementing the program well can influence others.

## Policy Implications

**The VNEN program has had a positive impact on cognitive and non-cognitive achievement of children in Vietnam, which should be recognized and made known to all stakeholders.**

This study has reported the findings of positive impact using a rigorous impact evaluation procedure that followed a cohort of students from Grade 3 through to Grade 5. Almost any educational program tracked over a period of time will show growth in the cognitive and non-cognitive abilities of children. This study compares the growth of the children in the VNEN program with a counterfactual group to see the difference in growth. A rough calculation of the cost of the GPE-VNEN program is also instructive. The program cost approximately US\$85 million, and benefited about a half million children over four years, not counting the children to be benefited in the future. This works out roughly to about US\$40 per student per year. The average per student expenditure for primary education in Vietnam is about US\$1,000 per year in PPP terms (approximately VND 8 million), which indicates a reasonable benefit-cost ratio.

**All stakeholders should be encouraged to develop an accurate idea of the educational thinking that underlines the reform.** The ideas underlying the Escuela Nueva or New School model have origins in most important pedagogical-cultural movements in Europe and the Americas in the early decades of the twentieth

century. The ‘new school’ was conceived as an alternative relevant to the modern world, where education follows a natural process more attuned to the psychological development of children and cognizant of the social nature of human beings. “Modern schools” or “progressive schools” were also terms associated with the movement that included some of the foremost educational thinkers of the time—Jean-Olvide Decroly (1871–1932) from Belgium; John Dewey (1859–1952) in the United States; Adolphe Ferrière (1879–1960) and Jean Piaget (1896–1980) from Switzerland; María Montessori (1870–1952) from Italy; and the brilliant but short lived Lev Vygotsky (1896–1934) from Russia. Vygotsky’s idea of the ‘zone of proximal development’ created during social interactions is key to the VNEN practice of self-paced learning. Participative and collaborative learning is expected to work because in a fundamental way, all human learning, some would say all learning, can be understood as consisting of a combined process of exploration and engagement (Pentland, 2014).

**The championship of leaders at every level, from the national, through the provincial, district and school levels, appears to be a necessary condition for success.**

We have seen that in certain provinces, there appears to be a higher incidence of complete implementation of VNEN. We found that schools with an advanced level of implementation tended to have principals with a deep understanding of the VNEN model, who encouraged teachers in the school to follow it. Activities such as periodic meetings among teachers in the school to discuss and practice VNEN approaches seem to contribute to its adoption. Ensuring a high level of implementation by influencing leaders at all levels is a challenging problem. The best chance for success would come from feedback loops generated through sharing of successful implementation. Events such as video competitions, which had been organized at some point during implementation, can be conducted with dedicated attention and would be instrumental in reducing the width of the distribution

of the implementation index towards the higher end through a process of imitation and experience of rewards.

**The complexity and difficulty of a paradigmatic change in the teaching approach calls for a constant process of experimentation and rigorous accompanying research to learn the best approaches.** It is hoped that this study has provided insights to the education research community and policy makers of the usefulness of two features of research—the importance of having comparable intervention and control groups for valid inference to be possible, and the use of analysis of digital video through the development and application of coding trees as has been done in this study. There are a number of issues with regard to participative and collaborative learning which need to be investigated closely—for instance, how often should group formation be changed; how much independence should the teacher utilize in having students apply the learning guide; how can parents be assured that students are learning if the teacher does not provide any marks in their notebooks and only provides descriptive and advisory commentary; and many other questions like these.

**The new method of training where committed, high performing teachers were co-opted early to become trainers themselves should be made part of regular practice.** This practice should be considered for retention going ahead, and teachers should be encouraged to take on an investigative mindset with regard to their own practices. In this way, the training was not something developed by trainers removed from practical realities and provided to teachers in a mimic of the traditional frontal model of teaching. Rather, training was conducted in the form of a VNEN classroom, complete with groups and group leaders and warm-up games. In the case of VNEN teachers, the practical acts of implementing what they learned in the training reinforced and strengthened their beliefs.

**The close involvement of parents represents a cultural shift for many stakeholders, and greater effort from national and provincial leaders is needed to make this happen at scale.**

Some principals and teachers may believe that the predominantly large community of farmers that represents the parent body may not be amenable to close involvement in the school. Others may have tried and failed to engage the parents and may have persuaded themselves of the futility of trying again. School leaders who were more persistent likely met with success. As is the case with getting teachers to implement all aspects of the model, the generation of multiple feedback loops is probably the best way to bring about wider adoption.

**From a policy perspective, it is useful to understand how the feedback loops may be engendered—a case in point is the use of artifacts in the classroom.** Typically, these have been one-off activities done with varying levels of enthusiasm. In our study we tried to capture this diversity by asking not only about the presence of artifacts but also about their use. We found that the use of artifacts was made very seldom, and the reason may be that teachers may not have been encouraged or provided ideas regarding how to use artifacts. For instance, once a community map is made, it is a static document that may not be referred to again. But fun activities using the map could be organized that would serve a didactic purpose for both cognitive and non-cognitive skills.

**A video competition to share practices could provide a mechanism to generate awareness about the true nature of the program, given the success of the small-scale video competition.** A key phenomenon that was observed throughout the program was the clustering of good practices because of the exchange and replication of ideas. Video forums are a form of multipartite communication. Other forms of feedback from implementers on the ground to the policy makers is quite important. Such feedback

happened to a large extent during the program, as senior Ministry of Education and Training leaders crisscrossed the country visiting schools and incorporating adjustments in the program based on feedback. Greater awareness about this phenomenon, which also took place at the provincial level, would go a long way toward generating ownership among all stakeholders.

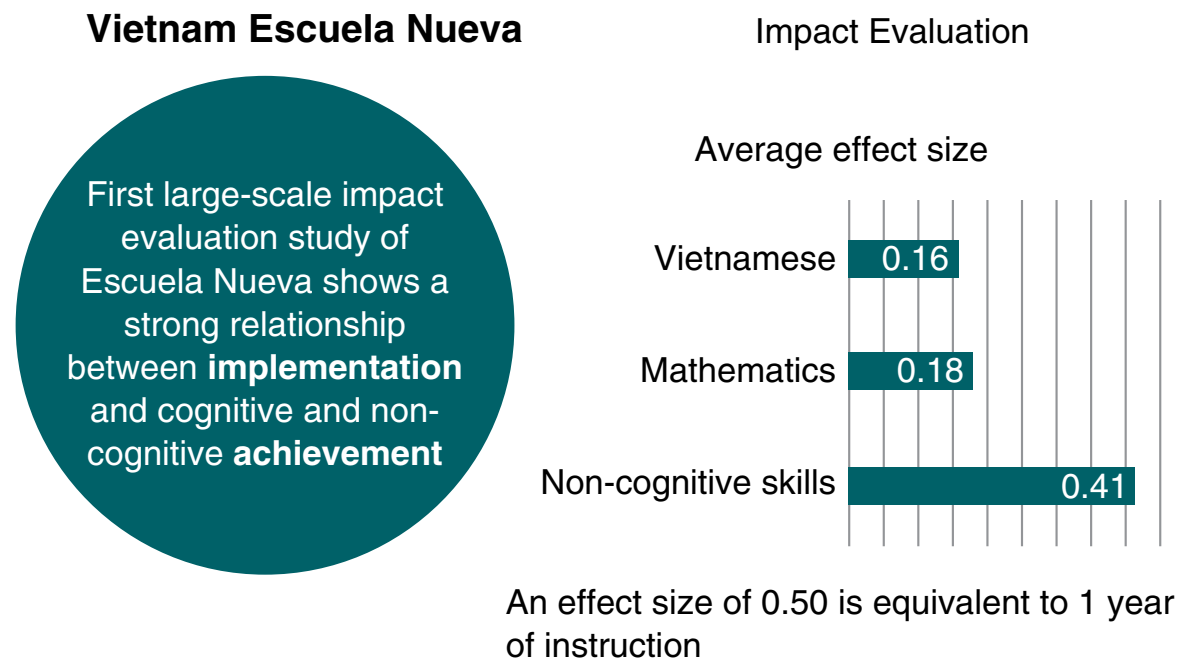
**The qualitative component also has many potential avenues for further research with more time to fully analyze the video data than has been possible so far.** With 810 videos from 270 lessons (with each lesson containing a video of the teacher and of two student groups), there are many opportunities to delve deeper into specific aspects of what takes place in the classroom. The videos also provide ample opportunity to create vignettes for use as examples in training and professional development. Many examples of advanced VNEN practices have already been identified in this round of analysis, but this could be extended with the creation of a database of examples. The vignettes could also include a set of more specific tags of what the videos represent. For example, clips identified for high levels of leadership could be further catalogued as showing where the leader effectively leads a discussion involving higher order thinking, where the leader ensures all members are actively participating, or many other ways in which leaders demonstrate unique skills.

**The quantitative data collection over a period of nearly three years has generated a huge amount of data that can generate many further**

**insights if the data are made available to researchers.** While the impact evaluation results presented here can be further deepened and developed from this data, the team from Research on Improving Systems of Education (RISE) will collect further data from the same cohort of children as they go through secondary school. The primary data collected under the current study itself provide a veritable data mine of research on various topics including teacher efficacy, principal leadership, and other issues related to educational psychology and student achievement. It is hoped that the data will be made available by the Vietnamese government to researchers in the future to carry out further investigation.

**Vietnam's education system is widely regarded internationally as a 'success story'. Continued engagement with the international education research community will bring mutual benefit for Vietnam as well as other countries who wish to learn from Vietnam.** This research study has provided such benefits, with the promise of more to follow. Two key points of this research study are indicated in Figure ES.1. First, in order to evaluate a program, it is important to compare performance growth for the program schools as well as a control group of schools; merely evaluating 'before' and 'after' performance is not enough for attribution of changes to the program. Second, with methodological considerations to be detailed in forthcoming academic papers, the study found positive impact, especially for non-cognitive skills.

**Figure ES.1** Vietnam Escuela Nueva Impact Evaluation: 2013–2017



Source: VNEN Impact Evaluation study primary data, Authors calculations.





# Why Vietnam Escuela Nueva (VNEN)?

# 1

## 1.1 The Escuela Nueva Model

### 1.1.1 Origins in Colombia

Escuela Nueva began to be implemented in Colombia in the 1970s as a program that transformed rural education in that South American country. From being behind their urban counterparts, rural children were provided an education that catered to their particular context. Escuela Nueva included a number of elements that were highly innovative at that time, and can be considered to be modern and forward-looking to this day. These included self-paced learning guides instead of textbooks and a flexible school calendar adapted to imperatives of rural life such as the intense labor of the harvesting season.

Rather than retrofitting an education model designed for cities in industrial societies, Escuela Nueva sought to build on strengths of the rural contexts. This was inclusive education before inclusion became fashionable, by doing simple things such as bringing in farmer parents to classrooms to help relate education to livelihoods. It started as a grassroots initiative that became a national and then an international program (Kline, 2002). While the initial focus of Escuela Nueva was on multigrade schools, as the program began to be implemented in diverse contexts in other countries, other elements of the program, such as its basis on participative and collaborative learning, became more important. Juárez, Associates, and Inc., 2003 provide a useful review of the application of Escuela Nueva in Guatemala, Nicaragua, and the Philippines.

Why did Escuela Nueva become such a popular and long living program? What is the 'secret

sauce' of Escuela Nueva? Though the purpose of this book is to investigate the impact of implementation of Escuela Nueva in Vietnam, the following quotation provides an insightful context setting about the original Colombian program:

"Imagine a primary school where children work together to learn things that are relevant to their lives, where teachers are facilitators who foster comprehension and democratic behavior, and where parents and communities are actively involved in their children's education. Now imagine that this is not an exclusive private school open to a wealthy few, but a state school in a developing country attended by children who are among the poorest in the world. This is not a utopian dream but reality for over 20,000 schools in Colombia attended by 5 million children today. They are 'Escuela Nueva' schools."<sup>1</sup>

### 1.1.2 Adaptation in Vietnam

A conference was organized by the World Bank in Cebu City, Philippines, from February 9–12, 2009, with financial support from the Education Program Development Fund (EPDF) of the Education for All-Fast Track Initiative (EFA-FTI), the precursor organization of the Global Partnership for Education (GPE). The title of this conference was "Multiple Approaches of Education for Rural Areas: Lessons from Good Practices" and it brought together experts and practitioners from around the world including Vicky Colbert and Pablo Jaramillo from Colombia, who made presentations regarding Escuela Nueva.<sup>2</sup> Also attending the conference were policy makers from the Vietnamese Ministry of Education and Training (MOET).

The Vietnamese delegation included the then Deputy Minister in charge of Primary Education, Mr. Nguyen Vinh Hien and Mr. Dang Tu An, then Project Director of the Primary Education for Disadvantaged Children (PEDC), a multi-donor financed MOET project. The Vietnamese delegation was quite impressed by the presentations and discussions with the Colombian experts and a follow-up visit was organized for a MOET team to visit rural Colombia on a study tour to learn more details about Escuela Nueva. Even more impressed by the reality they saw in Colombia, the Vietnamese found some resources generated from efficiency savings in the PEDC project to design a pilot of Escuela Nueva in Vietnam that began implementation in 2010.

The pilot program was developed for a geographical spread of six provinces from three different regions of Vietnam with disadvantaged and ethnic minority populations. In each province, two districts were chosen, in each district two schools, and in each school two Grade 2 classrooms—for a total of 24 schools and 48 classrooms. According to the MOET officials at the time, the pilot generated an unexpectedly high level of enthusiasm and energy among the participants and stakeholders. For example, though materials and teacher training were provided only for two class sections in each pilot school, other teachers observed the Escuela Nueva classrooms and began to adopt elements of Escuela Nueva, such as learning corners and group seating. In fact, some of the neighboring schools also sought information and knowledge to adopt Escuela Nueva (EN) practices on their own. And this was a nearly universal phenomenon across the diversity of contexts, not just isolated in one or two of the pilot schools.

A main reason to initiate a pilot regarding the pedagogical approach was the plan in Vietnam to undertake a major overhaul of the education system called the “Fundamental and Comprehensive Reform of Education.” The reform, currently in implementation, is formalized in

strategic terms in *Resolution 29* of the Central Steering Committee of the Eighth Congress of the Communist Party of Vietnam. *Resolution 29* emphasizes the quality of education with a focus on developing competencies and character in children as a means toward helping Vietnam become a prosperous postindustrial nation within one generation. The reform encompasses a profound revision of the curriculum, an adaptation of pedagogical methodology, and attendant teacher professional development to provide Vietnamese children with so-called ‘Twenty-First Century Skills’.

The final element of the storyline regarding the adoption of Escuela Nueva in Vietnam is the role of the Global Partnership for Education (GPE). The Education for All (EFA) goal had been defined as “Ensuring that by 2015 all children, particularly girls, children in difficult circumstances, and those belonging to ethnic minorities, have access to, and complete, free and compulsory education of *good quality*.” Vietnamese officials put together a detailed package of interventions that would help scale up the Escuela Nueva model on a much broader scale than the small pilot. The argument presented to the GPE authorities was the opportunity for the GPE to support the establishment of quality education for the disadvantaged population in a country that had largely met the quantitative goal of EFA, but still needed help. The enlightened conceptualization of school quality is presented eloquently by Epstein and Yuthas, 2012:

“The traditional definition of school quality in the developing world is based on content mastery. But using traditional schooling approaches during the few precious years most children will spend in school leads to wasted resources and forgone opportunities for individuals and communities. Governmental agencies and organizations that support and promote quality education for all children must move beyond traditional models to help children develop the knowledge, skills, and

attitudes that are relevant to their lives and that can lift them out of poverty.”

## 1.2 VNEN Theory of Change

An impact evaluation study is by design a kind of scientific experiment. It is a very difficult kind of experiment because for ethical and practical reasons, it is usually impossible to exercise a high level of control over the conditions. Experimentation is usually meant to follow a certain theory or set of theories. In this complicated case of a whole school model implemented at a sizable scale of 1,447 schools and 450,000 children, there is not a simple theory that could be cited. With regard to VNEN, there are at least five sets of theories or bodies of knowledge that were instrumental either explicitly or implicitly in designing and then implementing the VNEN model. Each of them is dealt with in turn in this section.

By way of introduction, it is useful to trace the chain of reasoning from the objective of the program to specific actual or targeted actions. The ultimate objective of VNEN is for children to develop their human potential and to grow up as adults to a peaceful and prosperous society. While some Vietnamese youth excel in Math Olympiads and Vietnamese children perform better than the Organisation for Economic Cooperation and Development (OECD) average on the Programme for International Student Assessment (PISA) in Mathematics and Science, the Vietnamese education system still faces a number of unmet challenges. The problem definition in Vietnam has been that the education system is geared to cramming children’s heads with information and knowledge. When they grow up and the children from middle- and upper-income families go to college, they continue to be fed facts and more information. For most of the poor children, who would be lucky to get to and finish high school, they often grow up with deficient livelihood skills. There is an overall lack of entrepreneurship and innovation in society, and Vietnam faces the prospect of a slowdown in

long-term growth prospects and the risk of falling into the so-called middle-income trap.<sup>3</sup>

Vietnamese leaders seek through the educational reform to both enhance the acquisition of socio-emotional skills such as creativity, independence, and problem solving, and also enhance performance on cognitive skills. Non-cognitive skills are sought to be enhanced as an end in themselves. One body of research evidence points to the direct impact of non-cognitive skills on life outcomes. For instance, Kautz et al., 2014 provides a literature review regarding the direct impact of non-cognitive skills:

“The literature establishes that achievement tests do not adequately capture character skills/personality traits, goals, motivations, and preferences that are valued in the labor market, in school, and in many other domains. . . . Character is a skill, not a trait. At any age, character skills are stable across different tasks, but skills can change over the life cycle. Character is shaped by families, schools, and social environments. Skill development is a dynamic process, in which the early years lay the foundation for successful investment in later years. High-quality early childhood and elementary school programs improve character skills in a lasting and cost-effective way. Many of them beneficially affect later-life outcomes without improving cognition.”

Another strand of the literature examines the connection between non-cognitive skills and student academic achievement (Farrington et al., 2012). In this formulation there are certain ‘academic behaviors’ conducive to good performance as measured through teacher provided class grades and standardized test scores. These behaviors are related to responsible or disciplined class attendance, homework assignments, and preparation for and participation in class activities. There is a related concept of ‘academic perseverance’ that deals with general character traits or skills such as grit or tenacity

and self-discipline. Academic behaviors and perseverance in turn arise from an ‘academic mindset’ said to be manifested through motivation, effort, and self-belief. These three individual ‘academic’ characteristics are ideally combined with the development of social skills such as communication and cooperation. Students then learn to develop and deploy appropriate ‘learning strategies’ including goal-setting, self-regulated learning, and study skills. The ultimate result is improved academic performance (Farrington et al., 2012).

Finally, there exists a more applications oriented literature. An excellent example is OECD, 2015 that provides a detailed overview of evidence from longitudinal studies in nine OECD countries. The findings from this study are very useful to examine, and the interested reader is directed to the actual OECD study which is freely available for download from the link in the bibliography section at the end of this book. Two of the salient conclusions are worthwhile to replicate here. The finding report that “Teachers and parents can help improve children’s social and emotional skills by promoting strong relationships with children and mobilizing practical learning experience.” As will be seen presently, VNEN interventions follow this logic, and although this study represents only a beginning as far as Vietnam is concerned, at some point in the recent future, researchers should be able to obtain empirical data to find out the extent to which Figure 1.1 regarding Korea from the OECD book would also be similar to Vietnam.

With the above introduction regarding what VNEN hopes to achieve—the joint improvement over time in cognitive and non-cognitive skills—we can turn to the five pathways through which the program hopes to achieve this outcome: (i) participative and collaborative learning; (ii) community involvement in education; (iii) incorporation of bodily or physical movement in learning; (iv) the serious inclusion of play and the connection to real life in learning; and (v) a

small description of the application of complex systems thinking to the design and implementation of VNEN. Elaborate and far reaching reform in the very basics of the teaching and learning process is highly dynamic and somewhat unpredictable. A final subsection deals with the dynamics of reform.

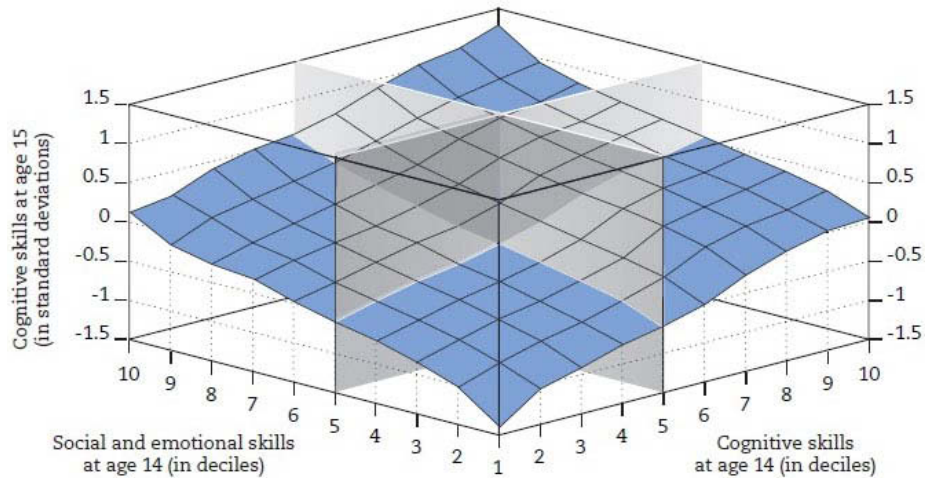
### 1.2.1 Participative and Collaborative Learning

The central and most important aspect of the VNEN program is the fundamental transformation in the teaching and learning method in the classroom. The new teaching and learning method is meant to impart, directly and indirectly, improvement in both cognitive and non-cognitive skills and competencies of the students. Various terms are used interchangeably to describe this method or aspects of the method that constitutes practice in the VNEN classroom. These terms include active learning, participative and collaborative learning, peer learning, cooperative learning, and so on. Much of the initial literature regarding EN in Colombia focused on the multigrade setting.<sup>4</sup> The multigrade classroom is usually not a choice as much as it is imposed on some education systems, typically in remote areas because it is economically or financially not feasible to have mono-grade classrooms.

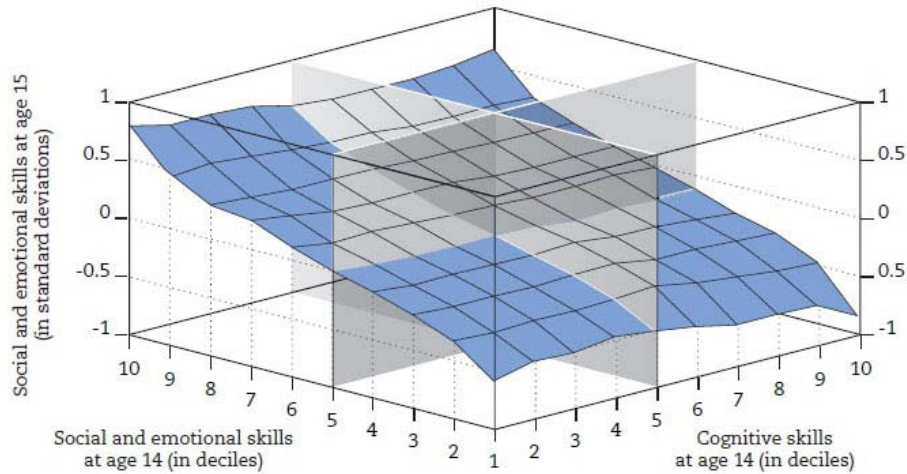
Multigrade is actually an extreme manifestation of something that is universal in classrooms—differential levels of ability along various cognitive domains, coupled with diversity of preferred learning strategies of individual students. In a multigrade classroom, it is almost impossible or definitely lacking in efficiency if the teacher tries a command-and-control lecture mode of teaching to impart knowledge. For example, a teacher may be lecturing to Grade 4 children, while the Grade 3 children listen with vacant stares, or vice-versa. There are all kinds of downstream negative effects of loss of interest and motivation. But a moment’s reflection would show that this also happens in a mono-grade classroom even though children

**Figure 1.1** Replicated from the OECD Publication—Causality and Correlation of Cognitive and Non-Cognitive Skills in Korea

Panel A. Cognitive skills at age 15 as a function of cognitive and social and emotional skills at age 14



Panel B. Social and emotional skills at age 15 as a function of cognitive and social and emotional skills at age 14



Source: OECD (2015), *Skills for Social Progress: The Power of Social and Emotional Skills*, Figure 4.3, OECD Publishing, Paris.

tend to be of a very similar age (abstracting away from the issue of repeaters that would widen the age distribution). In a traditional classroom in Vietnam, the teacher typically would aim for the middle of the ability spectrum—children who need more help to understand may be simply left behind, and children above the median may get

bored and apathetic. As enunciated by the famed Russian psychologist, Lev Vygotsky (1896–1934) who can be said to be the intellectual grandfather of VNEN, for children to learn well, they need to be in the “zone of proximal development” or ZPD. The best reference to the reader unfamiliar with the concept of ZPD is available from the



excellent video “Vygotsky in the classroom” produced by some highly creative education students and available at <https://www.youtube.com/watch?v=I9CnZoFUIT0>. Peer learning is meant to enhance the probability for a student to be in his or her ZPD, with more ‘time-on-task’ or ‘t.o.t.’ and more ‘time-engaged-with-task’ or ‘t.e.t.’ See Hogan and Tudge, 1999 for more details on the connection between Vygotsky’s thinking and participative and collaborative learning.

Figure 1.2, reproduced from Topping, 2005 describes the elaborate process whereby participative and active learning may be expected to lead to non-cognitive and cognitive learning gains. The figure purports to show how the five basic subprocesses at the top lead successively to deeper interactions between the group members so that at the end there is improved metacognition (thinking about thinking) and enhanced self-esteem and self-attribution (I know how to learn and I am good at it). In turn they feed back to reinforce the initial five subprocesses outlined at the top. The author seeks to summarize the vast recent literature on peer learning that is used across levels of education for children and adults alike. In elementary school settings such as VNEN, perhaps the related term ‘participative and collaborative learning’ is more appropriate as the teacher plays a key facilitating role. The following quote from Topping, 2005 is particularly insightful:

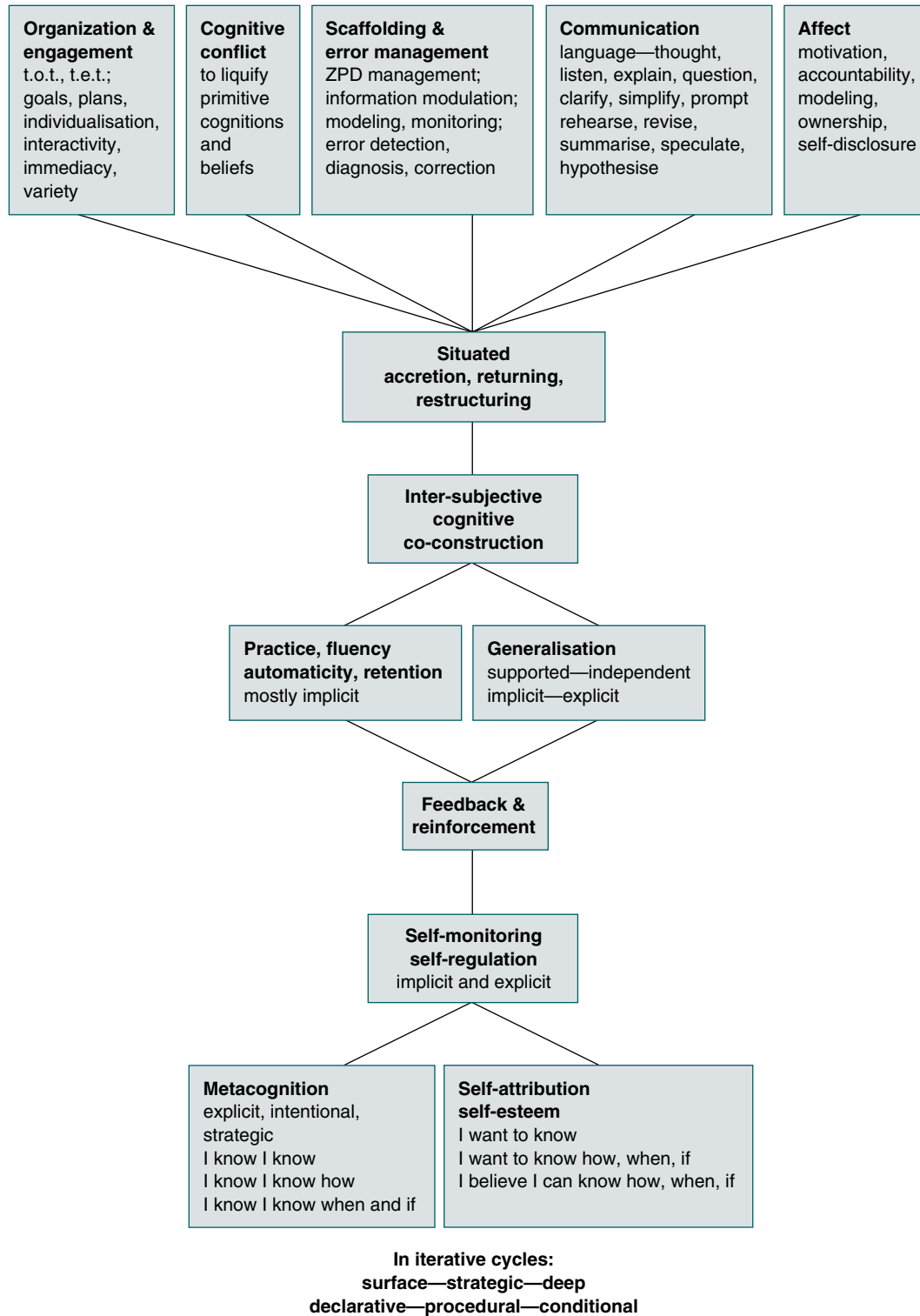
“However, many schools might think they are implementing peer tutoring or cooperative learning, when all they are really doing is putting children together and hoping for the best . . . found that while children were often placed in groups, mostly they worked as individuals. Only one-sixth of the time was spent interacting with other pupils, and most of this was not related to the task.

Sometimes hoping for the best works for some children, but typically not for those most in need. . . . Accordingly, one of the most important

changes over the last 25 years has been a greater focus upon implementation integrity.”

Seating children in small groups of three to five children in each group while the teacher continues to direct the entire classroom’s activity from the front of the classroom is clearly not active learning. What is the meaning in context of VNEN of participative and collaborative learning, also termed as cooperative learning? Johnson and Johnson, 1999 describe five key elements of cooperative learning that are often mentioned in the literature: (i) *positive interdependence*: our own individual growth is linked to the goals of others—group members have assigned roles; mutual learning goals exist to make sure everyone in the group helps to define and to attain the objectives; (ii) *individual accountability*: to make sure that each child is contributing and learning and not free-riding to his or her own detriment and that of the group; (iii) *face-to-face promotive interaction*: this may be at the core of the interaction as it involves working with others in pairs and as a whole group to explain, question, encourage and support or agree when the teacher needs to be asked for help; (iv) *social skills*: students learn by doing—they learn appropriate behavior to question and consult, to praise when deserved, to build empathy and trust; (v) *group processing* refers to norms and procedures to work together—for example if you need to borrow someone’s pencil, you may not just grab it, but request and be granted the request in a polite, overt communication exchange. The group mostly needs to learn to police itself; there is hardly any fun or innovation in the teacher shouting across the room to maintain discipline and order. In the VNEN context, group processes were termed evocatively by the Colombian consultants working in Vietnam to help MOET as *‘el ritmo de la aprendizaje’* meaning ‘the rhythm of learning’—evocative because it uses a musical or dance metaphor to describe the organic process at the heart of a VNEN group, the technically accurate term would be intersubjectivity as in Figure 1.2. Group processes in a VNEN classroom

**Figure 1.2** Theoretical Model of Peer Assisted Learning from Topping, 2005



Source: Adopted based on Topping, Keith J. (2005). "Trends in peer learning." In: Educational psychology 25:6, 631–645, Figure 1.

are mediated by the use of textbook supplanting learning guides that provide self-directed and self-guided sets of activities designed to meet the curriculum requirements.<sup>5</sup>

### 1.2.2 Community Involvement

Very closely related to the participative and collaborative learning at the heart of VNEN is the practice of community involvement in education. This comes in the form of three kinds of actions:

(i) involvement of the community in the day-to-day administration of the school and decision making about the deployment of resources that is meant to result in greater ownership of the school and its success by the community; (ii) incorporation of local knowledge and culture in the curricular content which improves the relevance of education as well as enhancing social cohesion; and (iii) the direct incorporation of parents, grandparents, and other community members in the teaching and learning activities.

The notion that greater community control over school administration may lead to improved school effectiveness has been studied exhaustively in the literature on decentralization of public service delivery. It is highly cited and discussed by Mundial, 2004 and Ahmad et al., 2005. In the particular case of VNEN, the context for all schools has generally included the involvement of the village or commune people's committee (local government). The special aspect of VNEN was the provision of an annual school grant, of about US\$2,000 per school for the school to spend on its priorities associated with the implementation of VNEN. The school community could decide to spend the resources for rehabilitation and repairs of the physical plant, furniture suitable for seating children in groups, didactic materials in addition to the materials provided by MOET, professional development meetings for teachers, hiring of temporary teaching assistants, and so on. Decisions are usually made by the school principal in

consultation with teachers, parents, and other members of the school community.

One interesting aspect with regard to community involvement is the element of 'student government'. VNEN seeks to inculcate values of service and respect for others as well as helping to develop skills of communication, teamwork, and leadership. Rather than merely teach about the relevant virtues and behaviors through the teacher's lectures, the students are meant to act together responsibly. This aspect of community involvement has been particularly important in countries with recent histories of conflict (Baessa, Chesterfield, and Ramos, 2002; Forero-Pineda, Escobar-Rodríguez, et al., 2006). Well implemented student government would involve election of the officeholders by the students, the clear assignment of roles and responsibilities to different positions, and oversight and feedback from the teacher. Students establish various committees such as a committee for cultural activities and community outreach, a learning committee, a library or reading committee, and so on. Under the tutelage of adults, the idea here is for children to learn at an early age to take responsibility for things they can influence.

As part of the effort to make education more relevant, VNEN schools encourage parents and other community members to take part in the school's activity. Local traditions and cultural practices, especially from ethnic minority communities, can be preserved and enhanced at school. Parents are encouraged to visit VNEN schools and teach skills such as local dances and music as well as artisan skills including weaving and preparation of food products. Farmers provide 'show and tell' demonstrations regarding their actual work with crops and animals. In certain instances, borrowing from Colombian precedents, there is also an attempt to bring in linkages with the dominant local industry—such as coffee and tourism. Drawing clear links between the curriculum and livelihood, for example measuring distance and

visiting the farm at the time of rice transplanting, are fun for children at the same time as they serve a didactic and motivational purpose.

### 1.2.3 Movement and Learning

There was a time when it was thought that the best classroom is one where the students are all quiet, demurely sitting in rows, without fidgeting or indeed making any movement—except perhaps raising their hand when asked by the teacher. In the traditional primary school in Vietnam, there is even a norm of the correct way to raise your hand, with one arm angled horizontally in front and holding the elbow with the other hand, which should be perpendicular, with open palm facing inward and the arm not sloping this way and that. Talking to your neighbor, even in whispers, may be regarded as a negative sign about your being a ‘good girl’. Perhaps the tradition that associates good learning with quiet and lack of movement is one of the toughest ones to break. In a Confucian Heritage Culture (CHC) like Vietnam, the inertia probably goes back a few thousand years (Littrell, 2005).

Summerford, 2009 has compiled a long and detailed timeline of research regarding the connection between the body and the brain that leads her to prescribe a series of actions for the elementary classroom teacher. The key point she makes is that cognition is facilitated by movement. This is because movement anchors learning through the body, it energizes and integrates the body and brain for optimal learning, and it makes learning fun. The scientific basis of the linkages between movement and learning is also explained carefully by Hannaford, 1995 who cites book length treatments such as Damasio, 1999 as well as scientific papers regarding the structure of the human brain and the parts of the brain that are engaged through movement (Middleton and Pl, 1994).

The literature is wide ranging and covers different topics, but a short summary would be

useful to better understand the VNEN model. Movement at the beginning of the class helps grab students’ attention and prepares them for learning—this has deep physiological reasons to do with the relationship between attention and ‘state changes’ in the body and mind. Attention and motivation are highly correlated, which makes intuitive sense—it would appear to be difficult to study hard if you are not even paying attention! A state change refers to a change in the student’s mental, emotional, or physiological state. In a VNEN class, every learning activity typically begins with a physical warm-up. This is especially effective when done as a game—what is termed as ‘ludic activity’ in the academic literature. As eloquently written by Summerford, 2009, “Our brain’s attentional system is set up to prefer high contrast, originality, and exciting connotations.”

Hannaford, 1995 describes a very interesting relationship between the strategies she used to help the learning of disabled children compared to the learning of children without any disabilities. She describes the very meaning of the term ‘learning’ as it is a process that begins at birth or even before. According to Hannaford:

“Learning is a highly natural process, invigorated by our interactions with other people through our sensory-motor experiences and sense of connectedness and appreciation.”

This is a description in perhaps an academic language of something that is obvious to anyone who has observed closely the behavior of human babies. It is immediately clear by looking at this famous video (with more than 4 million views as of December, 2016) guided by Dr. Edward Tronick, Director of the Infant Parent Mental Health Program at the University of Massachusetts: <https://www.youtube.com/watch?v=apzXGEbZht0>. The video shows how a one-year-old infant interacts with her mother and gets emotionally distressed (only temporarily, for the benefit of science) when her mother

shows an expressionless face and is unresponsive to the baby's movements and antics to get the mother's attention. What begins at infancy carries through for all of our life. We develop an understanding of the world initially in a spatial way, by exploring space through movement, including touch. And we also develop emotional intelligence and social skills such as empathy, through mirroring or mimicking actions of others. It is well known that emotion is linked to the formation of lasting memories (long-term potentiation or LTP in the scientific literature). Emotion and the physical body are inextricably linked—the very definition of emotion concerns involuntary physiological changes (Ekman, 2007). The ideal VNEN classroom, therefore, is humming and vibrant with movement—children get to express their natural selves, they are transported or alleviated to a positive affective state (also known as 'having fun'), and consequently absorb material faster and retain it longer, all the while developing deeper socio-emotional skills. This 'fun' is actually deadly serious, as explained further in the next subsection.

#### 1.2.4 Play and Learning

Serious interest in play by the general public was stimulated recently by the widely reported news that the software company Google (now part of Alphabet, Inc.) provides 20 percent of free time to employees to engage in any pursuit of their own choice, without any obligation with regard to their regular work. A number of commercially successful products have been reported to have come from free-thinking employees engaged in play (Copeland and Savoia, 2011). A branch of the same neuroscience literature mentioned with regard to movement also examines the question of play. Indeed, Hannaford, 1995 describes the role of play:

"Play provides the emotional spark which activates our attention, problem solving and behavior response systems so we gain the skills necessary for co-operation, co-creativity,

altruism and understanding. . . . Our primary emotions (happiness, surprise, fear, disgust, anger and sadness) are not often activated in our consciously controlled society. But when we truly play, these emotions are allowed to surface in a safe way. . . . When we are able to take in our fill of sensory stimuli, process and integrate it with richly developed base patterns, and express new insights in a creative way, both physically and verbally, we are then truly at play. . . . Play on words, punning and wit have contributed to creative thought in literature and drama throughout the ages. Composers, choreographers, and artists of all kinds express their integration through play. The exhilarating play of modern science spills over into mathematics, paradoxical puzzles and language."

Johnson, 2016 takes the story much further, claiming that all of human history can be explained as originating in humanity's love of playfulness. Singer, Golinkoff, and Hirsh-Pasek, 2006 and Brown, 2009 claim a bit less for playfulness, but just as with movement and the need to anchor learning in real life, they provide a convincing case for the critical importance of ludic activities in a well-rounded education. The establishment of boundaries and rules, and the exploration of those boundaries are key to explaining the impact of play on developments of skills. Singer, Golinkoff, and Hirsh-Pasek, 2006 quote the selfsame Lev Vygotsky with regard to the importance of play in stretching a child's competencies. The author provides a very detailed and well referenced exposition of how and why play is equated with learning and how play is important for the development of self-regulation and creativity.

One issue that bears greater attention is the difficulty in convincing parents and even some teachers that play is really useful. As Johnson, 2016 says, "The pleasure of play is understandable. The *productivity* of play is harder to explain." Singer, Golinkoff, and Hirsh-Pasek, 2006 document how



many important stakeholders are not yet convinced about the usefulness of play inside the classroom. The authors cite a study carried out by the Lego Corporation in five OECD countries which showed that 94% of the parents agreed that time spent playing is time spent learning. Yet the same parents are apparently confused, because they indicate that time in 'cognitive tasks' should take precedence over free time in play. Another study quoted by the authors put 'learning' as the 12th ranked benefit out of 14 benefits of play. We will present some findings from Vietnam regarding the attitudes of parents.

### 1.2.5 Complex Adaptive Systems

Complexity sciences have now become very popular, with numerous dedicated journals and scientific conferences. The field itself is very vast, with Mitchell, 2009 providing a useful introductory overview of this amalgamation of many disciplines. A central concept in complexity science is Complex Adaptive Systems or CAS. This term was introduced and explained at length by John Holland—see Holland, 1992 and Holland, 1995. Holland characterizes CAS as having certain properties and mechanisms—these include aggregation, tagging, nonlinearity, flows, diversity, internal models, and building blocks. Mitchell, 2009 provides further explanations regarding self-similar replicating algorithms and the very important concept of scaling associated with what she terms as the science of networks. The classic CAS originally studied were living systems such as ant colonies or forest ecosystems, but this soon was extended to human organization. The importance of complexity science insights for human organization is laid out very well in the evocatively titled book 'Emergence: The Connected Lives of Ants, Brains, Cities, and Software' (Johnson, 2002).

The first important application of complexity science in the VNEN program was the design of the program. In preparation for the upcoming fundamental and comprehensive reform of education,

the government was interested in generating a widespread national awareness and feedback generation campaign about the new pedagogical model. A seeding model of demonstration VNEN schools was adopted for provinces with a lower disadvantaged population; Priority I provinces would have a high density of VNEN schools, roughly every other school would be a VNEN school. In 19 Priority II provinces with a moderate number of disadvantaged children, each district within a province would have one or two demonstration VNEN schools, with an average of about 10 schools per province. Finally, in 24 relatively wealthy provinces with a very small population of disadvantaged children, there would be one demonstration school per province. This method was instrumental in helping VNEN be a truly national program whereby widespread awareness about VNEN schools was generated and about 2,000 additional schools adopted the VNEN model even though they did not receive any financial resources from the project.

The second important application of complexity science important in understanding the VNEN model of change is the use of the biweekly cluster meetings for continued teacher professional development. Indeed, the entire training model for VNEN was based on an application of complexity science principles. In the usual 'cascade' model, an initial 'training of trainers' is followed by successive rounds of training so that by the time the training reaches the school level, the understanding of the original model may be significantly distorted. In the case of VNEN training, a few school teachers were involved at the national level training, and subsequently there were multiple feedback loops for the training to be grounded in reality and to reduce the loss of signals through successive rounds.

Development of the learning guides also included a participative approach, so it was not just a group of writers preparing material to be subsequently deployed without much recourse for modification.

## 1.3 Overview of the VNEN Impact Evaluation (IE) Study Design

This impact evaluation study is based on a design that follows a cohort of students for two years, starting from a sample in Grade 3 in 2013–14 and tracking the cohort as it moved through to Grade 4 in 2014–15 and Grade 5 in 2015–16.<sup>6</sup> This section begins with an overview of the propensity score matching (PSM) method used to randomize the selection of treatment and control group schools. The data collection methodology was comprised of a set of field survey questionnaires that were administered each year to school principals, teachers, parents, and students, and a standardized assessment test for students in mathematics and Vietnamese. As in any experiment involving human subjects, it was not feasible to control all aspects of the intervention, and we found out early that there is considerable implementation heterogeneity. Implementation was varied among the treatment group schools, and there was spillover or leakage in terms of control group schools adopting elements of VNEN practice. We discuss this aspect in some detail and conclude the section with a description of the qualitative component of the study using video. The methodology for video analysis was developed in the initial period and deployed in the final year when the cohort was in Grade 5.

### 1.3.1 Randomized Selection of Intervention and Control Groups

There was an initial delay in the availability of funding before Dubai Cares stepped in with the funding. The program implementation began in the summer of 2012, with children then in Grade 2. As the VNEN program had already been implemented the year before the initiation of the impact evaluation study, it was not possible to undertake a random assignment of the program. A propensity score matching method was used to determine the randomized sample of

treatment and control group schools that were to be followed for two years. The data used for the PSM was the same school census data that had been used to prioritize provinces. It was determined that for adequate power to detect an effect size of one-tenth of standard deviation in test scores, a sample size of 300 treatment group schools and 300 control group schools would be adequate. Given the chances of logistical issues or possible school mergers or other unforeseen events, a buffer of an additional 10% of sampled schools was defined, so that a total of 660 schools would be sought to be sampled. As the province prioritization was a defining element of the program, the PSM was conducted separately for two groups—Priority I provinces with a total sample of 440 schools, and Priority II and III schools with a total sample of 220 schools.

It was fairly straightforward to find nearly matched neighbors in both samples with trimming to enhance the common support, and a random number generator was used to select the actual sample. Post selection balance tests showed very high levels of similarity between the treatment and control group schools. Within the selected schools, the number of which eventually came down to 648 because of logistics issues, a random number generator was used to select 20 students at random from Grade 3 during the baseline, and the same cohort was followed over the two years. The benchmark round of data collection was held in December, 2013.

### 1.3.2 Survey Rounds

Field survey instruments were designed to capture three sets of variables—variables that would help determine the extent to which VNEN was implemented at a school; an extensive set of contextual variables that were deemed to be relevant either as determinants of implementation or as causal variables leading to outcomes; and a set of outcome variables. The standardized tests were administered under strict vigilance by proctors other than the teachers of the same school,

with established time limits and the shuffling of questions across booklet variants to prevent copying of answers. Wherever possible, questions were used that had been established in the literature to be useful; for example, the items to determine teacher self-efficacy, an important construct related to teacher performance, was based on an extensive literature around this concept (Gibson and Dembo, 1984; Woolfolk and Hoy, 1990; Senemoğlu et al., 2009).

Data collection for the quantitative survey was done by a well-trained team of field investigators who used handheld electronic devices for recording answers. The data was uploaded at the end of the day to a cloud-based repository for checking and quality control so that any errors could be rectified while the team was in the field. Tests were prepared by a team of trained MOET test preparers who received guidance and support from a Canadian international testing expert with extensive experience regarding standardized tests. The usual protocol of a pre-test followed by the selection of items for the actual testing was used, depending on the Item Response Theory (IRT) parameters of the items.

### 1.3.3 Implementation Heterogeneity

A key issue in this impact evaluation is that the VNEN program has multiple elements. Even though there existed randomly selected treatment and control group schools, in fact, quite a few of the control group schools adopted elements of the VNEN model. Conversely, only a few of the treatment group schools applied all the elements of the model. There exists a considerable heterogeneity in the implementation of the model. In order to deal with this issue, we construct a 'VNEN implementation index'. Section 4.3 of this report provides a detailed account of the construction of the implementation index, and an introductory summary with examples is presented here.

In order to have a reasonably robust index, we include a number of measures from three respondent groups: students, parents, and teachers. As the behaviors in question are only ascertained through asking questions based on recall, we adopt an aggregating strategy to avoid the problem that the noise in the measurement of the index may overwhelm the signal. An example with one of the elements that comprises the index will illustrate the idea. The students were randomly sampled from within the sampled school; hence, students within a school belonged to different classroom sections. In the sample, each school had an average of just over three sections, and each section would have different class teachers with different practices. Student recollections and interpretations may also vary, which means that it will be useful to aggregate over the students to estimate the level of implementation of group activities at the level of the school.

The construction of the implementation index is outlined in Chapter 4. An example of one of the elements used in the index is included in this introductory section by way of illustration. A question was asked of the students: "Do you do group activities in Vietnamese subject?" with the choices being 'Yes, often', 'Yes, sometimes', and 'No'. We construct a variable as an element of the implementation index by counting the number of students who said 'Yes, often', subtracting the number of students who said 'No', and expressing the difference as a percentage of the number of students who answered the question. Now, if there is an overwhelming majority of students who answered 'Yes, often', and did so in each of the three rounds of data collection, the chances are high that the teaching of Vietnamese language was being done with students working in groups. Conversely, with a majority of students saying that group work was not the norm, chances would appear high that the teaching method was traditional rather than VNEN. Table 1.1 presents the data regarding the high incidence of group activities for Vietnamese and

**Table 1.1** Students Report of Group Activities

Variable	Group	Mean (Standard Deviation)	
<b>2013</b>			
Vietnamese group activity	VNEN	72.51	(25.34)
	Control	21.14	(41.41)
Mathematics group activity	VNEN	67.47	(29.32)
	Control	6.04	(45.76)
<b>2014</b>			
Vietnamese group activity	VNEN	74.38	(18.17)
	Control	27.89	(28.46)
Mathematics group activity	VNEN	69.09	(21.17)
	Control	15.34	(32.90)
<b>2015</b>			
Vietnamese group activity	VNEN	72.05	(17.09)
	Control	34.80	(26.85)
Mathematics group activity	VNEN	63.78	(18.15)
	Control	23.31	(32.20)

Source: VNEN Impact Evaluation study primary data, Authors calculations.

mathematics for each of the three survey years from 2013 to 2015.

The mean for the VNEN or treatment group is about two to three times the control group. The distribution is tighter for the treatment group, as shown by the lower relative standard deviation. The VNEN group shows a slight increase from the first to second year, and then a decline in the third year in the level of the variable. The control group shows a progressive increase in the mean value over the two years, and a decline in the dispersion, though the standard deviation for the VNEN group always remains smaller and in fact declines monotonically. The aggregated measures of Table 1.1 do not show the value of the variable for individual schools, which tends to stay stable across the three years for some schools, and fluctuate for other schools. This fluctuation indicates

that for a robust measure of implementation, a number of measures need to be combined.

### 1.3.4 Use of Item Response Theory (Rasch Indices)

Throughout the study, as mentioned in the relevant sections, we have summarized the collected data through the construction of Rasch indices (Masters, 1982; Green, Frantom, et al., 2002; Bond and Fox, 2015). This method has great intuitive appeal. The raw score on the categorical survey items is only the starting point for the construction of a weighted mean likelihood estimate (WMLE) measure that captures the pattern of variation in scoring of the elements (Linacre and Wright, 2000). By standardizing the resulting value to a mean of 0 and standard deviation of 1,

the findings using the index can be easily interpreted and understood.

### 1.3.5 Qualitative Research

The qualitative component of the Impact Evaluation, presented in Chapter 7, is intended to complement the quantitative component in order to provide a more complete picture of VNEN. The qualitative component provides a deeper understanding of how the VNEN program has been implemented in schools and the extent and ways in which it has been adopted.

There are multiple pathways that could lead to superior outcomes, and the outcomes themselves are multidimensional. Such complexities necessitate an approach of in-depth qualitative analysis. The analysis examines specific aspects and classifies practices of teachers and students into Beginner, Intermediate, or Advanced depending on both (i) the extent to which the teacher and/or students follow the practices and (ii) the level of effectiveness.

While students' practices are determined in large part by the teacher and how the teacher operates the lesson, the students also develop their own way of operating and interacting. Therefore it is critical to study students' practices both in the context of student-teacher interaction and separately from student-to-student interaction. The design of the classroom analysis therefore involved the use of three separate cameras: one focused on the teacher and two focused on two separate student learning groups of four to six students. The analysis of these three perspectives gives a rounded picture of what is taking place in the classroom.

A sample of fifteen schools across four provinces was used for the qualitative component, with the

main criteria for school selection being to ensure a range of contexts and learning outcomes among the schools. The focus was on VNEN schools, as the aim is to clearly describe and illustrate what are advanced VNEN outcomes. However, in an impact evaluation setting, it was important to include a few control group schools to provide a reference or benchmark of practices in a traditional setting. In primary schools in Vietnam, as in most other countries, the same teacher is typically responsible to teach both Vietnamese and mathematics. In each of the fifteen schools sampled for the qualitative study, three mathematics and three Vietnamese lessons were filmed for three different teachers, for a total of 270 lessons (15 schools × 3 teachers per school × 6 lessons per teacher).

The videos were analyzed by developing multiple tracks of content analysis. The development of tracks by human coders to examine the incidence and duration of specific actions in the classroom was popularized by Stigler and Hiebert, 1999 in their insightful TIMSS Video Study. The standardized use of classroom observation, including video to provide data that can be used to make comparisons over time and across units of observation in a valid and reliable way, is the subject of a vast amount of literature.<sup>7</sup> This VNEN IE study seeks to contribute to the development of a robust and scalable research method for meaningful measurement regarding the acquisition of non-cognitive skills. Further development, including technological advances such as wearable computer devices and machine readable video are possible sequential steps. Data generated in this way may be a revolutionary means to develop an understanding of non-cognitive skills, and this study forms part of baby steps along a long but promising journey.



## 1.4 Preview of Findings

### VNEN has a positive impact on Vietnam

This study reports the findings of positive impact using an impact evaluation procedure that followed a cohort of students from Grade 3 through to Grade 5. The positive impact holds for both mathematics and Vietnamese standardized tests scores as well as for measures of non-cognitive achievement. These findings need to be examined through the scrutiny of academic publication as the underlying models used are complex and require specialized knowledge of statistical methodology regarding inference on attribution.

The study finds evidence of learning gains for both cognitive and non-cognitive aspects in context of a cohort of intervention and control groups; it finds that learning progress is better for VNEN students.

### Full scale impact requires implementation feedback loops

What drives the positive results of the program is not so much the label of VNEN or participation in the program as much as the full implementation of VNEN elements. While all VNEN schools met the letter of the program, we found that implementation intensity varied. In a complex intervention with many elements, and which requires teachers and stakeholders to transform their mindset, the heterogeneity is not unexpected. A complex reform cannot be enforced uniformly by mandate. Going forward with the reform, it is very important for strong and multiple feedback loops for all stakeholders. These feedback loops will help generate ownership of the model. The feedback loops will also enable learning regarding what works and what does not work.

Implementation was strongest when school leaders and teachers showed initiative and creativity regarding participative and collaborative learning.

### Video analysis indicates how and why the results are obtained



Source: © World Bank

The qualitative portion of this study seeks to understand the how and why of impact. We know that VNEN had a positive impact, we know that impact was related to intensity of implementation, and the video analysis helps us to understand what that means. Future development of the methodology will provide rich insights and policy inroads.

Vietnam has potential to lead the developing world regarding the achievement of the goal of learning for all, providing 21st century skills in an inclusive way.

## Endnotes

1. Retrieved from <http://isites.harvard.edu/fs/docs/icb.topic566774.files/Escuela%20Nueva.doc> on December 15, 2016. As the focus of this book is on Escuela Nueva in Vietnam, we skip details regarding the program in Colombia. An excellent written overview can be found in Psacharopoulos, Rojas, and Velez, 1993. Introductory accounts are also available in Colbert, Chiappe, and Arboleda, 1993 and Colbert, 1999.
2. Details of the conference and related materials can be found at Multiple Approaches of Education for Rural Areas: Lesson from Good Practices. Cebu, Philippines, February 9–12, 2009.
3. Vietnam faced a declining trend of growth in product diversification at the beginning of this decade. A network analysis of world trade flows showed that Vietnam's revealed comparative advantage was restricted to a few raw-material product categories (World Bank, 2011).
4. Psacharopoulos, Rojas, and Velez, 1993; McEwan, 1998; Benveniste and McEwan, 2000; McEwan, 2008.
5. The learning guide activities follow a prescribed sequence which starts with prior knowledge, moves through the introduction of a new concept, then the application of the concept in known situations and finally applications in unknown or future situations. Sometimes there is also follow-up work to be done at home or in the community. For a detailed description of the way in which the theories of participative or collaborative learning were prescribed for implementation as part of the VNEN program, please refer to the thirteen VNEN dimensions—organizational factors for peer learning, in the language of Topping, 2005.
6. The school term in Vietnam starts at the end of August or early September and ends in May of the following calendar year.
7. See Erickson et al., 2006; Rich and Hannafin, 2009; Bell et al., 2012; Danielson, 2012; and Goldman et al., 2014.



This chapter presents findings in three sections. In the first section, we discuss issues and factors related to the strength of implementation of the program. This includes issues such as school autonomy and the sufficiency of school grants. The next section deals with contextual factors influencing implementation and results. It covers issues such as the values and beliefs of principals and their political skills. Finally, a third section provides evidence of estimation of program impact.

## 2.1 Strength of Implementation of the Program

School leadership is often considered to be one of the most important dimensions of school effectiveness or the performance of programs.<sup>1</sup> Related research has examined the aspect of recruitment or election of school principals, the professional development of principals, and the autonomy provided to school principals as important in developing effective school leaders. Researchers have examined closely issues of performance, political skills, leadership styles, and personality of school leaders.<sup>2</sup> In the case of VNEN, there are many reasons why the role of the school principal may be vitally important. The principal provides leadership in terms of belief and commitment about the reform. It is the principal who leads the school community in the application of the reform, by securing and deploying resources, or by solving problems along the way.

### 2.1.1 School Autonomy

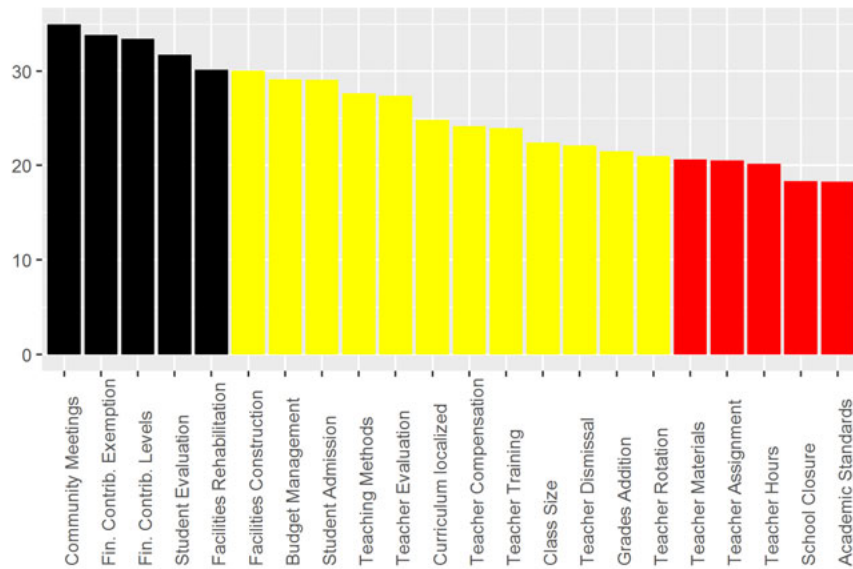
School autonomy is a part of the VNEN model by implication. Autonomy is needed to include local elements in the curriculum, involve the community, and transform the teaching method. The extent of autonomy of schools as determined in 2013 is depicted in Figure 2.1.

Figure 2.1 is based on responses from the school principal about the locus of decision making for the different decisions shown in the figure. This figure is useful as a scene-setting to understand the setting of the educational reform in Vietnam. Decisions with greater local influence get higher points and vice-versa. The decisions with a high level of autonomy toward the left side of Figure 2.1 relate to financial matters such as financial contribution levels and exemptions as well as carrying out of school infrastructure improvements. Decisions marked in gray are the five decisions with the lowest level of local autonomy. They include the establishment of academic standards as well as decisions regarding school closure or key features of teacher administration.

An autonomy index was constructed using a Rasch index method outlined in the previous chapter for overall VNEN implementation. Figure 2.2 presents the index values for Priority 1 and Priority 2 and Priority 3 provinces together. The VNEN group of schools had a higher autonomy score as compared to the control group schools. By construction the autonomy index has a mean of 0 and a standard deviation of 1. The difference in mean values for both priority groupings was about 0.25 points or one-fourth of a standard

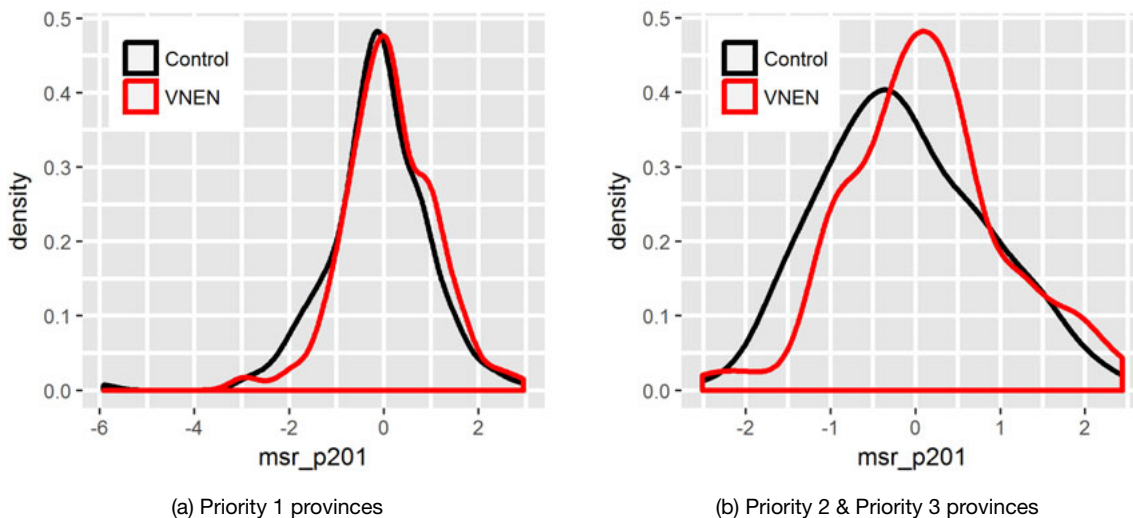


**Figure 2.1** Decentralization of Decision Making, 2013



Source: VNEN Impact Evaluation study primary data, Authors calculations.

**Figure 2.2** School Autonomy Index, 2013



Source: VNEN Impact Evaluation study primary data, Authors calculations.

deviation, with a mean of  $-0.13$  for the control group and  $0.12$  in 2013, the only year when this question was asked.

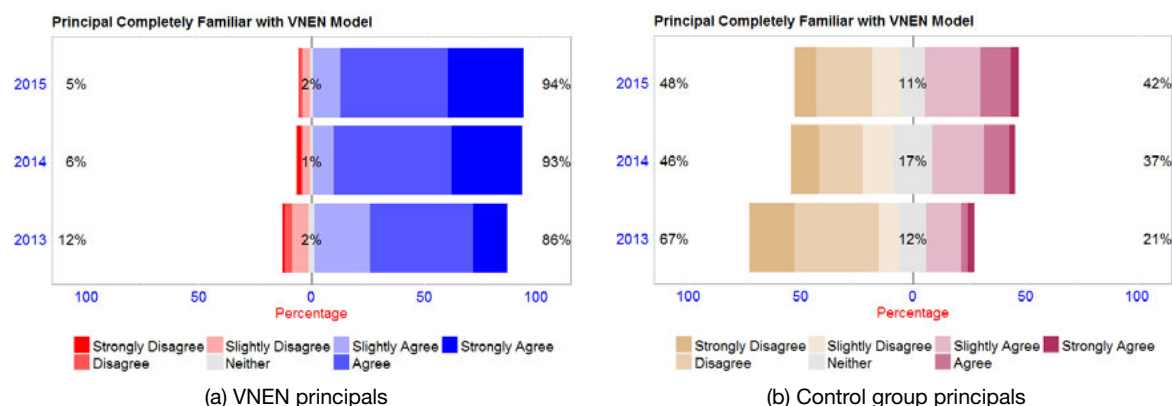
### 2.1.2 VNEN Implementation from Principal’s Perspective

In order for VNEN to be implemented adequately, the principals need to be well informed about

the model and be favorably disposed toward it. Figure 2.3 shows the evolution of principal awareness over the three years of the study. A surprising 12% of VNEN Principals in 2013—well into the second year of the project—expressed disagreement with the sentence “I am completely familiar with the VNEN model.” However, this number came down to 5% by 2015. Within the control group, we find that 67% in 2013



**Figure 2.3** Principal Familiarity with VNEN Model



Source: VNEN Impact Evaluation study primary data, Authors calculations.

expressed lack of familiarity with the model, but this number came down to 46% in 2014. From 2014 to 2015 the trend of awareness generation among control group principals slowed down. In this study, we often find that a change from the first year to the second was followed by a slow-down in the third year.

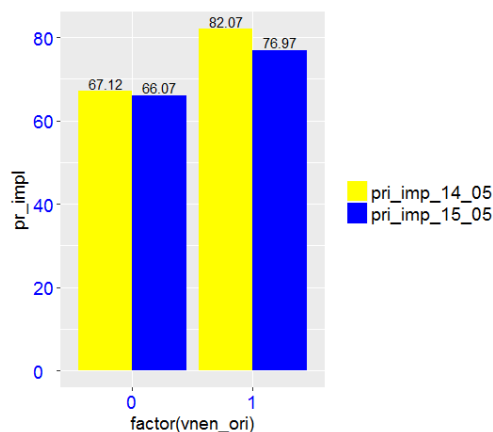
The principals were asked more detailed questions about the implementation of VNEN in the years 2014 and 2015. A set of five items or

activities covering traditional teaching methods and ten items for VNEN pedagogy were used (see Figure 2.4a). Principals were asked how often teachers in the school used that activity in class, with the options being 'always,' 'often,' 'sometimes,' and 'never'. An index was computed counting the frequency of mentions of 'always' and 'often' for the VNEN pedagogy items, less the count for 'always' and 'often' for the traditional items, and expressing the number as a percentage, so that the highest possible value would be 100%.

**Figure 2.4** Principal View of VNEN Implementation

Traditional Teaching	
a.	Teacher reads while whole class listens and takes notes
b.	Teacher works with 1–2 students while whole class observes
c.	Teacher asks several students to read while whole class listens and takes notes
d.	Teacher writes instruction on board and students copy down instruction in notebook
e.	Teacher arranges for students to sit in rows facing the teacher
VNEN Pedagogy	
f.	Teacher arranges for students to sit together in groups
i.	Class has discussion about real life objects (natural like fruit or plant) or manmade objects
j.	Teacher finds a way to relate the lesson to real life
k.	Teacher encourages children to find out new things by themselves
l.	Teacher gives feedback to class about performance
m.	Teacher gives feedback to individual student
p.	Teacher uses a game as part of the lesson
q.	Teacher uses the 'role-play' method when teaching Vietnamese
r.	Teacher makes children solve many problems when teaching mathematics
s.	Teacher is able to help students individually with a particular problem

(a) List of pedagogical activities



(b) Principal implementation measure of VNEN for 2014 and 2016

Source: VNEN Impact Evaluation study primary data, Authors calculations.

Figure 2.4b indicates that the VNEN pedagogy score was 67 for control group schools in 2014 and 82 for VNEN group schools. The variable *vnen\_ori* takes on the value of 1 for VNEN group schools and 0 for control group schools. One interesting observation from Figure 2.4b is the decline from 2014 to 2015 in the index value for both VNEN and control group schools, with the VNEN group measure declining from 82% to 77%. In the case of the VNEN pedagogy measure from principals, we did not have a measure for 2013, but for many of the variables, for instance in the case of the familiarity with VNEN, we see a big movement from 2013 to 2014 and then a smaller or even negative movement from 2014 to 2015.

There could be many possible reasons for lack of adoption of full VNEN practices. As an example, while 73–75% of VNEN group principals reported that their teachers used games ‘always’ or ‘often’, the remaining 25% of VNEN principals may have beliefs that preclude faith in the importance of play or ludic activities in the classroom. Or it is possible that teachers had difficulty coming up with ideas of appropriate activities, though the VNEN learning guide is supposed to solve that particular problem by outlining suggested activities.

### 2.1.3 School Grants and Student Scholarships

One key implementation measure of the VNEN program was the provision of school grants. Every school received a grant of US\$3,000 per year, and schools with satellite campuses received an additional grant of US\$1,300 per year. This amount is estimated to be about 10–15% of the average school’s regular operational budget, without considering payment for teachers, who are paid directly by the provincial government. The reasoning behind the grants was that the disadvantaged communities targeted by the VNEN project needed financial support to be able to implement VNEN. The grant was expected to be spent on teaching materials, professional development meetings at the cluster level, minor rehabilitation, and repair and renovation of furniture if needed for children to be able to be seated in groups. The choices of expenditures were delegated to the school community—with the principal making decisions in consultation with teachers, parents, and other stakeholders in the community.

In the principal survey, a question was asked to the principal in VNEN schools about the sufficiency of the grant received for various items of expenditure and the results are presented in Table 2.1. In this table a measure of 2 indicates

**Table 2.1** Sufficiency of VNEN School Grants

Dedicated Use of School Grant	Priority 1			Priority 2 & 3		
	2013	2014	2015	2013	2014	2015
Professional development meetings	1.68	1.68	1.78	1.59	1.75	1.7
Learning space & teaching materials	1.09	1.63	1.67	0.97	1.64	1.72
Teaching tools & communication material	1.13	1.53	1.62	1.05	1.61	1.57
Organizing events and awards	1.12	1.49	1.53	1.24	1.56	1.48
Renovating furniture	0.86	1.38	1.38	0.83	1.40	1.34
Minor classroom renovations	0.78	1.10	1.20	0.67	1.23	1.16
Teaching assistant & extra-curricular	1.00	0.66	0.50	1.12	0.54	0.34

Source: VNEN Impact Evaluation study primary data, Authors calculations.

that the principal thought the funds were sufficient for the purpose, and lower numbers suggest an opinion about less sufficiency. The interesting finding from Table 2.1 is that professional development meetings received a score quite close to 2—lack of resources would not have held back the school’s ability to organize biweekly cluster meetings. Schools made use of the grants for teaching materials and supplies associated with VNEN and organizing events with parental participation. Infrastructure related investments and school furniture are long-term spending items for which the grant was probably not considered to be sufficient.

One interesting aspect of school finance in Vietnam is the prevalence of scholarships for children from poor families and other disadvantaged situations. In primary education, there are no official fees, but parents and the school community typically get together and determine the contributions they will collect. This direct local financing is in addition to expenses for salaries and basic education material including textbooks and school supplies, which is covered by the provincial government. Table 2.2 indicates the variation in the pattern of scholarships. Overall, less than 10% of students receive scholarships, but the percentage is higher in Priority 2 & 3 provinces. VNEN and control group are matched very well in Priority 1 provinces, but scholarship awardees appear to be slightly higher in VNEN schools in Priority 2 & 3 provinces.

## 2.1.4 Community Engagement

Community Engagement is an important facet of the VNEN program, with at least three interventions: the involvement of parents in providing training for livelihood skills and local customs and traditions, at school and through ‘applications’ homework; the involvement of parents in classroom instruction; and support for decision making in schools. Figure 2.5 provides a comparison between VNEN and control group schools from the point of view of principal invitations to parents. The items in the lower panel serve as controls which show parity between VNEN and control group schools. The upper panel of Figure 2.5 shows the variation in VNEN implementation on the dimension of community engagement, with 94 VNEN schools not inviting parents even once for livelihood or culture related training, and 149 doing so only once in the school year.

Figure 2.6 shows the comparison between VNEN and control group schools on a composite measure of community engagement including nine more items including parent’s labor contributions and discussion of financial matters.

## 2.1.5 Readiness for Self-Paced Learning

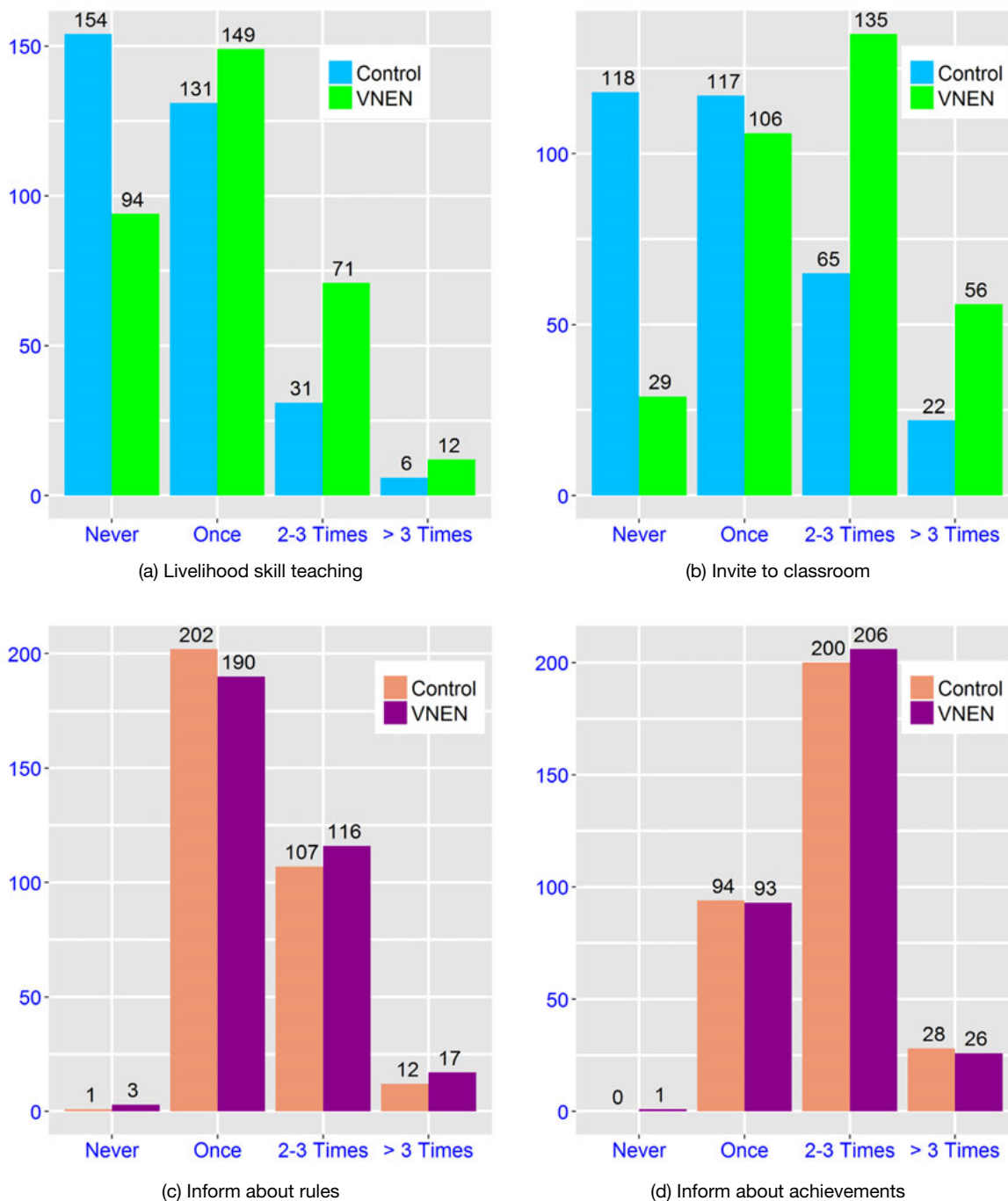
With the VNEN method centered around self-paced ‘learning guides’, Grade 1 is dedicated to get children up to speed in being able to

**Table 2.2** Scholarships Compared to Enrollment, 2015

	Priority 1						Priority 2 & 3					
	Control Group Quantile			VNEN Group Quantile			Control Group Quantile			VNEN Group Quantile		
	0.25	0.50	0.75	0.25	0.50	0.75	0.25	0.50	0.75	0.25	0.50	0.75
Students	137	243	372	124	237	372	198	281	398	139	329	505
Scholarships	1	7	22	1	6	19	1	8	30	2	10	30
% Scholarships	0.69	2.75	8.96	0.62	2.78	7.61	0.25	2.63	9.52	0.56	3.56	11.55

Source: VNEN Impact Evaluation study primary data, Authors calculations.

**Figure 2.5** Principal Report of Parent Participation, 2015

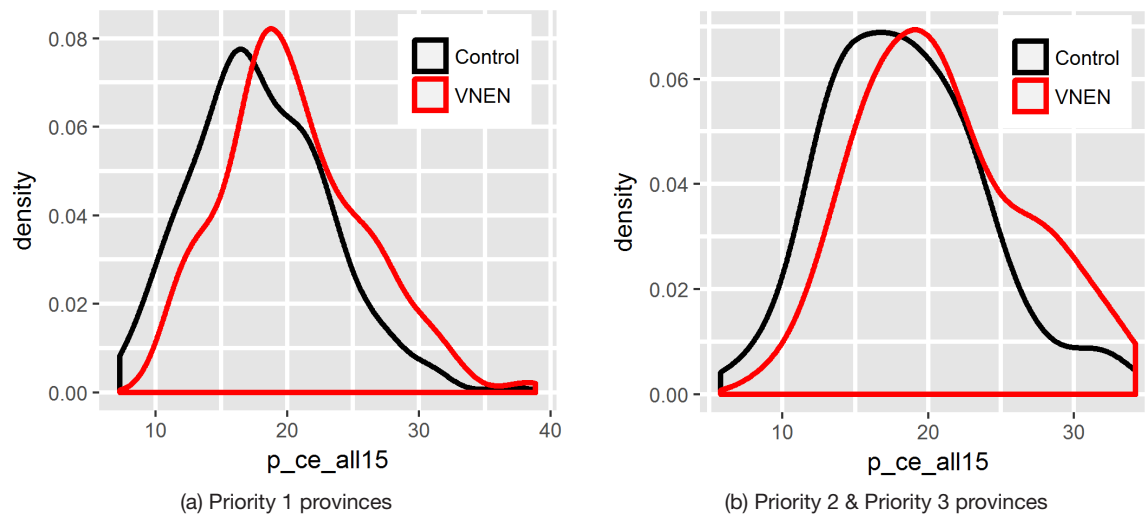


Source: VLEN Impact Evaluation study primary data, Authors calculations.

read and follow the instructions. Figure 2.7 shows for all schools the principal's opinion about the grade by which at least 75% of the children at the school acquire a certain skill.

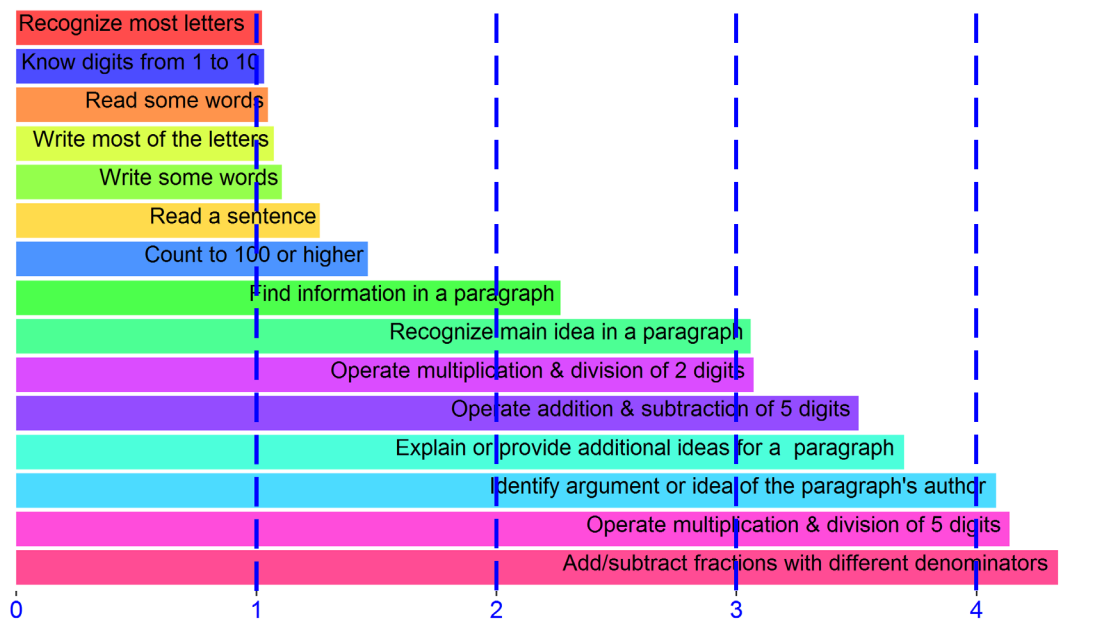
The skill 'Read a sentence' on average goes beyond Grade 1 (blue line), with VLEN and control groups not shown separately as there were no differences.

**Figure 2.6** Community Engagement Measure



Source: VNEN Impact Evaluation study primary data, Authors calculations.

**Figure 2.7** Readiness for VNEN (per grade level)



Source: VNEN Impact Evaluation study primary data, Authors calculations.



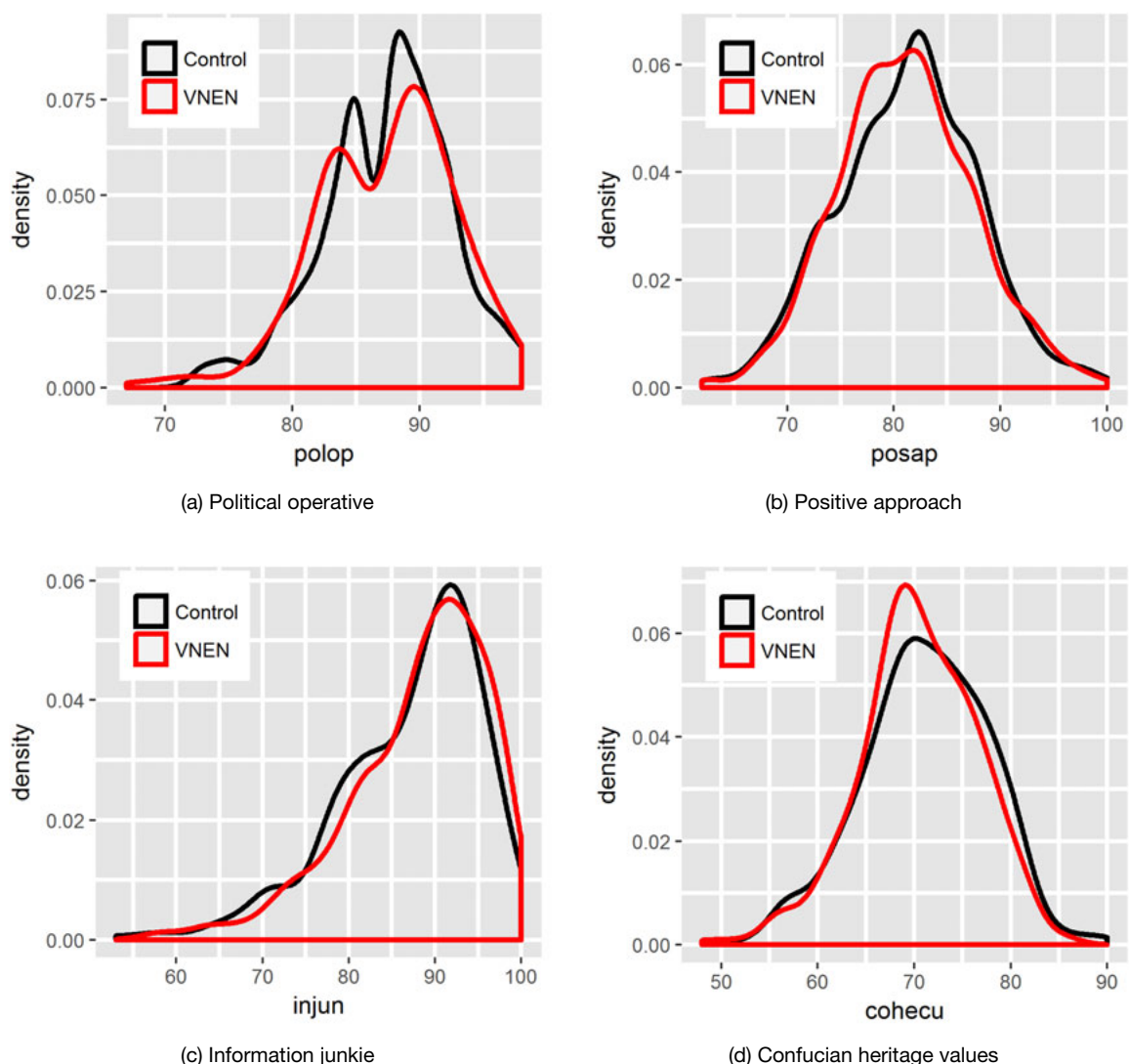
## 2.2 Contextual Factors Influencing Implementation and Results

### 2.2.1 Principal's Values and Beliefs

The first contextual factor is based on a subset of questions from the World Values Survey (WVS)<sup>3</sup>. The WVS includes a detailed set of questions asking people about their personal beliefs. We generated four constructs from a subset of WVS questions. 'Political operative' is comprised of questions about the importance to the person of work, leisure, politics, and pride.

'Positive approach' comes from WVS items about a positive approach to life, good health, trust and a belief that people have choices. 'Information junkie' comes from a question about the number of news sources a person accesses frequently, including print media, television, and the Internet. Finally, 'Confucian heritage values' comes from aspirations regarding being rich and successful, doing good for society, behaving properly, and following tradition. Along all four measures, one does not find any appreciable difference between the VNEN and control group schools (Figure 2.8).

**Figure 2.8** Principal Values and Beliefs (average 2013–2015)



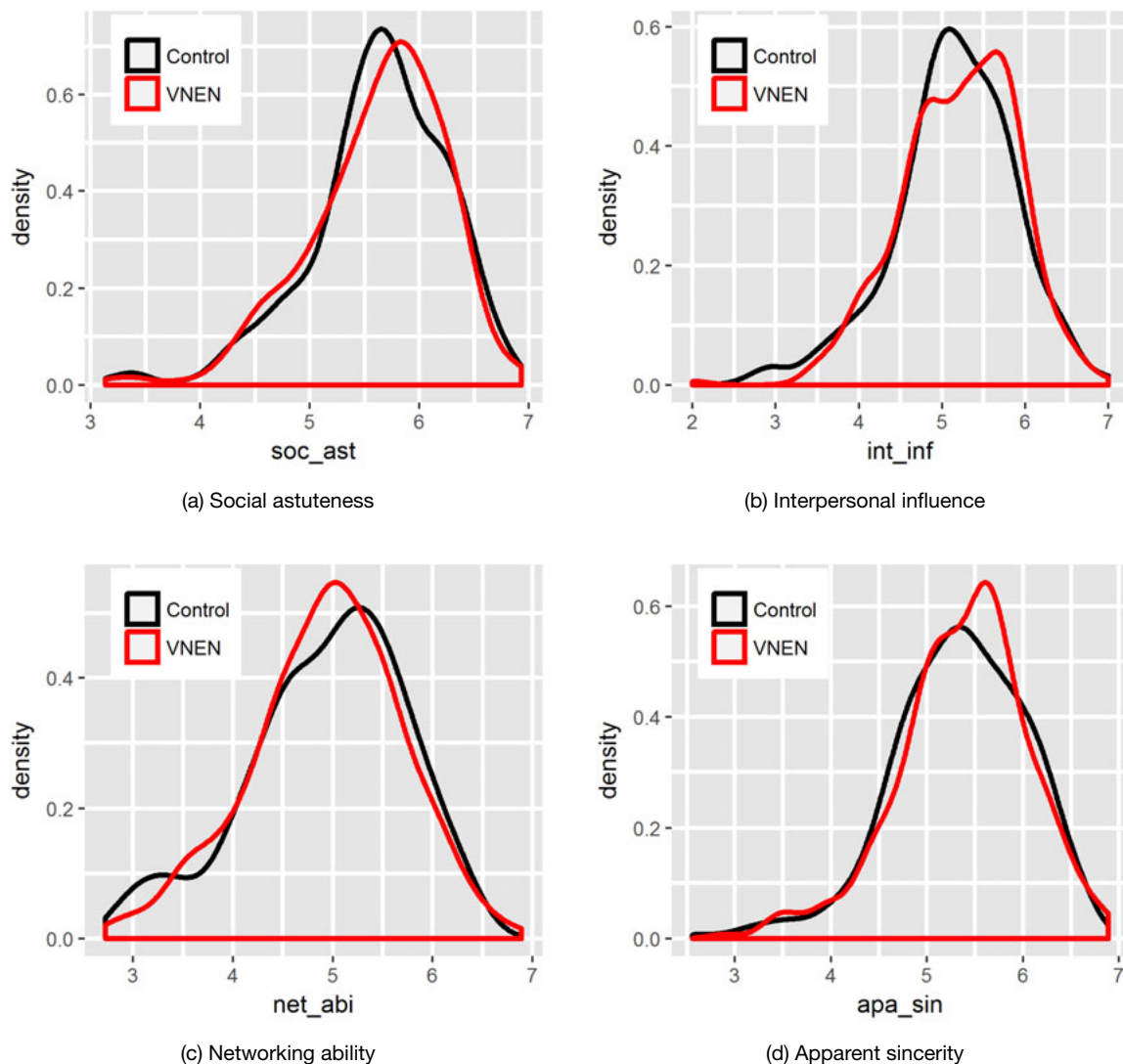
Source: VNEN Impact Evaluation study primary data, Authors calculations.

## 2.2.2 Principal's Political Skills

Values and beliefs of a principal may affect their motivation and interest in implementing VNEN successfully. A key aspect of leadership is the ability to get things done with and through people, which depends on political skills.<sup>4</sup> The four dimensions of political skills shown in Figure 2.9, together are defined by Ferris, Treadway, et al., 2005 as 'the ability to understand others at work and to use that knowledge to influence others to act in ways that enhance one's personal or organizational objectives'.

Figure 2.9 indicates an even distribution of political skills across VNEN and control group principals. In the case of the VNEN program, it is feasible that principals with higher levels of political skills would be better able to implement the program and obtain superior performance from teachers, parents, and students. It is also possible that a principal's political skills may be used to not implement VNEN very well, if the principal has beliefs against the program—political skills could be a double-edged sword.

**Figure 2.9** Principal Political Skills



Source: VNEN Impact Evaluation study primary data, Authors calculations.

The four dimensions of political skills are understood as follows: *Social astuteness* refers to the powers of observation, awareness, and understanding in social contexts. According to Ferris, Davidson, and Perrewe, 2005, individuals with high levels of social astuteness ‘comprehend social interactions and in social settings they accurately interpret their own behavior as well as that of others’. The ability to have a high self-awareness and empathy for others likely has biological roots, with some individuals having higher capabilities through a combination of nature and nurture (Iacoboni, 2009).

*Interpersonal influence* refers to the ability to understand others and oneself to get other people to willingly and pleasantly follow suggestions and guidance. *Networking ability* refers to the development and use of networks of different stakeholders, in this case of teachers, parents, district, provincial, and national officers and external experts. Finally, *apparent sincerity* refers to the impression that other people have about the individual’s sincerity—for instance, when the principal greets the invited parent with a smile and inquires about the harvest that year, the parent should perceive that the principal is genuinely interested in the answer.

### 2.2.3 Principal’s Innovative Attitude

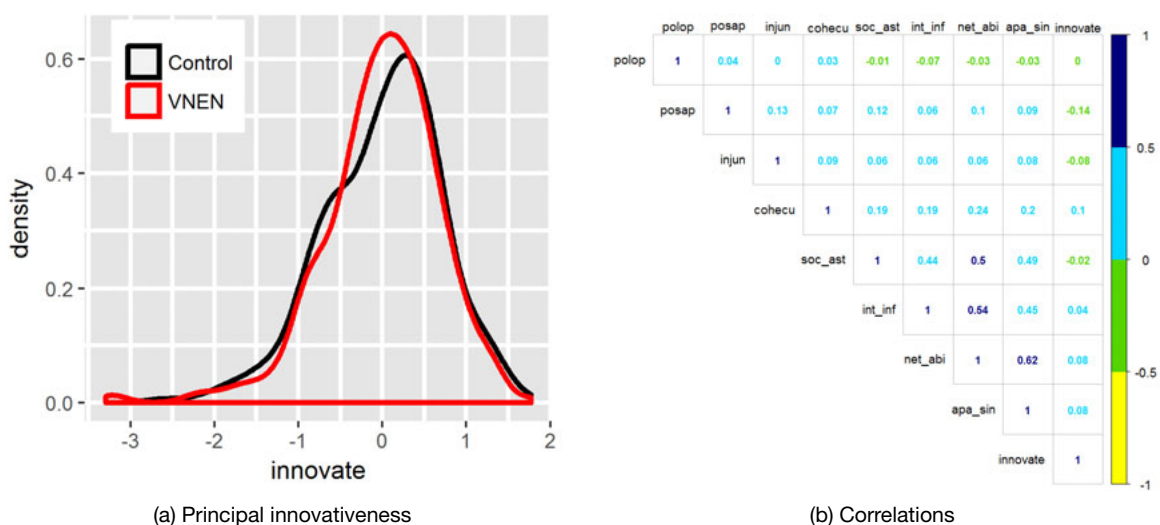
Since VNEN represents a fundamental innovation in teaching and learning, it is important to be able to calibrate, beyond the principal’s beliefs and political skills, about innovativeness as a personality trait or behavioral habit.<sup>5</sup>

As with the earlier graphs on values and political skills, the left-hand side density estimate depicted in Figure 2.10 indicates a parity between VNEN and control group principals. The right-hand side of Figure 2.10 shows color coded correlation coefficients between the nine constructs measured for principals. There are only a few correlations that are statistically significant between the political skill measures. Further research would be needed into these constructs to understand fully their application to principal behavior and school performance.

### 2.2.4 Principal’s Active Engagement on the Job

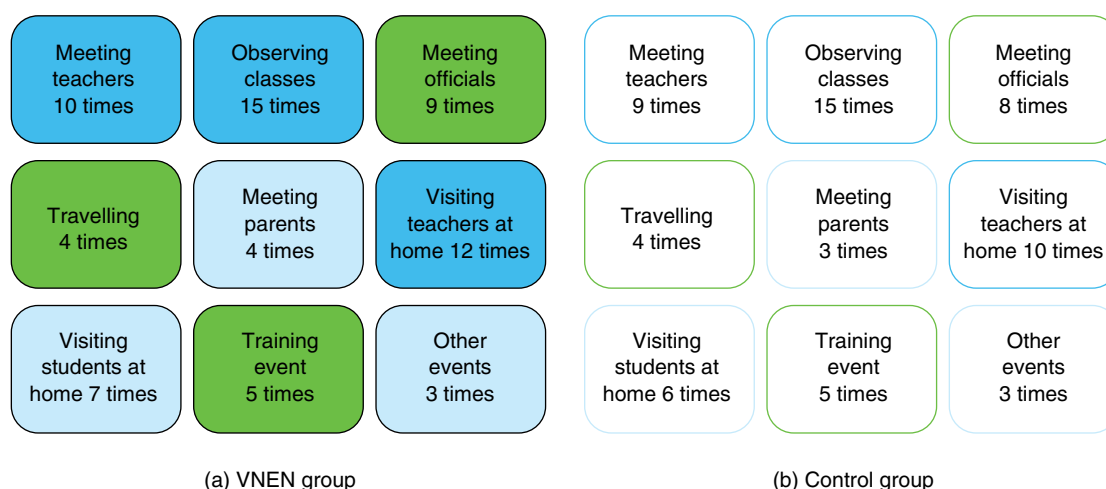
We sought to measure the activity level of the principal as a contextual variable related to implementation and performance (Figure 2.11). Three groups of activities were considered—related to

**Figure 2.10** Innovation and Correlations



Source: VNEN Impact Evaluation study primary data, Authors calculations.

**Figure 2.11** Principal as Busy as a Bee—Every Semester, 2015



Source: VNEN Impact Evaluation study primary data, Authors calculations.

teachers (shown in dark blue); activities with parents (in light blue); and administrative activities (in green). There were no statistically significant differences between VNEN and control groups. By the third year of the program, it might have been expected that VNEN principals would report higher levels of activities with regard to observing classes or meeting with parents, but no such evidence was seen in the data.

### 2.2.5 School Size, Infrastructure and Facilities

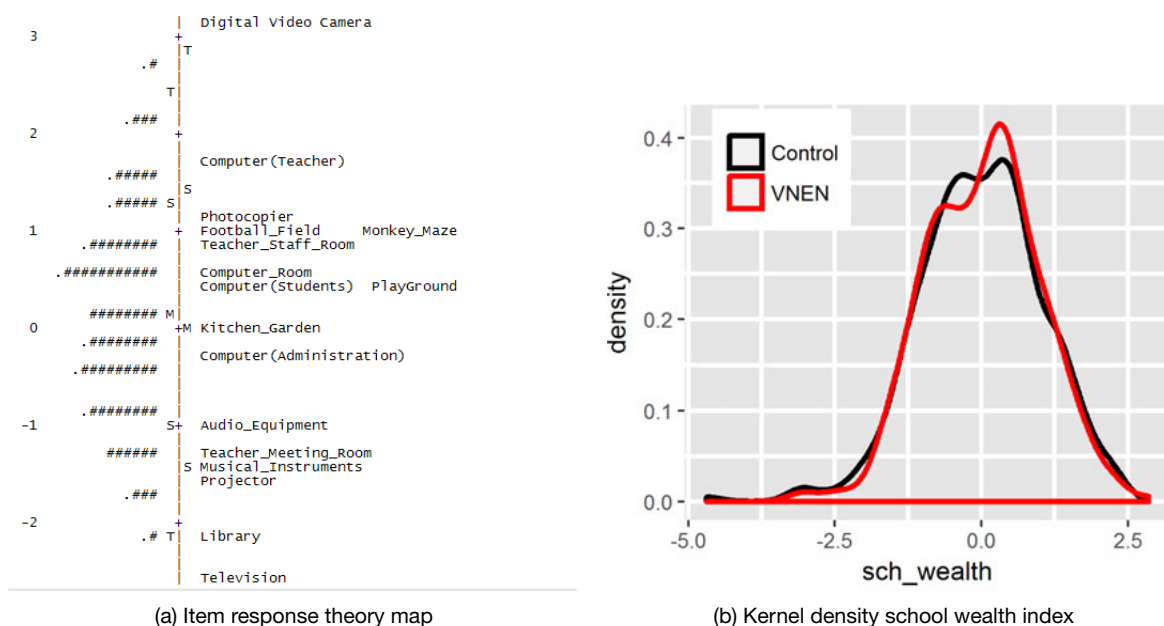
The average school sizes were about 240 students in Priority 1 provinces and 300 students in Priority 2 & 3 provinces. This works out to an average of about 50 to 60 students in each Grade. Table 2.3 shows the enrollment by grade, together with female enrollment and ethnic minority enrollment. This table indicates the

**Table 2.3** Distribution by Gender and Ethnic Minority, 2013

Priority		Control Group				VNEN Group			
		Total	Female	Ethnic	E. Fem.	Total	Female	Ethnic	E. Fem.
Priority 1	Grade 1	57	27	16	7	56	27	21	10
	Grade 2	55	26	15	7	52	25	19	9
	Grade 3	58	28	17	8	54	26	21	10
	Grade 4	61	29	19	9	54	26	22	10
	Grade 5	62	30	18	9	55	27	21	10
Priority 2 & 3	Grade 1	72	35	11	6	68	33	10	5
	Grade 2	66	32	11	5	64	31	10	5
	Grade 3	64	30	10	5	65	31	9	4
	Grade 4	63	31	10	5	65	31	9	5
	Grade 5	66	32	10	5	66	33	9	4

Source: VNEN Impact Evaluation study primary data, Authors calculations.

**Figure 2.12** School Wealth Index, 2013



Source: VNEN Impact Evaluation study primary data, Authors calculations.

gender parity that exists in Vietnamese primary schools in poor as well as less poor provinces. There do appear to be marginally less than 50% female students, but it is not possible to deduce a statistically significant effect without accurate information about gender and age population figures. The table clearly shows the absence of a major problem of repetition and dropout during primary school. The smaller number of students in Grade 1 as compared to Grade 5 in Priority 1 schools likely reflects a demographic transition with declining fertility. The lower panel does not reflect a similar trend likely due to in-migration to the wealthier, relatively more urban provinces.

We also generated an index of school wealth based on the facilities that the school possessed. Vietnam’s schools are well equipped in a comparative international context (Parandekar and Sedmik, 2016). Apart from textbooks and learning aids that are available for all children, quite a number of schools also possess electronic equipment such as projectors. A school wealth index was constructed that shows parity between VNEN and control group schools (Figure 2.12). Figure 2.12 (a) shows the Item Response Theory map that is useful to understanding the school

wealth index. Items like a digital video camera and computer for teachers were rare, with photocopiers and sports equipment a bit less rare. Almost all schools had libraries and at least one television set.

Finally, to complete the examination of school facilities, Table 2.4 presents some comparative numbers. With the primarily rural or semi-urban schools that constituted the sample, one can see that the schools have a land area averaging between 6,000 to 8,000 square meters, with many trees—the 25th percentile mark had 20 trees. Students had about 2 square meters of space in the classroom, which is very important for VNEN schools because of the emphasis on movement and flexibility of seating opportunities.

## 2.3 Estimation of Program Impact

### 2.3.1 Traditional Mindset about Schooling

In order for the VNEN reform or the teaching philosophy that VNEN represents to be successful, principals need to be convinced about the



**Table 2.4** School Facilities Compared

	Priority 1						Priority 2 & 3					
	Control Group Quantile			VNEN Group Quantile			Control Group Quantile			VNEN Group Quantile		
	0.25	0.50	0.75	0.25	0.50	0.75	0.25	0.50	0.75	0.25	0.50	0.75
School wealth	-0.88	0.06	0.66	-0.88	0.06	0.36	-0.56	0.06	0.98	-0.56	0.36	0.98
Distance	6.00	10.00	17.00	5.00	10.00	20.00	4.00	9.00	15.00	3.75	7.50	13.50
Land area	4,000	5,800	9,080	3,906	6,219	8,399	4,200	6,336	10,005	4,937	7,587	10,049
Number of trees	20	35	60	21	40	90	20	38	65	24	41	84
Number of students	137	243	372	124	237	372	198	281	398	239	329	505
Area per student	1.69	2.38	4.35	1.72	2.56	4.35	1.52	2.04	3.23	1.67	2.13	2.96
Class student ratio	0.04	0.06	0.10	0.04	0.06	0.10	0.04	0.05	0.06	0.03	0.04	0.06
Number of teachers	11	16	23	12	17	23	14	19	24	15	18	26
Teacher student ratio	0.05	0.07	0.09	0.05	0.07	0.10	0.05	0.06	0.07	0.05	0.06	0.07

Source: VNEN Impact Evaluation study primary data, Authors calculations.

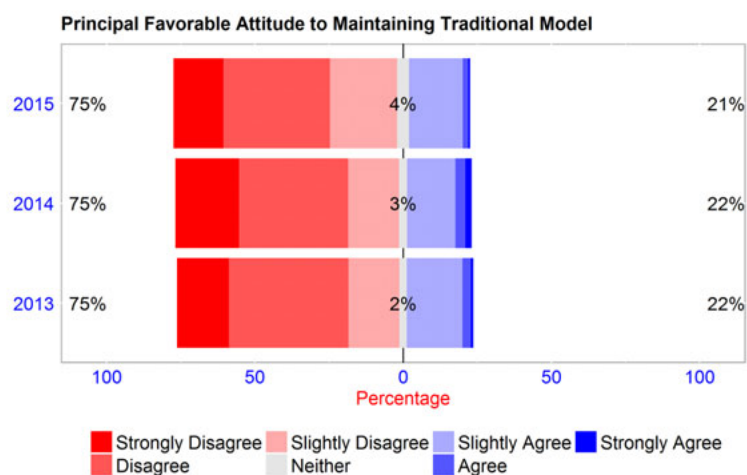
need for change. Rogers, 2010 begins his book with a timeless quotation from the year 1513 attributed to Machiavelli 'Whenever his enemies have the ability to attack the innovator, they do so with the passion of partisans, while the others defend him sluggishly, so that the innovator and his party alike are vulnerable'. Ellsworth, 2000 and Hargreaves, 2007 provide book length treatments reviewing the copious literature on change in education or perhaps on why there is so little change in education. It is clear from this literature that reform will not take place unless a majority of the key stakeholders are in favor of change to begin with, or unless a majority become persuaded about the benefit of change.

Changing the mindset about traditional education may seem to be a key intermediate goal of the VNEN program. As a way to determine the success in achieving this goal, in each year of the survey, principals were asked to agree or a disagree on a seven-point Likert scale to the

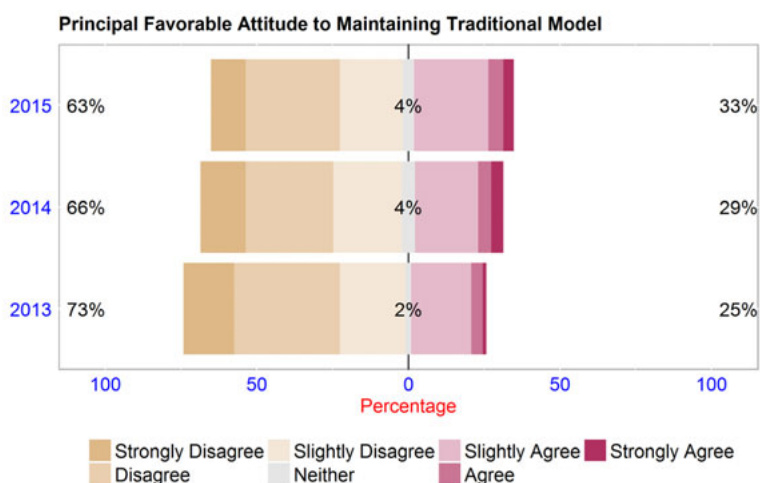
statement that 'The traditional teaching model is working fine. There is no need for change.' The answers are reproduced in the panel of Figure 2.13. The percentage figures along the left-hand side of each element of the panel indicate the total percentage who disagreed with the statement; the figures on the right-hand side indicate the percentage who agreed with the statement. The number in the middle shows the percentage of people who were neutral.

Figure 2.13 shows that the majority of principals disagree with the statement, which implies that they are in favor of change. The majority is higher (75%) for VNEN schools, which is healthy considering that VNEN school principals have actual experience with the model so their continued rejection of the traditional model augurs well for the future of educational reform in Vietnam. However, the right-hand panel of Figure 2.13 may also indicate a cause for concern. The percentage of control group principals who disagree

**Figure 2.13** Principal Attitude about Traditional Model



(a) VNEN principals



(b) Control group principals

Source: VNEN Impact Evaluation study primary data, Authors calculations.

with the statement can be seen to be declining each year. Conversely, 25% of control group Principals who agreed in 2013 that the traditional model was working fine and there was no need for change increased to 33% by 2015. A majority still want change, but the trend may be a cause for concern.

### 2.3.2 Principal’s Self-Belief about Influence

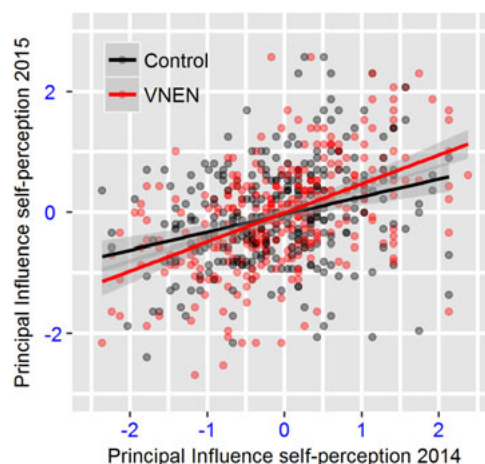
A second important impact that we measured for principals concerns their own self-belief about

how influential they are in affecting change. Each year of the survey, principals were asked to rate how influential they were on each set of decisions, reproduced in Figure 2.14 (a). The responses were used to generate a Rasch index for influence, following the same practice as for the other composite indices used in this study. An interesting phenomenon can be observed from Figure 2.14 (b), which shows the influence self-rating for 2015 as compared to 2014. The index is defined so as to have a zero mean and a standard deviation of 1. Figure 2.14 (b) shows that the slope is higher for VNEN school principals.

**Figure 2.14** Principal Self-Perception of Influence

a. Initial assignment of teachers to a particular school
b. Regular rotation of teachers to a particular school
c. Dismissing teachers
d. Evaluating teacher performance
e. Setting teacher salaries
f. Selecting teachers for training
g. Choosing teaching methods to use
h. Developing teaching materials
i. Adapting curriculum to local conditions
j. Determining working hours of teachers
k. Determining class size
l. Deciding admission for students
m. Setting standards for student promotion
n. Evaluating students' periodical performance
o. Shutting down a school
p. Adding new grades to or removing grades from existing school
q. Setting the amount of financial contribution from parents/students
r. Deciding which students are exempted from financial contribution
s. Deciding on the construction of school facilities
t. Maintaining and rehabilitating facilities
u. Deciding on how to spend school funds
v. Scheduling meetings with community

(a) List of decisions



(b) Movement from 2014 to 2015

Source: VNEN Impact Evaluation study primary data, Authors calculations.

**Table 2.5** Impact of VNEN on Principal Self-Perception of Influence

	Dependent Variable msr_p202_15	
	(Control Group)	(VNEN Group)
msr_p202_14	0.248*** (0.047)	0.522*** (0.056)
School wealth	0.138*** (0.051)	-0.007 (0.059)
Percentage scholarships	0.117 (0.238)	-0.126 (0.297)
Distance	0.0001 (0.005)	0.006 (0.005)
Total students	0.0001 (0.0002)	0.0001 (0.0003)
Constant	-0.082 (0.110)	-0.068 (0.134)
Observations	322	325
R <sup>2</sup>	0.115	0.217
Adjusted R <sup>2</sup>	0.101	0.205
Residual std. error	0.859 (df = 316)	0.972 (df = 319)
F statistic	8.230*** (df = 5; 316)	17.728*** (df = 5; 319)

Note: \*p < 0.1; \*\*p < 0.05; \*\*\*p < 0.01

Source: VNEN Impact Evaluation study primary data, Authors calculations.

Table 2.5 shows that the coefficient of the principal's measure of influence in 2014 when regressed on the principal's measure of influence for 2015 as the dependent variable was twice as high for VNEN schools as compared to control group schools. The regressions included four other control variables—the school wealth index, the percentage of students on scholarships, the distance of the school from the district center, and the total number of students at the school. None of the control variables were statistically significant for VNEN schools. The school wealth index was statistically significant for control group schools, with higher levels of school wealth indicating higher levels of influence ratings for principals. The higher slope for VNEN

schools might indicate an important phenomenon related to the reform. In diverse social contexts, change is held back because agents are not aware themselves of the power they wield, given existing norms and regulations, to bring about change. When change is implemented without first changing the regulations, people sometimes find to their own surprise that transformation has always been feasible, and the magnitude of the transformation may be even greater when formal regulations are introduced. It is possible that Figure 2.14 and Table 2.5 provide a glimpse into the unfolding of this process. When the system wide fundamental and comprehensive education reform is rolled out, at least some principals may be more than ready.

# TAKEAWAYS:

## School Leadership

This chapter examined the VNEN program from the point of view of the school principal. The chapter provided evidence in three parts—the implementation of the VNEN program; the contextual factors regarding the school principal and the school itself; and finally the impact of the program in terms of the change in the principals' mindsets and in their self-belief.

### SCHOOL AUTONOMY

- There is a link between program implementation and school autonomy. There was a higher level of autonomy in VNEN schools as evidenced by more frequent instances of local involvement in decision making. Key areas where local school communities exercised autonomy included convocation of community meetings, student evaluation, and rehabilitation of school facilities.

### IMPLEMENTATION

- There was a variation in the implementation of the VNEN program across schools from the perspective of the school principal. With regard to pedagogical activities, there was a significant jump in implementation between 2013 and 2014 and a smaller increase from 2014 to 2015. One area that appears to be disappointing is the low level of community engagement in VNEN schools—in quite a few VNEN schools, there was hardly any engagement with parents.

### CONTEXTUAL EQUALITY

- Principals show variation with regard to their value orientation, including the feature defined as Confucian heritage values, based on beliefs

regarding being rich and successful, doing good for society, behaving properly, and following tradition. This study has provided constructs regarding principal political skills and innovativeness. All these measures show an equal distribution across VNEN and control group schools, supporting the assertion that the samples were balanced well and can be safely used for drawing causal inference.

### TRADITIONAL MINDSET

- Principals, the frontline leaders of the reform, have a strong belief about the need to reform the traditional model, and this belief is positively related with their actual program experience. When we asked principals about their opinion regarding the statement that “the traditional model is working fine, there is no need for change,” about 75% of VNEN principals disagreed with the statement throughout the three years of the survey. 73% of control group principals were of the same opinion, but this group has declined to 63% in two years. So those who experienced VNEN for real continue to believe in the need for reform; those who may only have hearsay knowledge about VNEN may develop a stronger belief in the status quo of the traditional model.

.....  
Principals who are successful in implementing the reform are among the most important change agents for the future success of the reform—the change in their mindset and their ability to influence others has been a key factor of the reform effort.



## Endnotes

1. Cheng, 1994; Hallinger and Heck, 1998; Teddlie and Reynolds, 2000; Creemers et al., 2003.
2. Marzano, Waters, and McNulty, 2005; Oyetunji, 2006; Beatriz, Deborah, and Hunter, 2008; Parandekar, Oliveira, and Amorim, 2008; Hallinger and Huber, 2012; Parandekar, 2014.
3. Inglehart, Basanez, and Moreno, 1998; Dakhli and De Clercq, 2004; Dalton and Ong, 2005; Minkov and Hofstede, 2010.
4. Pfeffer, 1981; Ferris, Treadway, et al., 2005; Ferris, Davidson, and Perrewe, 2005. We use the standard 18 item 'political skills inventory' (PSI). For applications in education and to principal leadership, see Douglas and Ammeter, 2004; Brosky, 2011; and Fidan and Balci, 2016.
5. Hurt, Joseph, and Cook, 1977.

# Teacher Beliefs, Attitudes, and Training

This chapter presents findings in three sections. In this first section, we provide a profile of teachers to answer the question ‘who are the teachers?’. This includes demographics, salary and satisfaction levels of the teachers and their training. The next section deals with teachers’ beliefs. It covers beliefs regarding educational objectives and pedagogy as well as measures of teacher innovativeness and values. Finally a third section provides evidence of the program’s impact on teachers, examining their self-efficacy and perceptions about influence in decision making.

## 3.1 Who Are the Teachers? A Profile

### 3.1.1 Demographics

Teachers and students make up the two sides of the pedagogical equation, and the effectiveness of any reform depends critically on the enthusiasm and uptake from teachers. A comprehensive reform like VNEN is very demanding

of teachers—it seeks for teachers to behave in a fundamentally different way. With decades and more of cultural inertia at their back, VNEN seeks to transform teachers from being all powerful providers of knowledge to become facilitators of inquiry. For such a transformation to be possible, teachers need to be able to transform their very beliefs about education and learn to teach in a new way. Our investigation begins by exploring the demographic profile of teachers.

Table 3.1 provides a summary demographic profile. A word is in order about the sample of teachers. The sampled schools had a median of 18 teachers, and in the first year of the survey, a random sample of teachers were surveyed. With 20 students also being selected randomly for testing in the first year and only half of those surveyed through a questionnaire, only one-third of the students could be matched to the teacher who taught them in that year. The teacher sampling strategy was revised the following year to be able to match teachers to students. Though

**Table 3.1** Profile of Surveyed Teachers

	Priority 1			Priority 2 & 3		
	2013	2014	2015	2013	2014	2015
Female gender	82%	78%	77%	85%	79%	80%
Age in years	39.8	39.2	40.2	40.3	39.0	41.12
Percentage ethnic minority	24%	22%	22%	6%	5%	4%
Teacher home possessions index	64.75	65.88	67.76	68.78	70.10	71.55
Percentage with college/university degree	47%	57%	64%	47%	57%	62%
Years of teaching experience	17.6	17.0	18.0	18.3	16.8	18.9
Tenure at school	11.3	10.5	11.7	12.3	10.7	12.2

Source: VNEN Impact Evaluation study primary data, Authors calculations.

some schools in the sample do have the same teacher who move up the grades as the students are promoted, typically the teacher is different. As a result, though there are some teachers who were surveyed in each of the three years, the sample composition is different in each year. This is the reason that Table 3.1 presents demographic data separately for the three years.

Roughly 80% of the teachers are female, with an average age of 40 years and teaching experience of about 17 years. Slightly less than 60% of the teachers have undergraduate degrees and the average tenure at the current school is about 11 years. Of the teachers in Priority 1 provinces, 20% are from ethnic minorities, and the proportion of ethnic minority teachers is much smaller at about 5% in Priority 2 & 3 provinces. Nearly 33% of the students in Priority 1 provinces and about 13% of the students in Priority 2 & 3 provinces are from ethnic minorities. Considering the lag in educational attainment of ethnic minorities at higher education levels, the proportion of ethnic minority teachers appears to be fairly healthy. The teacher home possession index comes from a count of 22 home possessions.

### 3.1.2 Job Satisfaction and Salary

Teachers surveyed in the study received a monthly salary averaging Vietnamese dong (VND) 3.46 million in 2013, going up to VND 3.64 million in 2015. The standard deviation is about VND

0.75 million. There are no statistically significant differences across control and VNEN groups. Priority 1 province salaries are lower by about VND 100,000 per month, likely reflecting differences in cost of living. Using PPP exchange rate of VND 7,600 per USD (World Development Indicators, 2015), the average monthly salary was slightly less than US\$500 per month, about the same as the per capita income of Vietnam. The salary figures are rough generalizations, but they convey the fact that the surveyed teachers are not poor nor are they rich.

Teachers were asked about their level of satisfaction on a five-point Likert scale, ranging from 'very satisfied' to 'very dissatisfied', on five work related dimensions: salary; appreciation from the parents of the students they serve; social status in the community; work environment; and the student study results. A Rasch index of satisfaction was generated from the responses and Table 3.2 presents the item measures compared for the control and VNEN groups for the year 2015. The results are reproduced in Figure 3.1 for comparing satisfaction levels across VNEN and control groups.

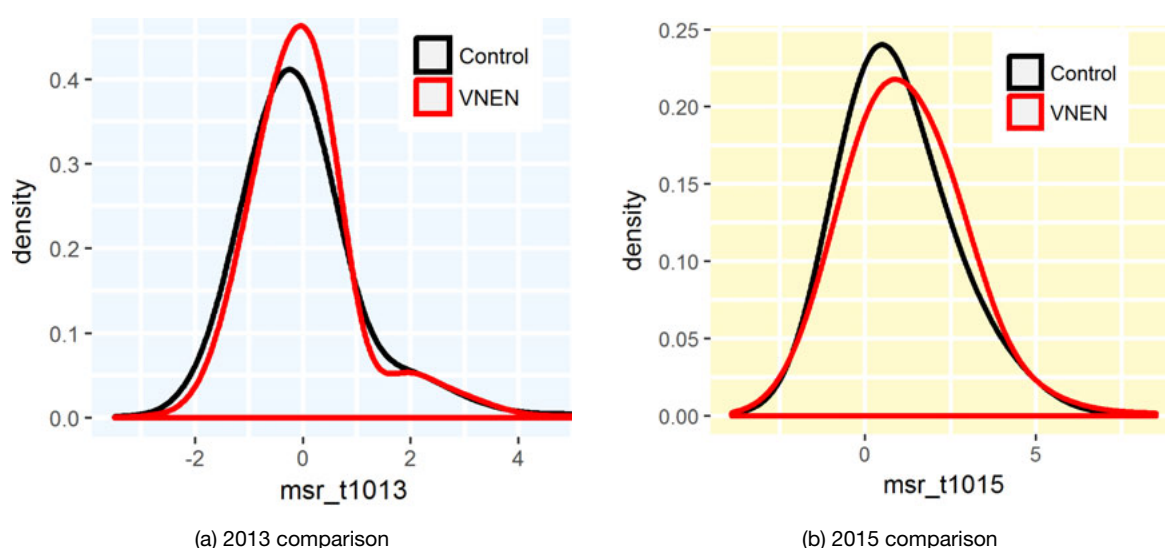
There was no statistically significant difference between the two groups in 2013, but the 2015 sample shows a small statistically significant advantage for VNEN teachers. By construction the index has a mean of zero and standard deviation of 1; the mean values for 2013 and 2015

**Table 3.2** Satisfaction of Teachers, 2015

Control Group		VNEN Group	
Item	Index Measure	Item	Index Measure
a. Salary	2.05	a. Salary	1.91
e. Student study result	-0.26	e. Student study result	0.16
c. Social or community status	-0.58	c. Social or community status	-0.42
d. Work environment	-0.64	b. Parents appreciation	-0.78
b. Parent appreciation	-1.09	d. Work environment	-0.88

Source: VNEN Impact Evaluation study primary data, Authors calculations.

**Figure 3.1** VNEN Teachers with Higher Satisfaction



Source: VNEN Impact Evaluation study primary data, Authors calculations.

for the two groups are  $-0.07$  and  $+0.07$ . Table 3.2 shows that the ‘most difficult’ satisfaction was for salary and the ‘least difficult’ satisfaction was for parent appreciation and work environment. An interesting result is that the satisfaction measure is easier or higher for the work environment for the VNEN group while parent appreciation is higher for the control group.

Another aspect related to compensation and satisfaction is the practice in Vietnam of providing

recognition of ‘excellent teacher’ awards at school, provincial, and national levels. Table 3.3 shows a progression with passing years toward awards at higher levels—between 2013 and 2015 there is a decline in the first column from 332 to 128 who did not receive any award and an increase from 121 to 281 for provincial level awards. At the provincial and national levels, more VNEN teachers got awards. Even in 2013, the first survey year at which time VNEN had been in implementation for 1 year, 9% of VNEN

**Table 3.3** Excellent Teacher Awards

Year	Group	Total	No Award	School Level	District Level	Province Level	National Level
2013	All	1770	332	567	748	121	2
	Control	100%	20.7%	32.3%	41.9%	5.0%	—
	VNEN	100%	16.9%	31.8%	42.6%	8.6%	—
2014	All	1847	255	515	873	194	10
	Control	100%	14.2%	28.3%	48.6%	8.3%	—
	VNEN	100%	13.4%	27.5%	45.9%	12.7%	—
2015	All	1768	128	410	937	281	12
	Control	100%	7.5%	25.5%	53.4%	13.1%	—
	VNEN	100%	7.0%	20.9%	52.6%	18.7%	1%

Source: VNEN Impact Evaluation study primary data, Authors calculations.

teachers received provincial level awards as compared to 5% for control group teachers. By 2015, 19% of VNEN teachers were provincial award winners as compared to 13% of control group teachers. Eight out of twelve national award winners in 2015 were from the VNEN group. Awards can be very useful as rewards for good performance to motivate further effort from all teachers, as well as to provide recognition of efforts already made. Further research needs to capture more information about the role of awards in schools in Vietnam.

### 3.1.3 Training

Training of teachers to be able to teach using the VNEN pedagogical method was a crucial input of the program. Given the fact that the VNEN pedagogical model represented a dramatic change for most teachers, providing adequate training in the limited time period available was a big challenge. All primary school teachers in Vietnam receive two weeks of summer training, which constituted the initial VNEN training for most teachers. In order to prevent a loss of fidelity that comes from the usual ‘training of trainers’ model, teachers were involved at all levels of training. The prior small-scale VNEN pilot in six provinces (see section 1.1.2) had generated the benefit of having a few teachers who already had experience with the EN methodology. The most skilled and motivated among these teachers were included as part of the group of trainers. Training was held in overlapping cascades, and was required to reach tens of thousands of teachers within a few weeks in the summer.

Three aspects of the training have an important bearing on the program impact: (i) the training followed the philosophy that for an effective training program the training event itself is only a small proportion of time.<sup>1</sup> Accordingly, the teachers received all training materials at least 2 weeks before the training and came to the training prepared; (ii) the training event consisted of practical implementation of VNEN classrooms rather than hearing lectures about VNEN—and trainees discussed in a facilitated way the behavior they were meant to replicate in classrooms; and (iii) the focus on teachers themselves as trainers meant that some of the teachers got multiple opportunities to take part in the training within the school year.

While it was not mandatory for the schools that were not implementing the VNEN model to attend VNEN training—presumably the provincial education department would organize their regular annual training—it appears that many of the control group teachers actually attended the VNEN training. We asked all surveyed teachers each year whether or not they had received any VNEN training. All teachers from the VNEN group answered in the affirmative. The percentage of control group teachers who answered ‘yes’ went up from 37% in 2013 to 71% in 2015.

The findings shown in Table 3.4 have an important implication for this impact evaluation study. It shows a near parity in the provision of training between VNEN and control groups, which by itself is not surprising as two weeks or roughly 10 days of summer training is mandated for all teachers.

**Table 3.4** Teacher Training Received, 2012 to 2015

Year	Control Group				VNEN Group			
	2012	2013	2014	2015	2012	2013	2014	2015
Number of days	8.93	9.80	8.10	9.42	9.44	10.9	9.35	8.69
Number of instances*	1.18	1.26	1.35	1.36	1.11	1.39	1.32	1.31

\* Instances could be national, provincial, and school levels.

Source: VNEN Impact Evaluation study primary data, Authors calculations.



The variation in the table from 10 days likely reflects the practices at different training events with regard to the use of the fifth day in each week, which may have been used for socializing, sometimes explicitly recognized as part of the training. However, the high proportion of teachers from control group schools who took VNEN training indicates that even control group teachers are likely to have developed a good familiarity with VNEN teaching and learning methods. This would have helped those schools who were not program schools to become 'voluntary' VNEN schools. But it would also help teachers adopt part of the VNEN practices that they wanted to adopt even though their school may not have institutionally adopted the VNEN model.

As part of the training philosophy of VNEN, in addition to the off-site two week training at the beginning of the school year, the program also included provisions for sustained professional development through the year.

Table 3.5 provides information regarding a teacher's exposure to this form of professional development. The table indicates that teachers in VNEN schools reported taking part in an

average of three to four school cluster meetings per year. This number should have been closer to 15 or 16 as they were supposed to be held once every two weeks. Formally scheduled classroom observations and discussions appear to also have taken place in the control group schools. The last row of Table 3.5 shows that VNEN school teachers did consult more often with teachers from other schools.

### 3.1.4 Time Use

Teachers from VNEN schools appear to have worked about one hour more per week than teachers from control group schools, with the extra time mainly coming from time in the classroom. There is a noticeable jump in average classroom hours from 2014 to 2015 for both control group and VNEN group schools. It is likely that this difference reflects the parallel reform of increasing classroom hours in schools toward full day schooling. Typically schools would increase the number of classes for one or two days of the week, including additional afternoon classes. The number of days with afternoon classes would subsequently be increased to approach full day schooling.

**Table 3.5** Teacher Interaction and Cluster Training

Year	Control Group			VNEN Group		
	2012	2013	2014	2012	2013	2014
Principal classroom observation of teacher	5.96	4.99	4.97	6.22	6.17	5.35
Same grade teacher observation of teacher	13.99	12.35	—	13.43	13.81	—
Same school teacher observation of teacher	8.82	8.62	—	9.08	9.90	—
Biweekly cluster training	0.11	0.30	0.44	2.53	3.60	2.97
<b>Option chosen when faced with difficulty in teaching</b>						
Research teaching guide book	68%	61%	79%	74%	68%	81%
Exchange views with principal	40%	34%	45%	61%	49%	59%
Exchange views with teachers at same school	89%	85%	94%	92%	93%	96%
Search for information on the internet	57%	54%	74%	62%	59%	75%
Exchange views with teacher in other school	40%	37%	48%	56%	47%	55%

Source: VNEN Impact Evaluation study primary data, Authors calculations.

**Table 3.6** Teacher Time Use, 2012 to 2015

Year	Control Group				VNEN Group			
	Class Prep	Classroom	Other Work	Total Working	Class Prep	Classroom	Other Work	Total Working
2013	12.65	24.25	3.11	40.01	11.42	27.37	2.60	41.38
2014	13.15	23.96	3.41	40.51	12.78	26.31	3.31	42.40
2015	13.63	30.03	4.55	48.21	12.79	31.96	4.23	48.98

Source: VNEN Impact Evaluation study primary data, Authors calculations.

## 3.2 Teachers' Beliefs

Teachers' behaviors regarding educational reform are guided by their beliefs and their preparedness for reform. We explored three aspects—the beliefs of teachers regarding educational objectives; their beliefs regarding the importance of certain pedagogical activities; and a general measure of innovativeness.

### 3.2.1 Beliefs Regarding Educational Objectives

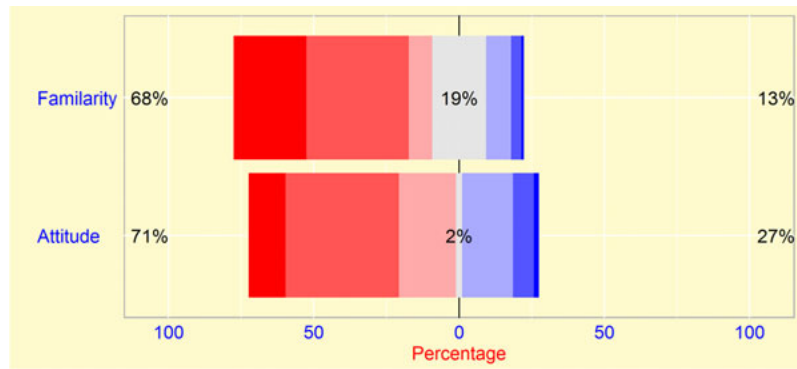
We examined the change across the three years of the questions asked of school principals about (i) the belief in the need for change and (ii) the level of familiarity with the VNEN model. Teachers were now asked their opinion on these questions. To the extent that teachers believe that the traditional model is working fine, without any need for changes, the less will there be ownership of the reform. Figure 3.2 shows the responses to these two Likert scaled questions. In 2013, about 70% of both control group and VNEN group teachers disagreed with the statement that the traditional model was working fine. However, there is a possibly problematic trend with regard to the attitude from control group teachers.

Figure 3.2 indicates that the percentage of teachers from control group schools who disagreed (red areas of graph) declined from 71% in 2013 to 62% in 2014 and further to 56% in 2015. The percentage of control group teachers who were neutral jumped from 2% in 2013 to 14% in 2014

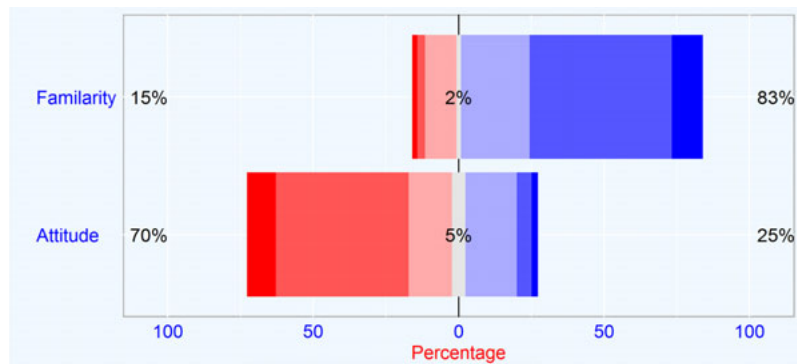
and then slightly more to 16% in 2015. Interestingly, the percentage of teachers who agreed with the traditional model remained about the same. For some reason there was a lowering of the perceived need for change among control group teachers. Among VNEN group teachers (right-hand side panel of Figure 3.2), a converse pattern is observed—teachers who had agreed that the traditional model was good and there was no need for change declined from 25% in 2013 to 19% in 2014 and 15% in 2015. It is possible that the control group teachers were influenced by a strong move on the part of traditional minded opinion leaders in Vietnam to criticize the reform. The VNEN group teachers may have had a closer knowledge from practical experience of the VNEN model and hence understood and appreciated the need for change better. Further research would be required to have a definitive conclusion about the reasons for the possible trend identified in this study.

Figure 3.2 also shows the responses from the question of familiarity with the VNEN model. The specific statement was "I am totally familiar with the VNEN model." The question indicates that the first year's implementation of VNEN delivered the biggest impact on the familiarity, with 83% of VNEN group teachers agreeing with the statement. The percentage strongly agreeing is shown in dark blue, and it increased for familiarity for VNEN teachers from 11% in 2013 to 17% in 2014, and was 16% in 2015. The phenomenon of a sizeable impact in the first year of the study (the second year of the program) and a stabilization

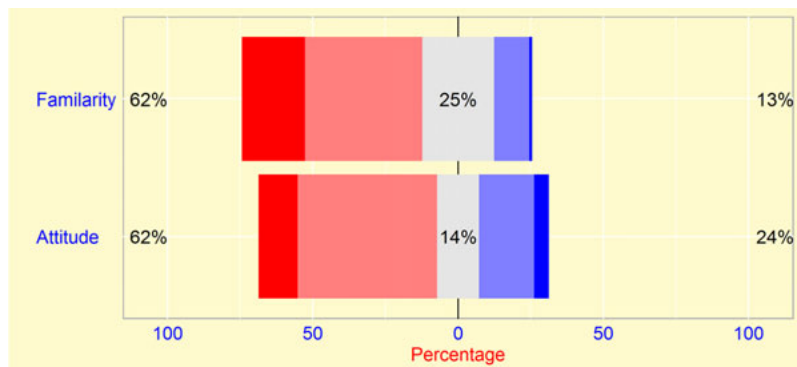
**Figure 3.2** Attitude toward Traditional Model and Familiarity with VNEN



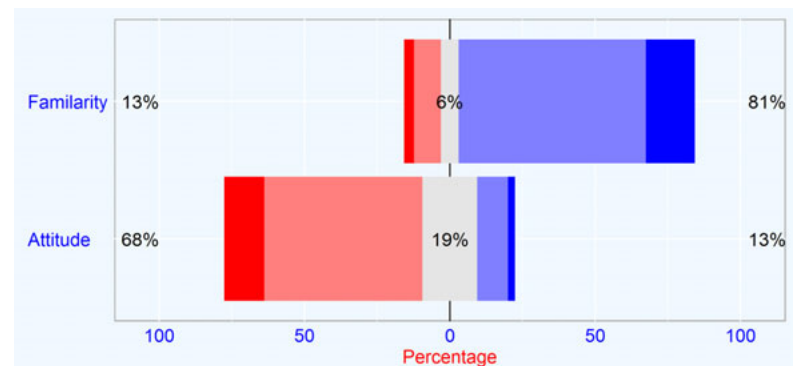
(a) 2013: Control group



(b) 2013: VNEN group



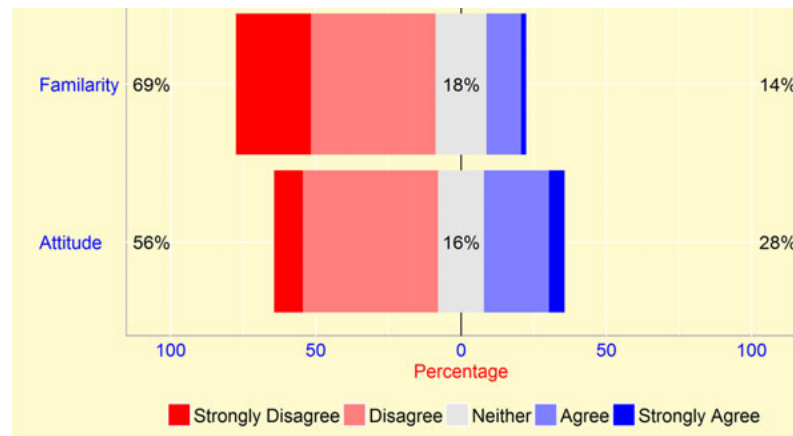
(c) 2014: Control group



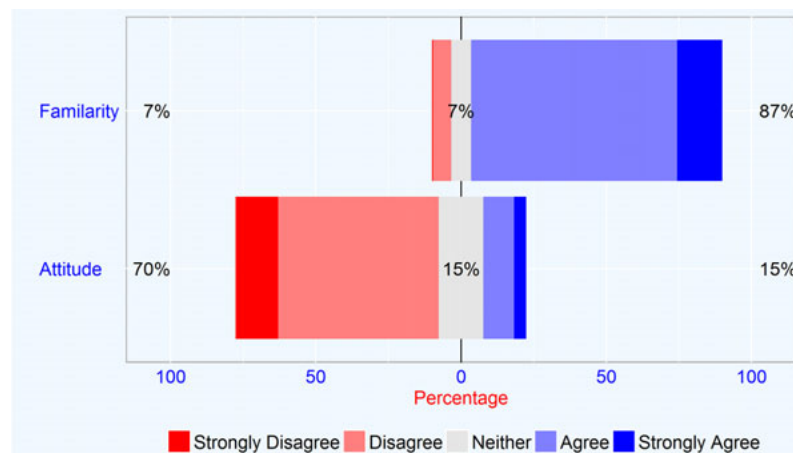
(d) 2014: VNEN group

(continued)

**Figure 3.2** Attitude toward Traditional Model and Familiarity with VNEN—*Continued*



(e) 2015: Control group



(f) 2015: VNEN group

Source: VNEN Impact Evaluation study primary data, Authors calculations.

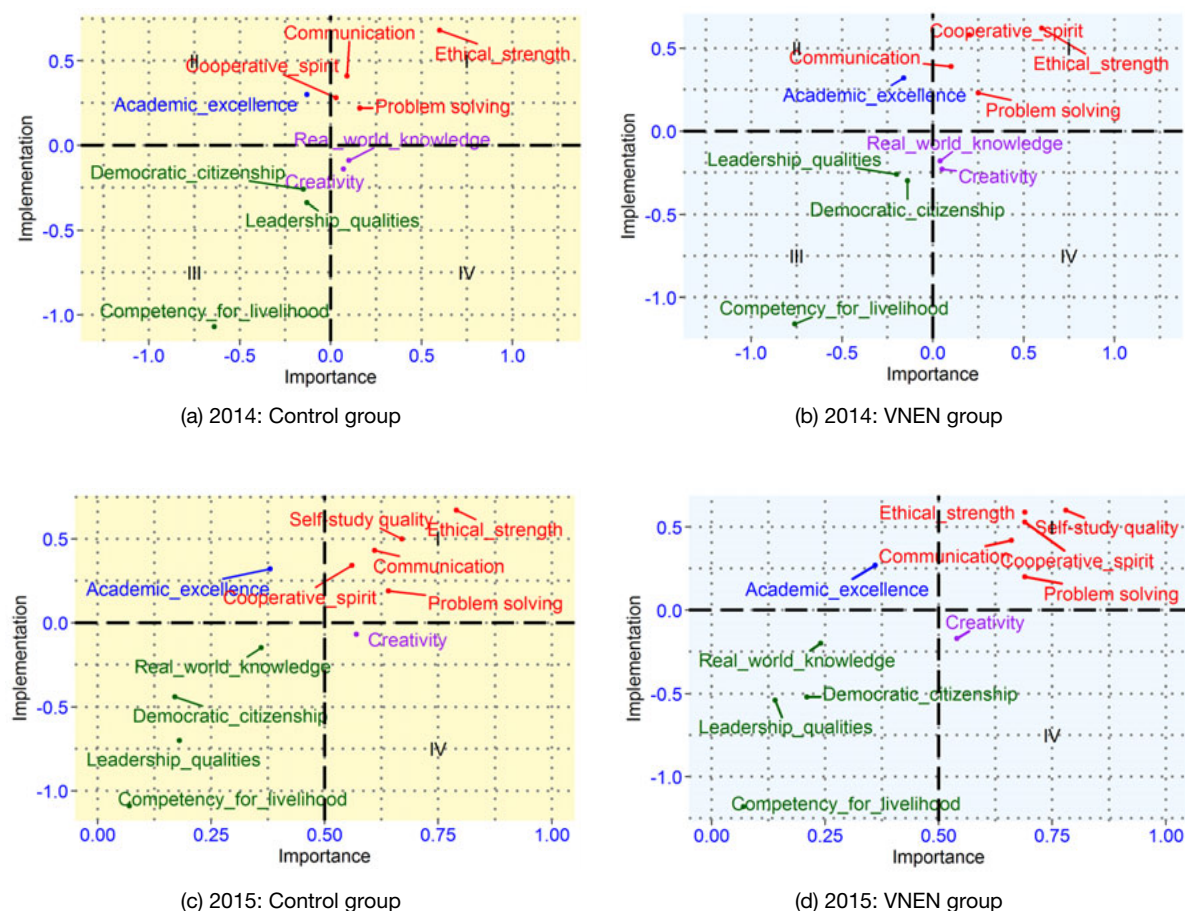
in the following year is a pattern observed often in this study.

As teacher beliefs are such a vital part of an educational reform, we also sought to understand teacher beliefs about educational objectives more deeply by asking them to rate or rank items in a set of educational objectives. We asked the teachers also to rate or rank the same items in terms of their implementation by the teachers. This so called ‘importance-performance analysis’ originates from literature in marketing.<sup>2</sup>

Figure 3.3 provides the results of the importance-performance analysis for the years 2014 and 2015 when the section was included in the teacher

survey. The interesting fact to be observed from Figure 3.3 is the consistency of results across both VNEN and control groups and across the two years. The elements in Quadrant I (text in red font) indicate that the most important educational objectives for both VNEN and control group teachers were the so-called non-cognitive skills of ethical strength, cooperative spirit, problem solving, and communication. When the objective of self-study quality was added in 2015, it also figures prominently in Quadrant I. There are hardly any entries in Quadrant IV (high importance and low implementation). Interestingly, the item ‘academic excellence’ figures in Quadrant II, surprisingly behind the non-cognitive skills in the horizontal importance dimension. The

**Figure 3.3** Educational Objectives and Implementation Compared



Source: VNEN Impact Evaluation study primary data, Authors calculations.

elements in Quadrant III are somewhat sobering with regard to understanding teachers' beliefs regarding educational objectives. "Competency for livelihood" is rated the lowest on importance and implementation. Similarly, real-world knowledge, and civic preparation with regard to democratic citizenship and leadership qualities do not appear high in teacher ranking. It should be noted that these are relative rankings; in absolute terms almost everything is rated by teachers as being important and being implemented. Further research is required to investigate if the findings are valid and accurate representations of teacher's beliefs and actions.

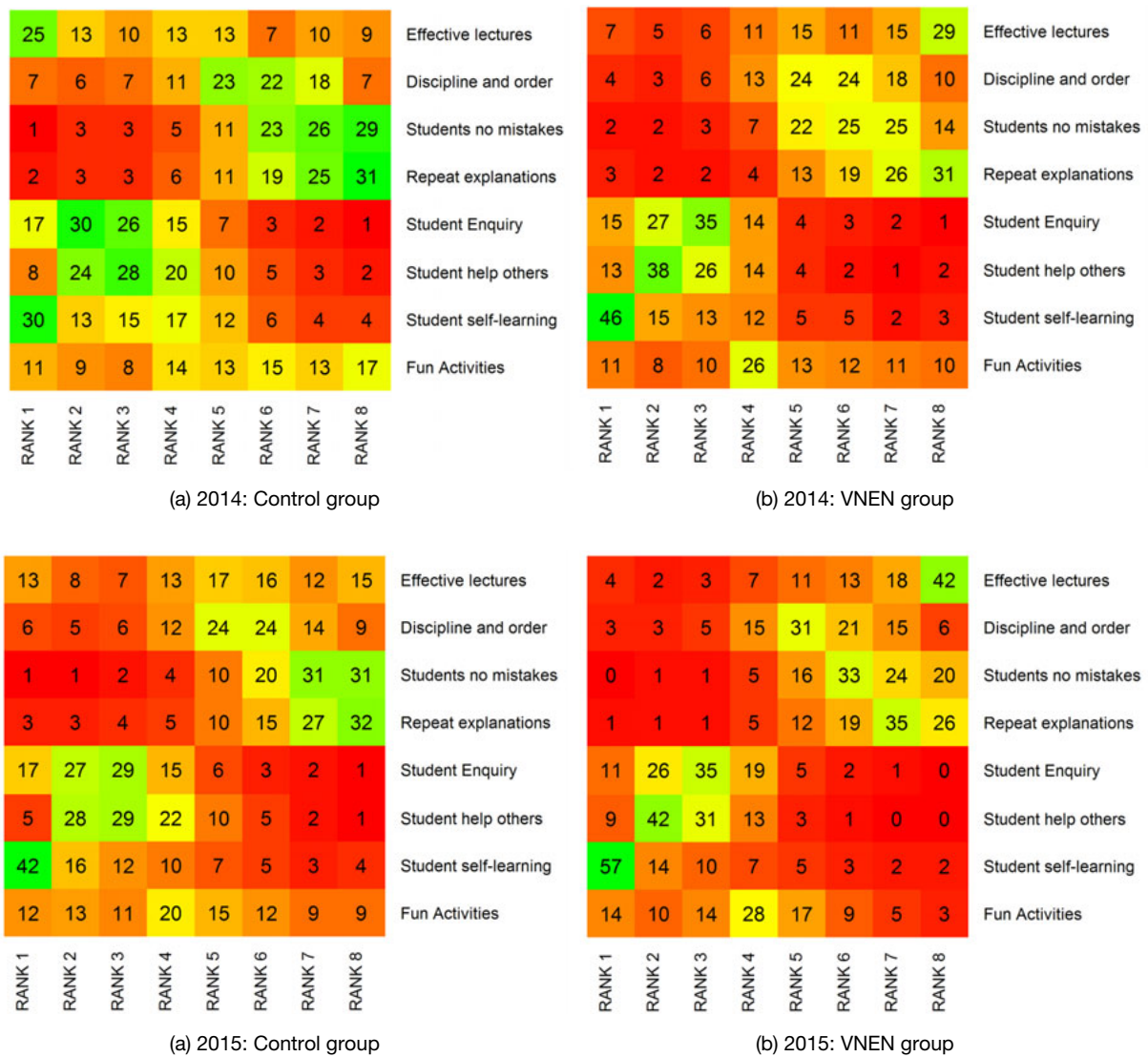
### 3.2.2 Beliefs Regarding Pedagogy

We look closely at beliefs of teachers regarding the importance of various pedagogical activities

or teaching methods in the classroom. In a variation of the importance-performance analysis, we also asked teachers about how challenging they found each pedagogical activity. In this instance we analyze the two dimensions separately. Figure 3.4 shows the results from teachers' rankings of the importance of eight pedagogical tasks. Each panel in Figure 3.4 is a 'heat map' that shows the percentage of teachers who provided the particular rank for each of the pedagogical activities arrayed vertically (Warnes et al., 2013). The cells color coded with red indicate the lowest percentages and green indicates the highest percentages, while yellow indicates percentages in the middle, for the particular distribution of each heat map. Each row and each column of this particular set of heat maps adds up to 100.



**Figure 3.4** Beliefs Regarding Importance of Pedagogical Activities



Source: VNEN Impact Evaluation study primary data, Authors calculations.

From the top left panel we can see that 25% of control group teachers in 2014 ranked ‘Effective lectures’ as the first ranked pedagogical objective. This is not the cell with the highest of the first ranked items—which is perhaps surprising for control group teachers—30% of teachers ranked ‘Student self-learning’ as first. Compared with the VNEN group teachers for 2014 (top right-hand panel)—only 7% of VNEN group teachers in 2014 ranked effective lectures as first in 2014. A much higher 46% of VNEN group teachers in

2014 ranked student self-learning as the top ranking pedagogical objective.

The eight pedagogical objectives are listed in a particular way. The first four are traditional pedagogical objectives, with titles shortened in the heat map for presentation clarity: give *effective lectures*; ensure *discipline* in the classroom; strive hard to make sure that *students do not make mistakes*; and *repeat explanations* to make sure that all students understand. The next four are pedagogical

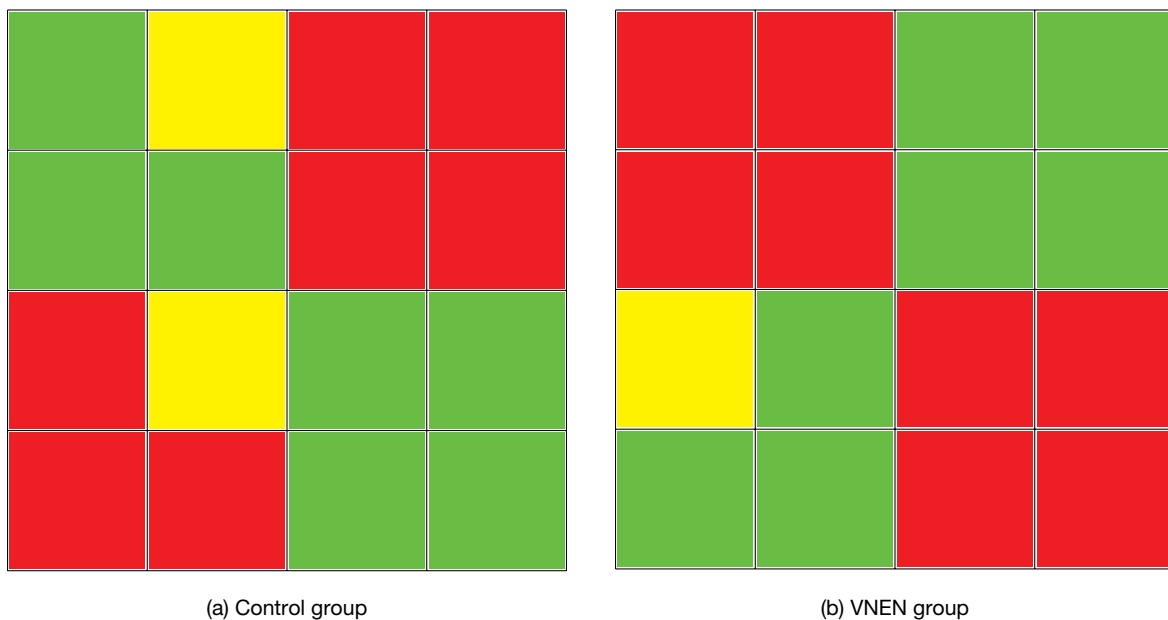
objectives attuned to the VNEN model: encourage *student enquiry*; provide chances for *students to help other students*; use more time for *student's self-learning* and less time for instructions; and *organize fun activities* for student learning.

With this configuration of objectives and the color coding used, the null hypothesis would be of a block-diagonal structure of a 64 celled matrix. The set of northwest cells would be expected to be green or green-yellow for the control group—representing the high ranks expected in this zone; conversely for the VNEN group teachers, we would expect the northwest section to be red—for example, few VNEN group teachers should be saying that students *not making mistakes* is a big priority. With the same logic, we would expect to see green and green-yellow for the control group in the southeast section of cells and the area being red for VNEN group teachers. In brief, the configuration expected would be as shown in Figure 3.5 for the control and VNEN groups—with green and yellow block diagonal structure, and some yellow cells here and there to indicate percentages not too high and not too low.

In fact, the right-hand panels of Figure 3.4 match the hypothetical pattern. Interestingly, even the left-hand panels for the control group show a pattern similar to the one expected for the VNEN group—low percentages in the northwest and southeast sections. With some exceptions that are quite interesting in their own right, the control group teachers in aspirational terms would appear to share the importance of VNEN model elements. The change from 2014 to 2015 in Figure 3.4, especially for the VNEN group, is noteworthy. One can see that ‘effective lectures’ ranked last by 29% of VNEN group teachers is marked last by 42% of VNEN teachers in 2015. A similar pattern is seen for high ranking of ‘student helps others’ from 2014 to 2015. It would appear that in terms of beliefs about the importance of pedagogical activities, the program was making good headway.

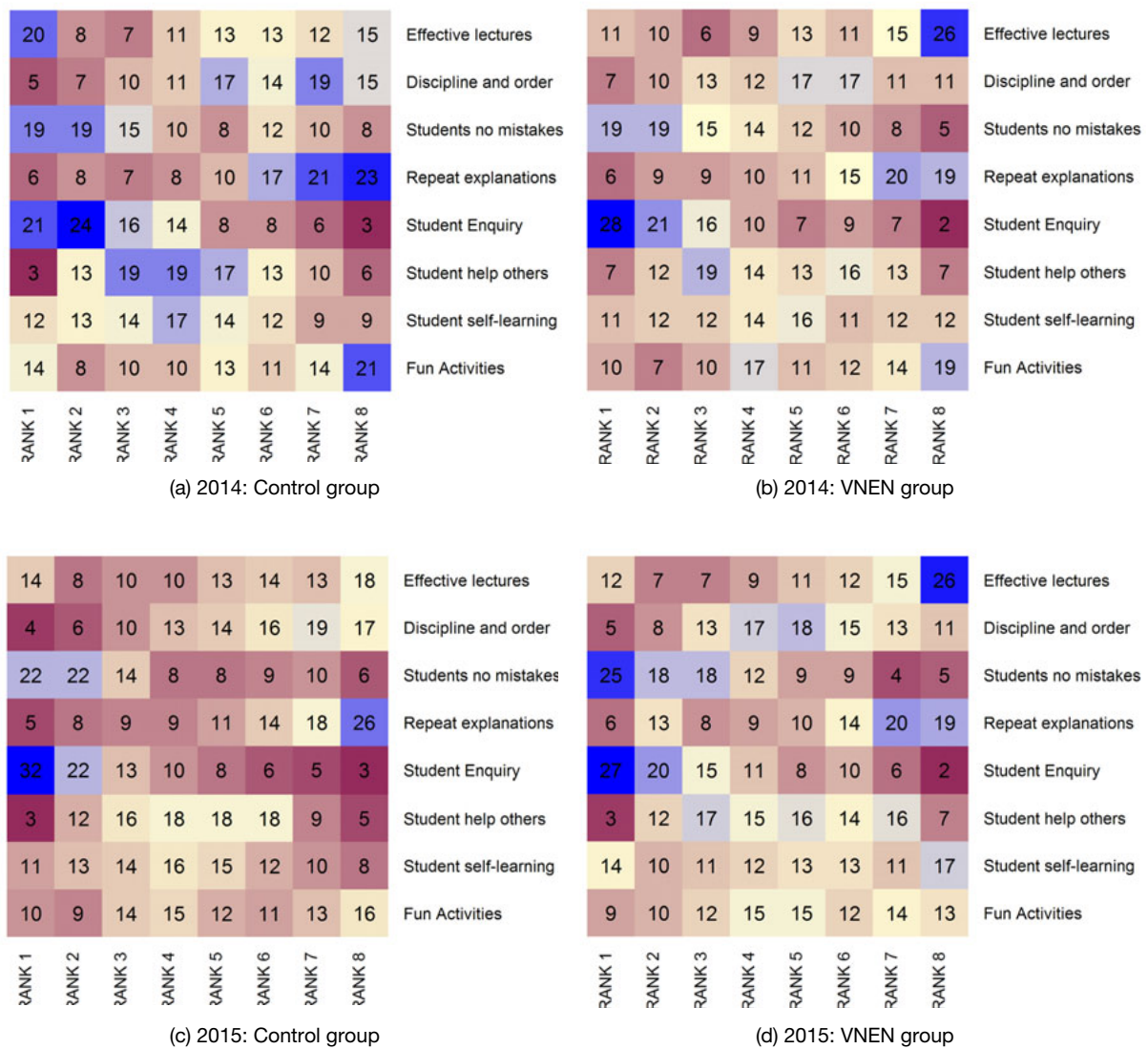
We now turn to examine the results in Figure 3.6 with regard to teacher ranking of how challenging they found it was to apply the pedagogical practice. The colors have been changed for Figure 3.6, with maroon or brown colors representing low percentage cells, blue color representing

**Figure 3.5** Hypothetical Block-Diagonal Pattern Expected for Heat Map



Source: VNEN Impact Evaluation study primary data, Authors calculations.

**Figure 3.6** Challenges Regarding Pedagogical Activities



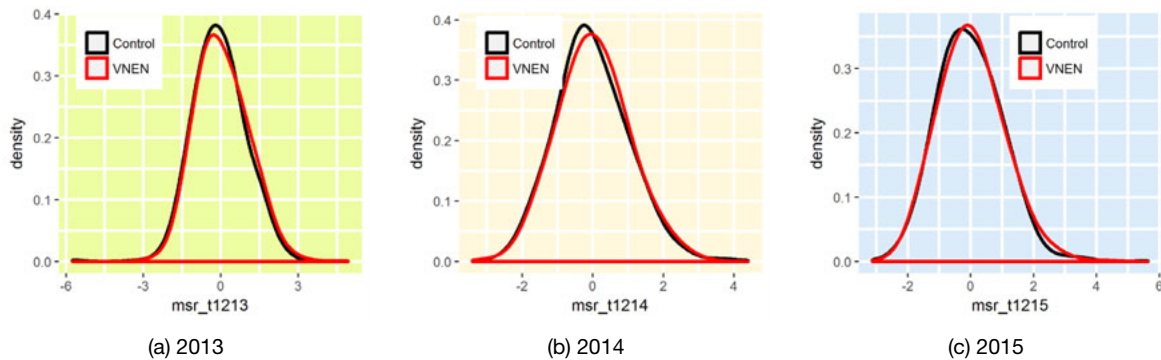
Source: VNE Impact Evaluation study primary data, Authors calculations.

high percentages and cream colors representing percentage numbers that are not too high and not too low.

One does not observe even an imperfect block-diagonal structure. Rather, Figure 3.6 indicates a similar pattern in all four panels. If we add up the 16 southeast cells for the VNE groups, we get a total of 181 in 2014, which goes up to 187 in 2015. As VNE teachers progressively gain mastery, one would expect the numbers in this

quadrant to increase, but these results show that within one year the improvement may only be marginal. The reader can explore any particular thread through the panels; paucity of space prevents a comprehensive exposition here. For instance, 'encouraging student enquiry' appears to be consistently among the top two ranked challenges, with the cells in dark blue or light blue. Providing 'repeated explanations' and giving 'effective lectures' likewise are rated the lowest in terms of challenges.

**Figure 3.7** Innovativeness of Teachers



Source: VNEN Impact Evaluation study primary data, Authors calculations.

### 3.2.3 Innovativeness

Using the same standard inventory due to Hurt, Joseph, and Cook, 1977 for principals, we estimated the overall innovativeness for teachers. As for principals, we did not find any discernible difference between control group and VNEN group teachers on this measure (Figure 3.7).

## 3.3 Impact on Teachers

The section on beliefs of teachers did show some movement or change across the program years. However, changes in beliefs are more often the result of a re-evaluation of previous beliefs in light of tangible results. But what brings about the results in the first place? In this section, we trace any evidence regarding impact on measures of self-efficacy and perceived influence of teachers. The reasoning is that as teachers' self-efficacy and perceived influence grow, they will be more confident and better able to implement the VNEN model.

### 3.3.1 Self-Efficacy

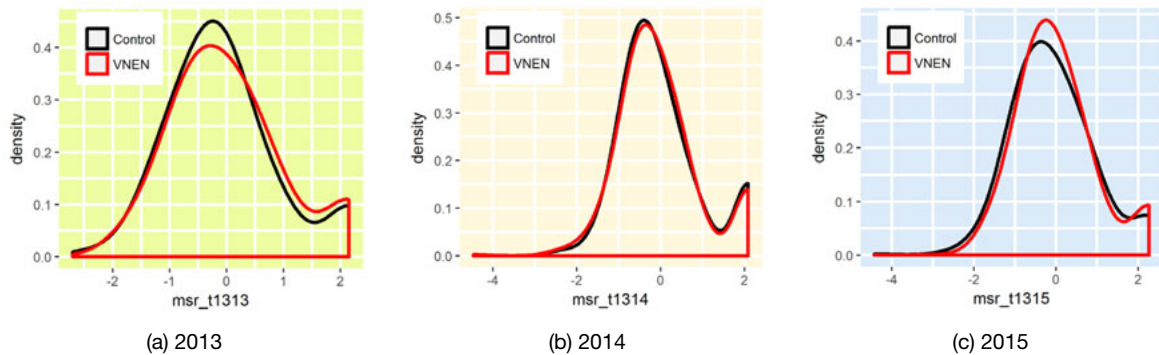
A substantive literature exists regarding self-efficacy and work-related performance, particularly in education and for teachers.<sup>3</sup> Self-efficacy is defined as an individual's judgment about how well or effectively they can perform certain tasks or deal with situations. It is said that a student can

only do as well as the teacher expects him or her to do—if the teacher sets high expectations of the student, it is likely that the student will strive hard and make an effort to justify or live up to the teacher's expectations. The student's effort reaps its own rewards, completing, in a sense, the teacher's prophecy about the student. An important issue is the formation of those teacher expectations regarding students. According to Bandura, 1993, "Teachers' beliefs in their personal efficacy to motivate and promote learning affect the types of learning environments they create and the level of academic progress their students achieve."

Social learning is a cornerstone of the VNEN model, hence teacher self-efficacy becomes even more important for VNEN. Essentially, self-efficacy works through feedback mechanisms, and these mechanisms are modified in VNEN classrooms because of network effects. In the traditional model, the relationship was between the teacher and each individual student, to the extent that the teacher was able to carve out time for interacting with individual students. In the VNEN model, there is a dynamic where the group of four to five students sometimes amplifies and at other times dampens the feedback.

The self-efficacy measure, constructed from teacher responses regarding eight key tasks, does not vary greatly between control and VNEN

**Figure 3.8** Self-Efficacy of Teachers



Source: VLEN Impact Evaluation study primary data, Authors calculations.

group teachers (Figure 3.8). The measure is constructed so as to have a mean of zero and standard deviation of 1. In 2013, the mean for the VLEN group was +0.05 as compared to a mean of -0.05 for the control group; and in 2015 the values were -0.04 and +0.04 respectively; in 2014 there was no statistically significant difference. Insight into self-efficacy is better obtained by considering the composition of the self-efficacy measure. Teachers responded to eight tasks on a nine-point scale with 1 meaning 'I cannot at all' and 9 meaning 'I am fully capable of doing it.' The eight task statements, abbreviated for space in

Table 3.7, included ones such as 'How much can you do to manage the class time effectively?' and 'How much can you do to organize teaching in a way that your students can use the learned material in daily life effectively?'

The items in Table 3.7 are arranged according to declining values of the first column which shows the WMLE (Weighted Mean Likelihood Estimate) Rasch item measure. The next two columns show the number (percentage) of surveyed teachers from the control and VLEN groups in 2015 who gave themselves very high ratings of 7, 8, or 9 on

**Table 3.7** Elements of Teacher Self-Efficacy

Item	Measure 2015	Choice 7, 8, 9 Control (n = 878)	Choice 7, 8, 9 VLEN (n = 890)
Getting students to produce original products	0.89	651 (74%)	732 (82%)
Help develop creativity in students	0.57	735 (84%)	776 (87%)
Use taught material in daily life	0.06	800 (91%)	811 (91%)
Use teaching aids and materials effectively	0.05	775 (88%)	831 (93%)
Provide reinforcements for positive behavior	-0.13	799 (91%)	839 (94%)
Communicate with problematic students	-0.31	790 (90%)	837 (94%)
Monitor performance improvement reliably	-0.49	825 (94%)	827 (93%)
Manage class time effectively	-0.63	832 (95%)	834 (94%)

Source: VLEN Impact Evaluation study primary data, Authors calculations.



each item. While the Bandura self-rating scales for teacher efficacy have been applied in multiple contexts, we are not aware of a previous application in Vietnam. It is possible that in the Vietnamese cultural context, teachers may have very high internally and externally imposed expectations of performance. This expectation may render it inconceivable or unacceptable that any teacher may admit that she is less than perfectly capable of performing any task expected of her. Admitting a less than perfect ability as a normal part of professional development may not be the same as in other cultures where the self-efficacy scale has been applied. The methodological aspect requires further research; for this study we note in Table 3.7 the very high percentages of teachers who gave themselves ratings of 7, 8, or 9 on the items.

Table 3.7 shows that relatively the most difficult task encountered by Vietnamese primary school teachers is getting students to produce original products. The other two most difficult tasks (from the WMLE estimates), include developing creativity in students and applying learning to activities in daily life; these are deficits that underpin the need for VNEN education reform. It is quite

interesting that ‘managing class time effectively’ is rated as the easiest task by the teachers, with about 95% of the teachers rating themselves 7 or higher on the nine-point rating scale used in the study, with no difference for this item across the control and VNEN groups. Overall, one does observe an edge for VNEN teachers for five out of the eight items, with the biggest difference being for the first item—‘getting students to produce original products.’

### 3.3.2 Influence

With the VNEN model stressing aspects of collaborative and participative learning related to the livelihood particular to each community, it is important that teachers are empowered and feel empowered. We measured the influence level that teachers had on decision making regarding key factors affecting teachers. Table 3.8 shows the eight kinds of decisions and the percentage of teachers who answered that teachers were the primary influencers for the decision. Figure 3.9 shows the Rasch index measure of influence from a four-point scale—‘not influential’; ‘somewhat influential’; ‘influential’; and ‘very influential’.

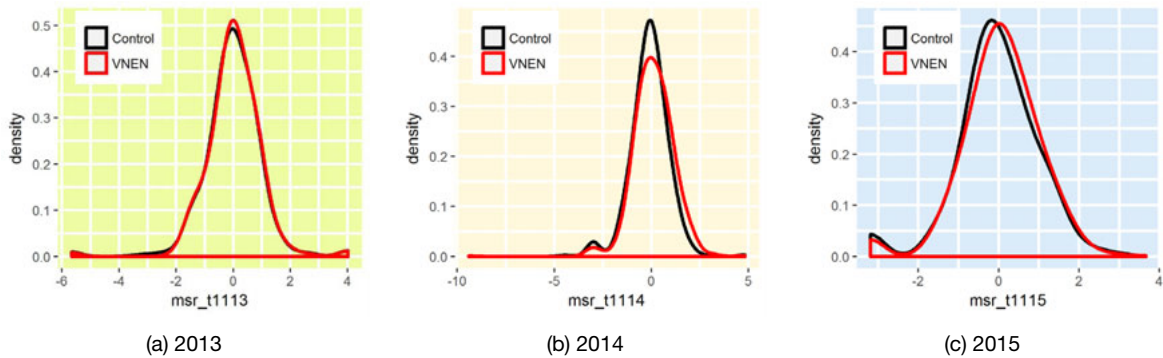
**Table 3.8** Teachers as Primary Influencers in Decision Making, 2013

Item	Control Group N = 864		VNEN Group N = 906	
	Number	Percentage	Number	Percentage
Choosing teaching methods to use	729	84.4%	766	84.5%
Developing teaching materials	203	23.5%	203	22.4%
Adapting curriculum to local conditions	221	25.6%	339	37.4%
Selecting teachers for training	27	3.1%	29	3.2%
Evaluating teacher performance	16	1.9%	27	3.0%
Dismissing teachers	7	0.8%	9	1.0%
Rotation of teachers to schools	2	0.2%	2	0.2%
Initial school assignment of teachers	1	0.1%	2	0.2%

Source: VNEN Impact Evaluation study primary data, Authors calculations.



**Figure 3.9** Teachers Self-Perception of Influence



Source: VNEN Impact Evaluation study primary data, Authors calculations.

The Rasch index measure of teacher perception of influence shows no difference between control and VNEN groups in 2013. In 2014, there is a statistically significant difference, with mean value being +0.10 for the VNEN group, compared to -0.10 for the control group of teachers. By 2015 the difference had narrowed down to +0.05 and -0.05. Table 3.8 shows that in 2013 both VNEN and control groups, a high percentage (84–85%)

of teachers reported being the primary influencers on the choice of teaching methods. However, for the item 'adapting curriculum to local conditions', a higher percentage of VNEN teachers (37% compared to 26%) reported having the main influence, among groups including various levels of government authorities and the school principal.

# TAKEAWAYS:

## Teacher Beliefs, Attitudes, and Training

This is the first of two chapters that deals with teachers. In this chapter, we presented some details about the profile of teachers in terms of their demographic background and training. We next presented details about teacher beliefs regarding the reform. Finally, we examined the evidence regarding the impact of the program on teachers self-efficacy and perceptions of influence.

### DEMOGRAPHIC PROFILE

- On an average, the teacher age of the sample covered in this study was about 40 years, the same for VNEN or control group schools. More than half of the teachers had a college or university degree and they had about 18 years of teaching experience, with 11 to 12 tenure at the sampled school. About one in five teachers in Priority 1 provinces were ethnic minorities.

### SALARY AND SATISFACTION

- The salary of teachers is close to the per capita income of Vietnam, suggesting that teachers are neither rich nor poor. Job satisfaction was equally matched across VNEN and control group schools, with more VNEN teachers receiving excellent teacher awards at the provincial level.

### TRAINING

- The most important issue to note about teacher training was that teachers received material prior to the training, and the training event itself used an actual emulation of the VNEN classroom with active discussion, rather than a lecture, to

provide knowledge. All teachers appear to have been exposed to some VNEN training, even if they were not teaching in VNEN schools. The biweekly cluster training was not fully implemented in some schools.

### BELIEFS REGARDING PEDAGOGICAL OBJECTIVES

- Teachers show a sharp understanding regarding the pedagogical objectives of the reform, and the VNEN teachers appear to have developed ownership of some of the objectives—for instance student self-learning as being more important than giving effective lectures. However, some teachers find it difficult to implement the objectives.

### IMPACT ON TEACHER SELF-EFFICACY

- Further research is required to test the validity of the Bandura self-efficacy scale in Vietnam, but the results presented here show very high self-efficacy of the teachers. The two items which are relatively more difficult for teachers were “Getting students to produce original products” and “Helping develop creativity in students.”

.....  
Teachers appear to have sound conceptual understanding of VNEN, but some teachers have faced difficulties in implementation—a reason for this difficulty may have been the sporadic implementation of the biweekly cluster meetings.

## Endnotes

1. See Brinkerhoff, 2006 and Leimbach and Emde, 2011. Training is only useful when trainees are motivated and well prepared to absorb the training before the event, and feedback loops exist for the application of learning after the training.
2. Martilla and James, 1977 is the seminal piece that spawned a large amount of literature regarding importance-performance analysis or IPA. Oh, 2001 provides a critical methodological investigation of its application and Azzopardi and Nash, 2013 provide a
3. useful survey of the literature using IPA in different fields. Anderson, Hsu, and Kinney, 2016 is a recent application in the field of education.

Albert Bandura is the great grandfather of this literature, also termed as the social-cognitive theory (Bandura, 1977). Bandura, 1993 describes the application of self-efficacy to teachers and learning. Bandura, 1997 is a book length treatment. Stajkovic and Luthans, 1998 and Judge et al., 2007 provide useful literature surveys. The measurements scale used in this study is based on Senemoğlu et al., 2009; Woolfolk and Hoy, 1990; and Gibson and Dembo, 1984.

# Pedagogy and Teaching Methods

# 4

In this chapter we explore further the implementation of the VNEN program. In the first section, we examine some program related details regarding the classroom. In the next section we examine various aspects of VNEN pedagogy such as teaching methods, assessment and student government. We conclude this chapter by an exposition of the construction of the VNEN implementation index.

## 4.1 The Classroom

We investigate three aspects regarding the VNEN classroom in this section. In order for the VNEN model to be applied correctly, there needs to be adequate space for children to be able to move around as well as for the teacher to be able to move from group to group when needed. We first investigate the aspect of adequate space and the furniture in the classroom. Second, the VNEN model calls for the incorporation of certain artifacts in the classroom—these include features such as a ‘student mailbox’ for students to write messages to one another. Third, the VNEN model of teaching is centered around the use of learning guides, and we investigate the teacher’s use of learning guides.

### 4.1.1 Classroom Space and Furniture

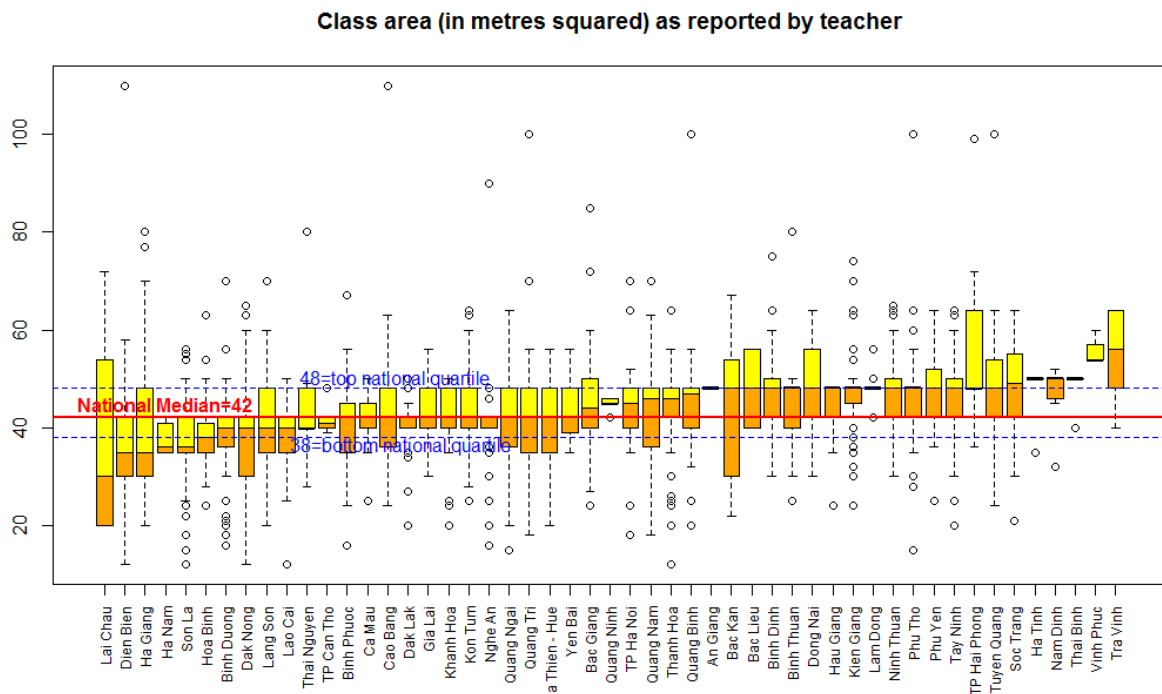
Overall, the data indicates that there was adequate space available for movement of children and teachers as well as parents and other visitors in the classroom. Figure 4.1 indicates that the median classroom area was 42 squared meters, with a fairly even distribution as shown by the

province level box plots. The mean classroom area available to each student was about 0.5 squared meters, without any statistically significant difference between control and VNEN groups. When teachers were asked in 2013 if there was a problem of space being restrictive to prevent moving around or to establish learning corners, 11% of VNEN teachers indicated this was the case. Interestingly, 31% of control group teachers indicated a problem of space. Teachers were also asked about any problem with furniture, for instance being too heavy to rearrange in optimal group seating. While 79% of VNEN teachers indicated no problem with the furniture, the proportion of control group teachers was lower at 72%. Over the next two years, there was an improvement in the furniture situation for VNEN schools, with 82% of teachers indicating no problem with furniture in 2015.

### 4.1.2 Artifacts

VNEN pedagogy includes features that are directly observable in the classroom. We have termed these as ‘artifacts’, which include the following: (i) Community Map: as part of the effort to integrate learning with the community and enhance the sense of belonging, at the same time as providing useful conceptual skills to students, each VNEN classroom is supposed to make a community map, which lays out the homes of every student in the classroom together with major landmarks; (ii) Classroom Library: this library includes the learning guides for children as well as other reference material, storybooks, magazines, etc.—usually it is arranged by a student group, as shown in the accompanying picture (Figure 4.2), and groups are meant to be responsible for its neatness. Some classrooms also

**Figure 4.1** Classroom Space



Source: VNEN Impact Evaluation study primary data, Authors calculations.

have a 'mobile library' which includes titles children may take home; (iii) Learning Corner: this is a part of the classroom where other didactic material and student's work is stored and displayed; (iv) Community Corner: is part of or an extension of the learning corner; it includes objects related to the community life of the school—ethnic handicrafts or dresses, crops, or other products; parents are invited to the classroom to help set up the community corner and the community map; (v) Student Mailbox: is a poster with envelopes for each student to be able to write notes to each other—the use of the mailbox is meant to be a tool to apply language learning and build communication skills; (vi) Student Government Organization Chart: students form a student government with elected or nominated members in different committees such as academic committee, health and hygiene committee, external affairs committee, and so on.

Installing the artifacts is relatively easy to do and can be quite fun for everyone, especially if parents are also involved. For instance, making the community map requires discussion, consensus building, and creativity. The task itself would help to create a sense of community and lead to very useful curriculum related discussions. Similarly, setting up and maintaining a community corner and library are very useful tasks related to the development of socio-emotional skills. Figure 4.3 indicates the measure of existence in the classroom of seven artifacts. Most of the VNEN schools had 75% or more of the artifacts. However, in a follow-up question about the use of artifacts, we found that some of them, such as the community map or the student mailbox were in disuse in some schools. Of VNEN teachers 13% in 2014 and 11% of VNEN teachers in 2015 reported not using the artifacts at all.

**Figure 4.2** Artifacts in VNEN Classroom



(a) Community map



(b) Learning corner



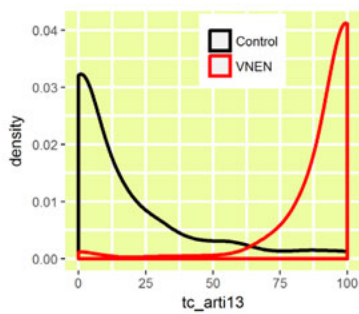
(c) Student government chart



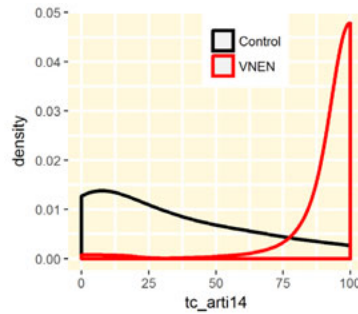
(d) Classroom library

Source: © World Bank.

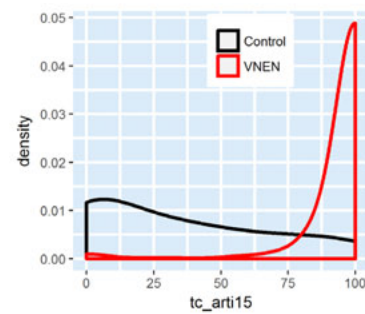
**Figure 4.3** Measure of Existence of Artifacts



(a) 2013



(b) 2014



(c) 2015

Source: VNEN Impact Evaluation study primary data, Authors calculations.



**Table 4.1** Opinions and Use of Learning Guides

	Priority 1			Priority 2 & 3		
	2013	2014	2015	2013	2014	2015
Preference mathematics LG vs. textbook	90%	87%	—	96%	91%	—
Preference Vietnamese LG vs. textbook	89%	87%	—	96%	91%	—
Use of LG—different tasks at same time—very easy or easy	82%	74%	75%	83%	80%	81%
Training for LG—very effective or effective	94%	98%	97%	96%	98%	97%
For knowing each student’s progress LG—very effective or effective	79%	94%	94%	83%	97%	98%
For learning communication skills LG—very effective or effective	82%	97%	98%	86%	99%	99%
For students to be more creative LG—very effective or effective	77%	94%	93%	82%	97%	97%
For students to know their own progress LG—very effective or effective	72%	93%	92%	78%	97%	97%
Supporting ‘vote’ for LG to replace textbooks for entire system	—	85%	83%	—	90%	89%

Source: VNEN Impact Evaluation study primary data, Authors calculations.

### 4.1.3 Learning Guides

Learning Guides (LGs) replace textbooks under the VNEN model. A learning guide has lessons or chapters like a regular textbook. In addition, it also has a workbook with exercises and activities for students to undertake, together with a series of instructions about activities to be carried out in a sequence, similar to a teacher’s lesson guide, except it is in the hands of students. Advantages of the LGs include: (i) turning individual differences along different dimensions of intelligence into being advantages in learning rather than disadvantages; (ii) developing and deepening multiple socio-emotional skills; (iii) helping teachers better identify and direct attention toward students who need specific help; and (iv) helping students themselves better identify their own progress and take corrective action as and when required.

Table 4.1 presents key findings regarding percent of teacher receptiveness about LGs. Given the

drastic change in the teaching method using LGs, it is surprising to see a strong positive response from teachers regarding the LGs. Teachers prefer the LGs to textbooks and find them useful in a number of ways. The training for the use of LGs was effective. Teachers would also support the adoption of LGs in lieu of textbooks for the whole system.

## 4.2 Pedagogical Elements

From the three physical or tangible features of VNEN teaching in the previous section, we turn in this section to study five further elements in the process of VNEN teaching. We examine closer the teaching methods used in the classroom and group work, and the modified assessment framework that focuses on formative feedback to students. Findings are presented regarding the implementation of student government and parental or community engagement in classroom activities.

### 4.2.1 Teaching Method

The three main teaching methods reported by teachers across both VNEN and control groups were as follows: (i) divide students into groups; (ii) assign tasks to students who work individually before reporting back on results; and (iii) guide students in doing exercises in exercise notebooks or in study notes. Even though the task assignment for students or exercises follows the sequence laid out in the learning guide, VNEN teachers may be considering the application of the methods to be quite similar. The key differences would be that in VNEN classrooms checking of answers is often a pairs or group exercise, where the teacher is only called in cases of doubt or dispute.

A follow-up question determines from teachers the three most frequently used activities including three actions that are central to VNEN—students encouraged to raise questions, students studying in groups, and students studying on their own. Table 4.2 shows the comparison of VNEN and control groups through the three survey years. The reported use of group studying by control group teachers is puzzling and needs to be investigated further. Note in Table 4.2 the increase in the percentages for items ‘b’ and ‘c’ which may be one of the spillover effects of the VNEN program.

### 4.2.2 Group Work

VNEN teachers were asked about their experience with group work. The responses, shown in Table 4.3, match to some extent the findings

regarding learning guides (LGs) reported in Table 4.1, with some important differences. As with LGs, teachers express a clear preference for the use of group organization over the traditional classroom. However, while a majority of teachers found the use of LGs to be easy or very easy, there were no teachers who found group work to be very easy. The distribution between teachers who considered group teaching to be easy and those who considered it to be difficult was about even. Group work and LGs go together; it would be rather difficult to teach using groups without using LGs. The teacher’s view of group work as difficult likely stems from its inherent complexity—the teacher has to look for interactions within and across groups, in addition to the overall interaction with the class as a whole and with individual students. Interestingly, the training for group work does get positive reviews from the teachers.

The teachers were also asked in 2014 how often they found themselves teaching or explaining something to the whole class even though the students are seated in groups. Just over half of the teachers, 53% to be exact, said that they had to do this less than one-fourth of the time or only when the learning guide required. The other half would apparently be teaching to the whole class more often. Accurate measurement of the exact extent to which whole class teaching in VNEN classrooms happens requires more sophisticated methods that we investigate in the qualitative section of this report. For now, it would be useful to note that when teachers are not letting work proceed

**Table 4.2** VNEN Methods among Top 3 Teaching Methods

Year	Control Group			VNEN Group		
	2013	2014	2015	2013	2014	2015
a. Students studying in groups	94%	95%	95%	98%	99%	98%
b. Students encouraged to raise questions	38%	55%	61%	53%	64%	71%
c. Students study on their own	11%	17%	25%	36%	42%	46%

Source: VNEN Impact Evaluation study primary data, Authors calculations.

**Table 4.3** Opinions and Use of Group Work

	Priority 1		Priority 2 & 3	
	2014	2015	2014	2015
Prefer group work for mathematics	86%	82%	90%	86%
Prefer group work for language	90%	87%	93%	88%
Easy to teach with group organization	50%	53%	49%	52%
Training for group work—very effective or effective	96%	—	99%	—
For knowing each student's progress—very effective or effective	96%	—	96%	—
For learning communication skills—very effective or effective	99%	—	100%	—
For students to be more creative—very effective or effective	94%	—	99%	—
For students to know their own progress group work—very effective or effective	76%	—	77%	—
Supporting 'vote' for group work for entire system	87%	—	88%	—

Source: VNEN Impact Evaluation study primary data, Authors calculations.

in groups, the method being used is the traditional teaching method rather than the VNEN method.

### 4.2.3 Assessment

The VNEN model stresses formative rather than summative assessment—meaning the accent is on oral and written feedback rather than on repetitive testing. The data indicate that teachers in VNEN classrooms may have drastically reduced the amount of informal testing or marking of student performance at the beginning of program implementation. However, it also appears that VNEN teachers subsequently migrated toward using more testing while traditional teachers reduced their testing. Using a frequency table to approximate the actual number of times that informal or routine tests were used, the data indicate in the year 2013 that an average of 39 tests were applied by VNEN teachers as compared to 100 tests throughout the year for control group teachers. The question on informal tests was not repeated in subsequent years, but a similar question on formal tests was monitored. In 2013, 79% of VNEN teachers reported having formal assessment once a year and 21% reported having formal assessment more often than once a

semester. The percentage of control group teachers in 2013 who reported formal testing with frequency greater than once a semester was 95%. The percentage of VNEN teachers reporting formal assessment more often than once a semester went up to 62% in 2014 compared to 65% of control group teachers. In 2015, there were more VNEN teachers (69%) reporting formal testing more often than once a semester, compared to 60% of control group teachers.

There are a number of alternative methods under VNEN in lieu of testing with marks for students to obtain feedback about their learning: (i) students are meant to check each other's work in pairs; (ii) the group leader checks the work of each group member; (iii) the group arrives at a consensus about the work of each group member; and (iv) groups work on projects and each group obtains feedback from the teacher. These assessment techniques seek to provide feedback beyond basic mechanics of computation and getting the correct answer. By way of contrast, the traditional preferred methods are (i) teachers call on one of the students to demonstrate the correct answers and (ii) teacher orchestrates a sequence where each

**Table 4.4** Teacher Use of Assessment Methods in Mathematics Lessons

VNEN Preferred Methods	2014		2015	
	Control	VNEN	Control	VNEN
(i) Student pair checking—all the lessons	47%	64%	54%	76%
—about half the lessons	30%	26%	29%	21%
—some of the lessons	22%	9%	16%	3%
—never use this method	1%	0%	1%	0%
(ii) Group leader checking—all the lessons	38%	74%	47%	74%
—about half the lessons	27%	16%	27%	19%
—some of the lessons	33%	10%	24%	7%
—never use this method	1%	0%	2%	0%
(iii) Group consensus check—all the lessons	26%	32%	27%	36%
—about half the lessons	21%	25%	28%	31%
—some of the lessons	45%	38%	39%	30%
—never use this method	8%	5%	7%	3%
(iv) Project work checking—all the lessons	35%	49%	37%	42%
—about half the lessons	31%	23%	37%	28%
—some of the lessons	33%	25%	25%	28%
—never use this method	1%	1%	2%	2%
<b>Traditional Preferred Methods</b>				
(i) Teacher sequenced steps—all the lessons	28%	8%	24%	6%
—about half the lessons	17%	6%	19%	10%
—some of the lessons	38%	40%	36%	38%
—never use this method	17%	47%	21%	47%
(ii) Student show and tell—all the lessons	59%	19%	60%	16%
—about half the lessons	15%	14%	17%	21%
—some of the lessons	22%	54%	19%	51%
—never use this method	4%	14%	4%	12%

Source: VNEN Impact Evaluation study primary data, Authors calculations.

step is explained on the blackboard and students check their own answers from their workbooks or slates. Table 4.4 shows the teacher responses regarding how often they use the specific assessment method.

The first thing to be observed from Table 4.4 is that the VNEN preferred methods are also popular with traditional teachers. While (i) student pair checking and (ii) group leader checking show a higher incidence with VNEN teachers,

the traditional teachers also use these methods. Control group teachers may even have increased their use of VNEN preferred methods as awareness about the new assessment methods spread. As a matter of fact, for the specific issue of assessment, MOET encouraged all schools to adopt formative assessment methods.

The bottom two items of Table 4.4 show that old methods have a tendency to persist. One classic approach that is commonly used in primary classrooms in Vietnam, especially for mathematics, is for the teacher to orchestrate the computation of answers with the use of a long wooden ruler, which she would tap once to indicate that students are to work on a specific step, and tap twice to indicate that they should move to the next step. This is similar to another approach where the teacher calls a student, typically a student whom she considers to be bright and able, to demonstrate the answer on the blackboard and the children check their own work against the blackboard. Sometimes this is combined with the students subsequently lining up to have their notebooks initialed by the teacher. These methods are very inefficient forms of cognitive engagement and have negative equity implications. While nearly half the VNEN teachers report they never use the orchestration method, only one in ten of the VNEN teachers report never using the class demonstration by the star student.

Table 4.4 does not show the answers for the same question that was asked regarding assessment in Vietnamese language and other subjects. When the answers are combined they give a fairly strong idea about the strength of VNEN implementation.

#### 4.2.4 Student Government

A very important part of the VNEN model is the institution of classroom or student government. The primary purpose of the student government is to help inculcate values of service and

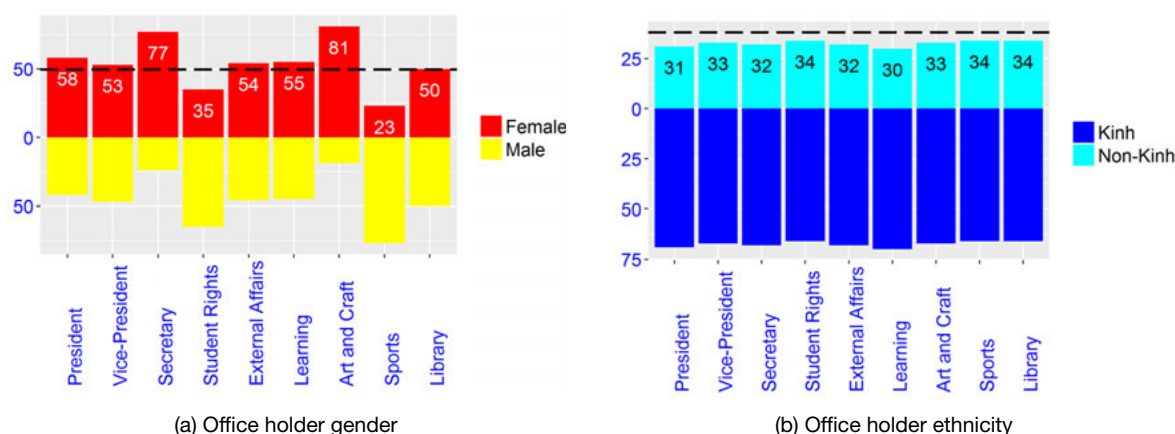
community and to help develop socio-emotional skills of responsibility and leadership.<sup>1</sup> Student government is learning by doing. VNEN utilizes the philosophy that the best way to learn responsibility is to be actually assigned responsibility, together with help to execute it. Group leaders learn to make sure that the group members obtain the resources they need and follow the tasks indicated in the learning guide or the directions of the teacher. They learn or are meant to learn about communicating clearly, persuading others, and acting collectively in a responsible manner.

Inclusiveness is a core value regarding student government. Teachers are encouraged to give everyone a chance, which they appear to be doing quite faithfully. As mentioned by 95% of the teachers, each student gets a chance to be group leader. The group leader position is changed every week by 15% of VNEN teachers. A further 40% to 50% of teachers change the group leader every month and about 20% change the group leader every two months.

In addition to the group leaders, the classroom also establishes various student committees, and each student has to be a member of one committee, with rotation encouraged. The committees typically established in VNEN schools are ones for learning, community relations, arts and craft, health and hygiene, sports, culture, and so on. Student government is one of the areas where the school leadership and class teachers can exercise their energy and creativity with regard to the depth of implementation. Respect for differences and appreciation of diversity are deep social goals that VNEN seeks to further through student government.

Figure 4.4 shows the selection of girls and ethnic minorities in student government positions. The black dotted line shows the percentage of female students (nearly 50%) and the percentage of ethnic minority students (about 38%) in the overall sample. Rather than nomination by

**Figure 4.4** Gender and Ethnic Minority Equality in the VNEN Classroom, 2014



Source: VNEN Impact Evaluation study primary data, Authors calculations.

the teacher, students elect the representatives, which itself is an exercise in fomenting democracy and civic values. The gender distribution shown in Figure 4.4 (a) provides quite a fascinating insight both into how stereotypes are formed and sustained and how they can be eliminated. Quite unlike the situation for adult women in national leadership (Munro and Of, 2012), with two notable exceptions, the girls appear to dominate student government.

Among the two posts with the highest female representation is the position of Secretary. Further research is required to investigate more deeply into the functioning of student government, but it is likely that the job of Secretary involves the highest amount of real work. Girls are underrepresented by far as leaders of the sports committee and also for the committee on student’s rights. At the same time, girls are grossly overrepresented on the Arts and Crafts committee leadership. From panel (b) of Figure 4.4, the percentage of ethnic minority leaders appear to be slightly lower than the percentage of ethnic minority children in the student population. However, there is no pattern by position that would suggest any kind of discrimination or bias. The percentage information is derived from two different sources—school enrollment from the principal and ethnic identity of student government office holder from the class teacher.

#### 4.2.5 Parental Engagement

We now turn to the eighth and last element of VNEN in the classroom, parental engagement. A deeper examination of parental backgrounds and the home environment of the child is covered in the next chapter. In this section we focus on the teacher’s perspective regarding parents and parent roles as part of the VNEN teaching method.

With a core element of VNEN philosophy concerning the relationship between learning and real life, parents are meant to play a bigger role in a child’s education as compared to the traditional model. Parent engagement as part of VNEN has various facets—both cognitive and non-cognitive learning as well as the building of community and cohesion. Teachers were asked how often they engaged with parents for a specified list of activities or purposes. The findings are reported in Table 4.5. The overall level of interaction with parents for VNEN teachers is lower than would be expected if a substantial proportion of teachers had closely adhered to the VNEN philosophy of involving parents. The data do indicate a higher level of parent interaction for VNEN teachers, but with considerable heterogeneity within both VNEN and control group schools. On average, parents were invited only once a year to make classroom artifacts, and less than once to demonstrate or teach a skill.



**Table 4.5** Teacher Engagements with Parents (mean number of occasions per year)

	2014		2015	
	Control	VNEN	Control	VNEN
<b>Traditional interactions</b>				
a. Inform parents about child's learning progress	2.39	2.47	2.54	2.55
b. Discuss well-being and behavior of child	2.09	2.20	2.16	2.21
c. Discuss parents' concerns or wishes	2.17	2.28	2.20	2.28
d. Discuss homework or home based support	1.97	2.09	2.05	2.14
f. Voluntary parent labor for school improvement	1.07	1.29	1.04	1.26
j. Discuss financial matters regarding fees charged	1.04	1.03	1.29	1.33
k. Discuss financial matters—general fund use	0.77	1.16	0.76	1.09
<b>VNEN encouraged interactions</b>				
e. Invite parents to demonstrate or teach a skill	0.59	0.86	0.45	0.79
g. Invite parents to help make classroom artifacts	0.65	1.16	0.52	1.11
h. Invite parents to help in teaching-learning	0.55	0.97	0.38	0.88
i. Take parent's language help (ethnic minority)	0.42	0.57	0.38	0.45
l. Discuss use of VNEN grant	0.33	1.12	0.33	0.97
<b>Overall or total number of interactions</b>	<b>14.47</b>	<b>17.23</b>	<b>14.53</b>	<b>17.19</b>

Source: VNEN Impact Evaluation study primary data, Authors calculations.

### 4.3 VNEN Implementation Index

The initial conceptualization of this study was to implement a standard average treatment effect on the treated (ATT) model of impact evaluation. We had a randomized control and treatment group cohort who would monitor from Grade 3 to Grade 4 and 5, and compare the student performance to determine the impact of the model through standardized tests in Vietnamese and mathematics. The accompanying surveys were meant to collect background information including attitudes, preferences, and values of the stakeholders as well as endowments to understand or explain the variation in test score performance. The qualitative part of the study (reported in Chapter 7) was meant to provide further insight on the relationship between classroom actions and the results for a small sample of

VNEN schools where students performed well on the standardized tests. While this model has been implemented and the ensuing results reported in Chapters 6 and 7, the study team also came to realize from baseline data and from school visits and discussions with teachers and education administrators that the ATT model may not be completely appropriate to evaluate the impact of VNEN. The reason is the presence of considerable heterogeneity in VNEN implementation.

Awareness and knowledge about VNEN spread fairly quickly across both VNEN and control group schools. Quite a few VNEN practices do not require an additional resource outlay and are easy to copy—for example, to invite parents to teach how to make a traditional ethnic handicraft, or to institute a student government. Some practices do require resources, such as the acquisition of learning guides, which were provided

free of charge to project schools due to the GPE financed project. However, MOET also followed a practice of allowing non-project schools to adopt the VNEN model, and some schools were able to arrange for funds, for instance from the local government's allocation for textbooks to be redirected to purchase the learning guides at marginal cost. Other schools attempted to emulate the VNEN pedagogy without the detail regarding learning guides. From the viewpoint of the impact evaluation, this was a problem of sample contamination, the fact that schools assigned to the control group began to adopt substantive elements of the VNEN project. When such a phenomenon is proportionately small, one can simply eliminate the contaminated part of the sample with some checks for systemic bias. However, in this study, as seen from some of the previously reported findings, quite large proportions of control group schools adopted VNEN elements.

At the same time as control group schools were adopting elements of the VNEN model, there were VNEN schools that were skipping elements or adopting them with lower intensity. For example, a VNEN classroom may have had the mailbox artifact installed in the classroom for children to share messages with one another to improve their communication and writing skills; but after installation of the mailbox, there was little actual use made of it. Or parents may have been invited for one meeting to help make the community map, but never after that. Meanwhile, some VNEN schools may have taken parent participation to heart, and set aside one morning every week for parents to come in to teach a traditional skill. And teachers at the schools may have taken steps to make sure that children used the mailboxes to communicate messages to one another and to the teacher, and the same teacher may have also provided formative assessment by providing feedback on the notes the children wrote.

Given the degrees of freedom that existed with regard to implementation on a day-to-day basis

on various dimensions, a once a year retrospective survey cannot possibly measure dimension level implementation with reasonable accuracy. However, by aggregating or averaging across dimensions and over respondents and years, the signal to noise ratio can be considerably improved. While the surveys were initially designed to capture background information to understand causality better, some of the questions do provide information that can be repurposed to determine the level of implementation. More implementation related questions were also added after the baseline year, so the understanding of implementation improves over time, much as implementation itself may have improved cumulatively with time.

In this subsection we present information about the construction of the VNEN implementation index. We consider variables related to the intensity of VNEN that are available for both the control and VNEN groups so that an index can be developed common to the two groups. We examine the respective empirical distributions of the variable superimposed on the same axis to examine for lateral separation. If there is a clearly visible separation, it is taken as an indication that the variable tracks VNEN well and is included as an element for the VNEN index. If there is not a very clear separation, we do not include the variable. At the end the variables are combined into a single implementation index defined to have a mean of zero and standard deviation of 1. The elements are considered by respondent groups—principals, teachers, parents, and students. We construct a year-wise implementation index and an overall implementation index.

### **4.3.1 VNEN Implementation Index: Principal**

The questionnaire on principals includes two possible elements for the VNEN index—an item on principal community outreach, expected to be higher for VNEN and a Rasch index of VNEN actions, shown in Table 4.6. The Rasch index includes items such

as 'Teachers in my school are always looking for opportunities to integrate students' learning with real life' and 'Community members are involved in curricular and extra-curricular activities'. The results are shown in Figure 4.5. The community outreach

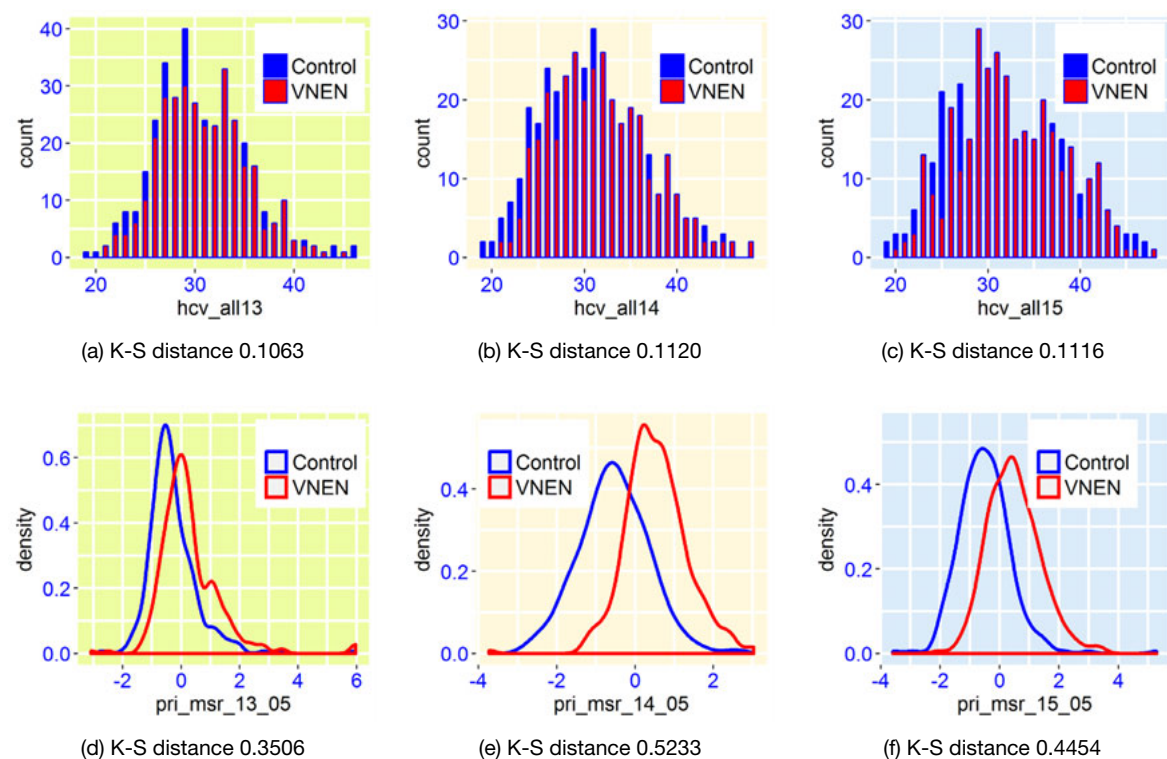
measure does not track VNEN, while the Rasch index does. Interestingly, in a recurrent theme throughout this study, we find that the Rasch measure shows a big step towards separation in the second year, seen from the Kolmogorov-Smirnov

**Table 4.6** Principal Variables

Variable Name	Concept	Included
<b>2013</b>		
hcv_all13	Principal community outreach (home visits)	X
pri_msr_13_05	VNEN actions Rasch measure	✓
<b>2014</b>		
hcv_all14	Principal community outreach (home visits)	X
pri_msr_14_05	VNEN actions Rasch measure	✓
<b>2015</b>		
HCV_all15	Principal community outreach (home visits)	X
pri_msr_15_05	VNEN actions Rasch measure	✓

Source: VNEN Impact Evaluation study primary data, Authors calculations.

**Figure 4.5** VNEN Implementation Index: Principal



Source: VNEN Impact Evaluation study primary data, Authors calculations.

distance measure, but the gap scales back from the second year to the third year.

### 4.3.2 VNEN Implementation Index: Parents

Parents were interviewed only in 2014 and 2015 but the parents are able to provide more useful information regarding VNEN implementation for the purpose of generating an implementation index, see Table 4.7. By combining the data over the sample of students from each school, a more robust measurement is possible—this is also true of information from students and teachers. Parents were asked about their own involvement in school activities, an important VNEN consideration, and about the learning related activities of children at home. Parents were also asked about their knowledge of VNEN implementation in the school. While a set of variables were measured in each of the two survey years, some measures are available only for a single year. This is because the questionnaires were being revised after every round to uncover more details, while seeking to maintain repeated measurement when asking the same question was more useful. Figures 4.6 and 4.7 provide details.

All parents were asked about their knowledge of VNEN. Using Rasch terminology, this was an

extremely easy question about implementation, or one that was very difficult for a school to get wrong. Indeed, Figure 4.6(a) shows a wide gap between control group and VNEN parents on this measure. We can also see from Figure 4.6(b) that the gap narrows from 2014 to 2015, mostly due to more control group parents becoming aware of the VNEN program. Another variable which appears to discriminate strongly between VNEN and control group schools is classroom participation by parents—Figure 4.7 (a) and Table 4.8. Midway through the program, MOET had issued Circular 30 that sought to modernize the assessment method, with a more detailed formative assessment by teachers. This circular was applicable to all schools, and is probably the reason behind the lack of separation in measures observed in Figure 4.7 (c). Other variables show a moderate level of VNEN tracking.

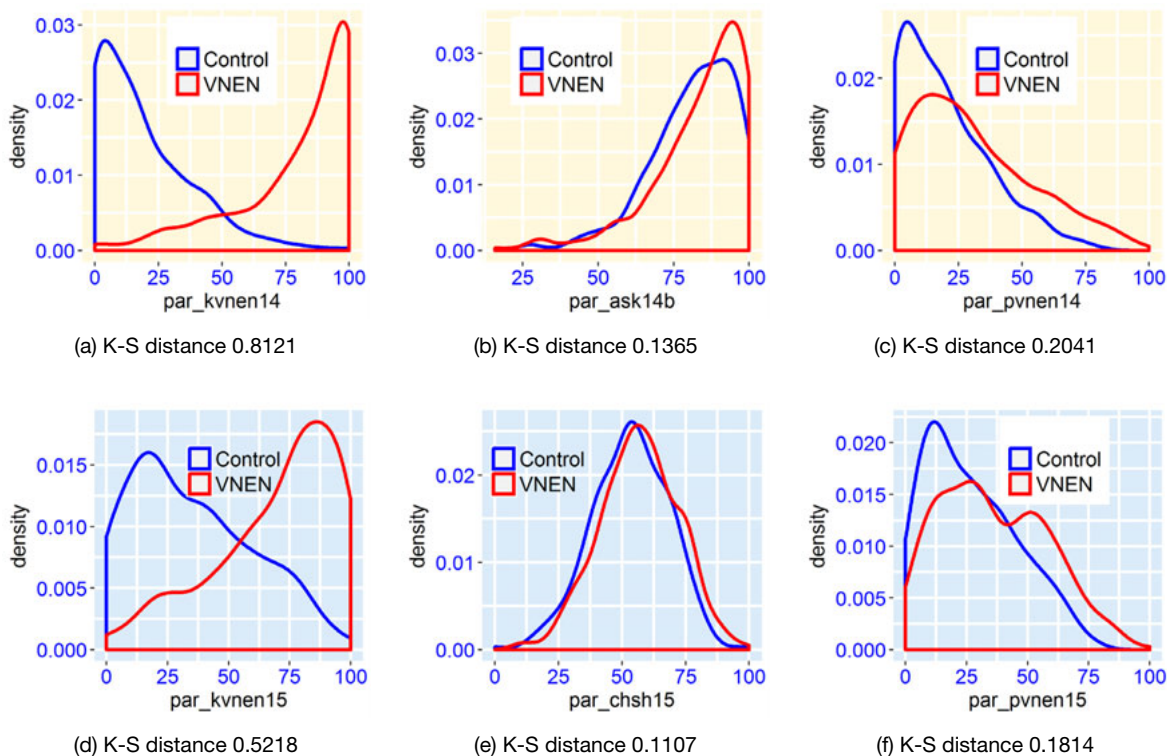
### 4.3.3 VNEN Implementation Index: Students

Student measures regarding classroom interaction are among the most useful variables explaining VNEN implementation. It had been shown earlier that teachers in all schools, including control group schools, reported using a group-based teaching method. This may have occurred because of a problem in communicating the fact that we were interested in knowing about near

**Table 4.7** Parents (Part I) Variables

Variable Name	Concept	Included
<b>2014</b>		
par_kvnen14	Parent knowledge about VNEN	✓
par_ask14b	Child interaction at home	X
par_pvnen14	Parent participation in school activities	X
<b>2015</b>		
par_kvnen15	Parent knowledge about VNEN	✓
par_chsh15	Child sharing about school happenings	X
par_pvnen15	Parent participation in school activities	X

Source: VNEN Impact Evaluation study primary data, Authors calculations.

**Figure 4.6** VNEN Implementation Index: Parents (Part I)

Source: VNEN Impact Evaluation study primary data, Authors calculations.

full-time use of the group method, not just occasional use of group teaching which may happen at any school.

The fact that every sampled school had approximately 20 randomly chosen students from the grade cohort provides a robust check on actual group work (Table 4.9 and Figure 4.8). A simple question was asked about how often the group method is used in teaching—with choices being 1: 'Yes, often'; 2: 'Yes, sometimes' and 3: 'No'. We defined the measure,  $hi\_grpv13$  and  $hi\_grpm13$  respectively for Vietnamese and mathematics lessons, based on the number of students who answered 1 less the number of students who answered 3, expressed as a percentage of the total number of students at the school. The resulting measure shown also for years 2014 and

2015, shows a clear demarcation and an increase from the first year to the second year, followed by a decline in the gap.

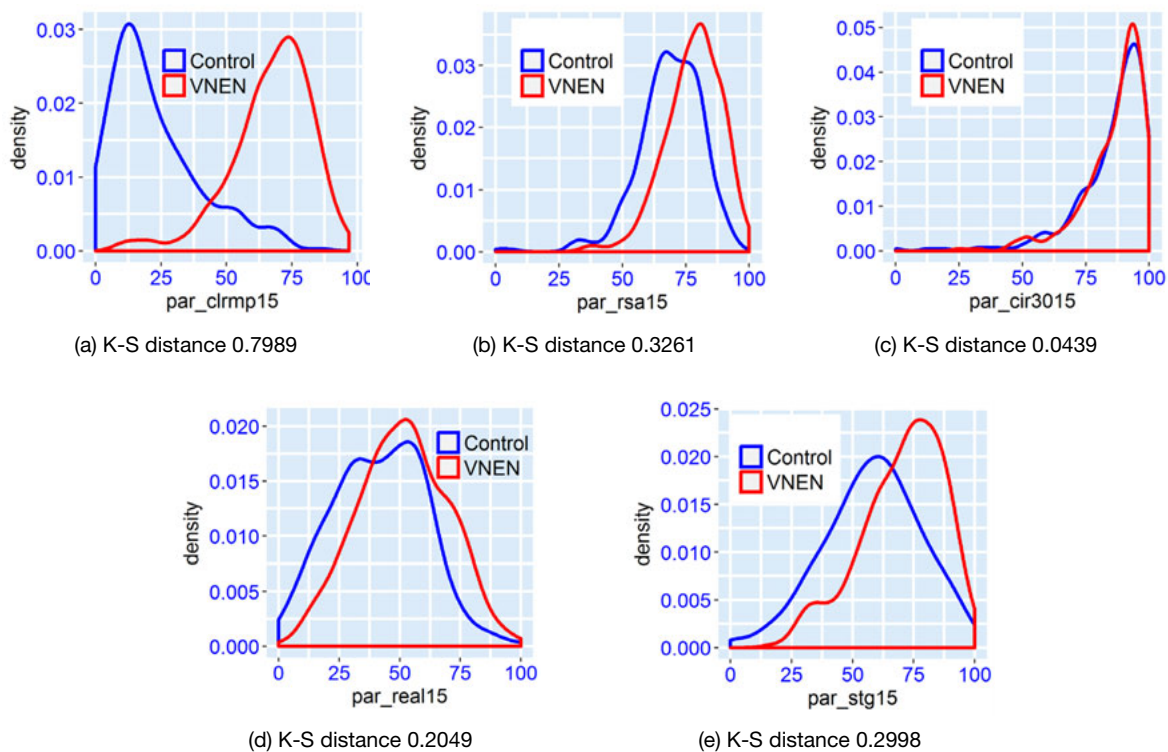
We also used a Rasch measure constructed out of 23 items that were asked of students regarding the VNEN method used in classroom instruction. These items included questions related to the use of games and role-play in the classroom and the use of help from peers. The items also included practices that are typically seen only in traditional classrooms such as the teacher reading out loud and the students taking notes. As with the measurement of group work, the combined happening of VNEN practices and the absence of happenings expected in control group classrooms makes for a fairly robust measure of VNEN practice. Conversations with

**Table 4.8** Parents (Part II) Variables

Variable Name	Concept	Included
<b>2015</b>		
par_clrmp15	Parent report of child's classroom setup	✓
par_rsa15	Parent report of child's classroom activities	✓
par_cir3015	Parent receives written feedback from teacher	X
par_real15	Child does applied real life assignments	✓
par_stg15	Parent reports about student government election	✓

Source: VNEN Impact Evaluation study primary data, Authors calculations.

**Figure 4.7** VNEN Implementation Index: Parents (Part II)



Source: VNEN Impact Evaluation study primary data, Authors calculations.

parents had suggested that one difference that the VNEN program made was the willingness and enthusiasm of children to tell their parents about what had happened at school that day after they got home. This would make sense as children at VNEN schools were expected to be more

cognitively engaged and experienced greater novelty in their day-to-day activities. The formal survey question regarding this only covers a relatively low magnitude discrimination power, as seen in Figures 4.9 (b) and (c).

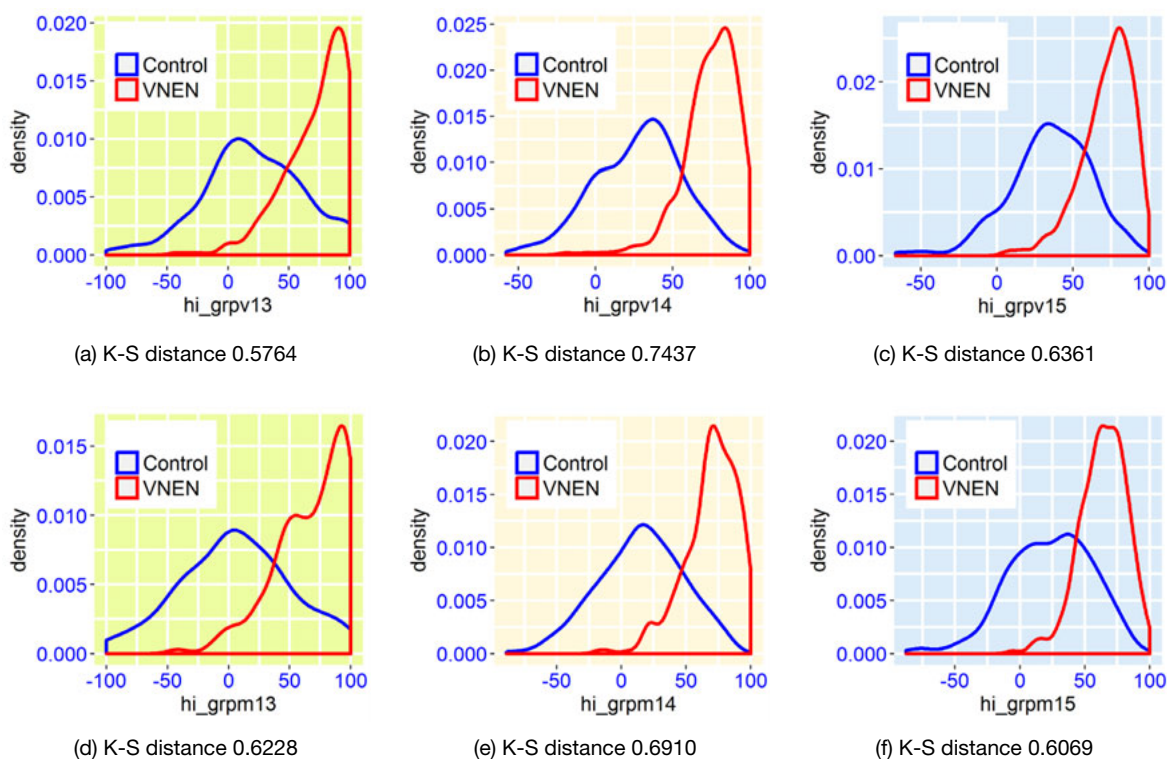


**Table 4.9** Student (Part I) Variables

Variable Name	Concept	Included
<b>2013</b>		
hi_grpv13	High incidence of working in groups for Vietnamese	✓
hi_grpm13	High incidence of working in groups for mathematics	✓
<b>2014</b>		
hi_grpv14	High incidence of working in groups for Vietnamese	✓
hi_grpm14	High incidence of working in groups for mathematics	✓
<b>2015</b>		
hi_grpv15	High incidence of working in groups for Vietnamese	✓
hi_grpm15	High incidence of working in groups for mathematics	✓

Source: VNEN Impact Evaluation study primary data, Authors calculations.

**Figure 4.8** VNEN Implementation Index: Students (Part I)



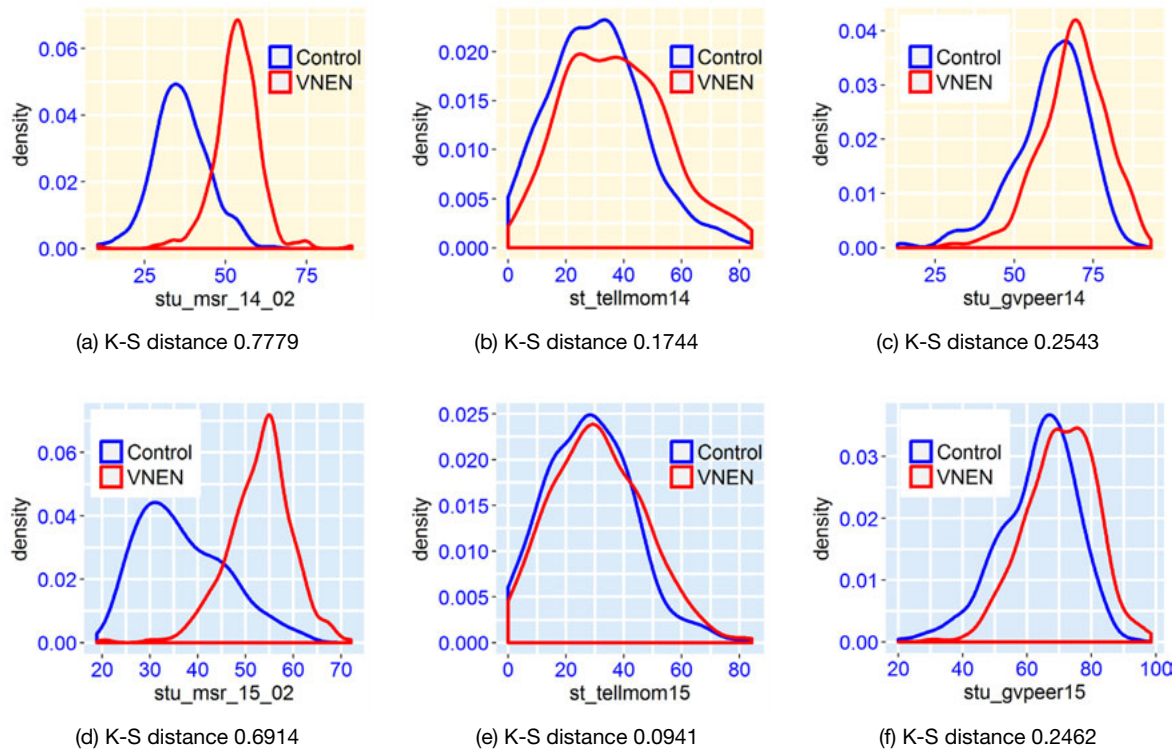
Source: VNEN Impact Evaluation study primary data, Authors calculations.

**Table 4.10** Student (Part II) Variables

Variable Name	Concept	Included
<b>2014</b>		
stu_msr_14_02	Student report of VNEN class activities	✓
stu_tell_mom_14	Student volunteers to tell parents about class activities	X
stu_gv_peer14	Student enthusiastic participation in peer activities	✓
<b>2015</b>		
stu_msr_15_02	Student report of VNEN class activities	✓
stu_tell_mom_15	Student volunteers to tell parents about class activities	X
stu_gv_peer15	Student enthusiastic participation in peer activities	✓

Source: VNEN Impact Evaluation study primary data, Authors calculations.

**Figure 4.9** VNEN Implementation Index: Students (Part II)



Source: VNEN Impact Evaluation study primary data, Authors calculations.

### 4.3.4 VNEN Implementation Index: Teachers

Figure 4.10 indicates that nearly all the variables derived from the survey of teachers prove to be useful in tracking or discriminating between VNEN and control groups schools. In some cases, there is a movement toward a greater level of implementation across years. For instance, the measurement of variables tc\_gsq\_13, tc\_gsq\_14, and tc\_gsq\_15 comes from a question that asked teachers to mention the top three teaching activities they use from a list of nine activities. This included items such as 'encourage students to raise questions in class' together with items such as 'write on blackboard for students to copy'. To some extent, teachers may have become more aware over the study period that the latter was less and less of a socially acceptable answer. The

single variable would not be an accurate measure of implementation for this reason, but repeated averaging and triangulation across groups would lead closer toward a reasonably accurate measure of implementation.

Figure 4.11 (d) and (e) show the result of a policy level intervention to encourage all schools to adopt the use of formative assessment methods. Control group distribution shows a bigger rightward shift leading to a decline in the discriminating power of this particular variable.

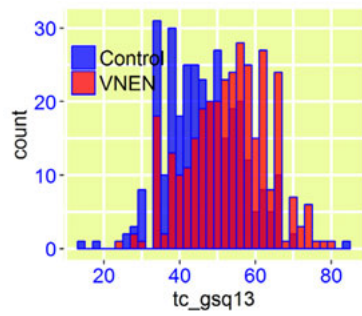
Figure 4.12 shows the year-wise Rasch aggregated measure of the constituent elements shown so far, and the summary implementation measure combining all three years, named vindex2a.

**Table 4.11** Teachers Variables

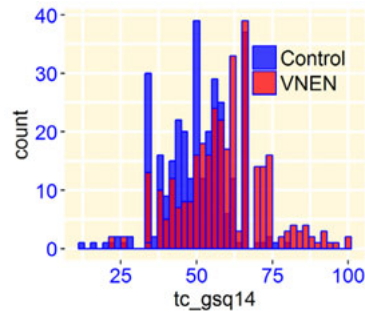
Variable Name	Concept	Included
<b>2013</b>		
tc_gsq_13	Frequency of VNEN and traditional classroom activities	✓
tc_arti13	Existence of VNEN artifacts in the classroom	✓
tc_artu1_13	Utilization of VNEN artifacts in the classroom	✓
tc_pvnen13	Parent participation at school	✓
tc_s14_13	Composite index of VNEN actions in the classroom	✓
tc_pclm13	Incidence of bi-weekly teacher cluster meetings	✓
<b>2014</b>		
tc_gsq_14	Frequency of VNEN and traditional classroom activities	✓
tc_arti14	Existence of VNEN artifacts in the classroom	✓
tc_artu1_14	Utilization of VNEN artifacts in the classroom	✓
tc_pp_14	Parent participation (stronger specification) at school	✓
tc_ped_14	Composite index of VNEN pedagogy in the classroom	✓
tc_chwk_14	Teacher utilizing VNEN supported assessment methods	✓
<b>2015</b>		
tc_gsq_15	Frequency of VNEN and traditional classroom activities	✓
tc_arti15	Existence of VNEN artifacts in the classroom	✓
tc_artu1_15	Utilization of VNEN artifacts in the classroom	✓
tc_pp_15	Parent participation (stronger specification) at school	✓
tc_ped_15	Composite index of VNEN pedagogy in the classroom	✓
tc_chwk_15	Teacher utilizing VNEN supported assessment methods	✓
tc_sg_15	Teacher report on functioning student government	✓
tr_wct_15	Teacher teaching whole class even if group seating	✓

Source: VNEN Impact Evaluation study primary data, Authors calculations.

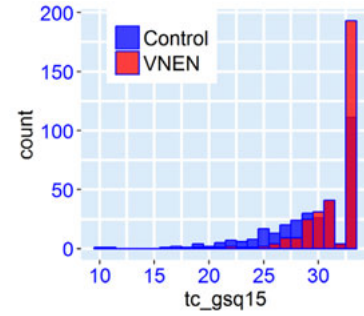
**Figure 4.10** VNEN Implementation Index: Teachers



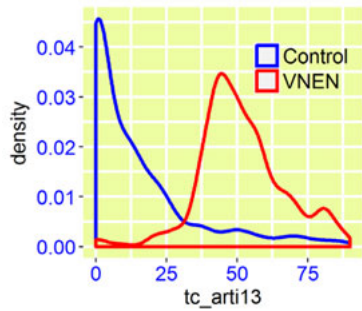
(a) K-S distance 0.2929



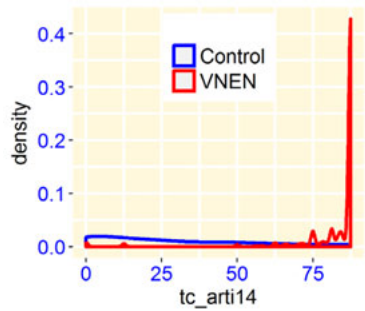
(b) K-S distance 0.3087



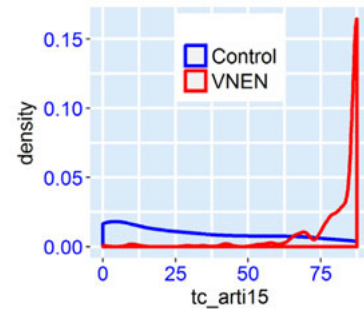
(c) K-S distance 0.2777



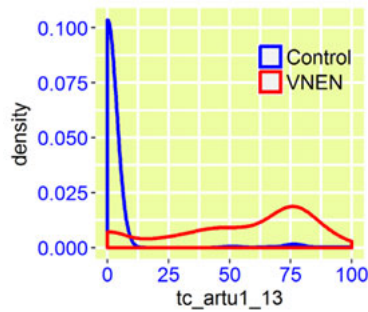
(d) K-S distance 0.8047



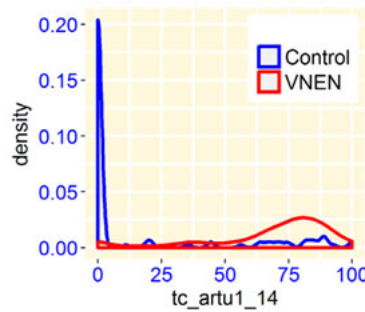
(e) K-S distance 0.8515



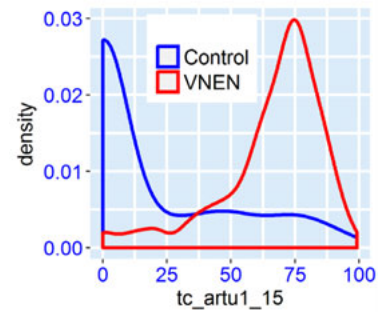
(f) K-S distance 0.7958



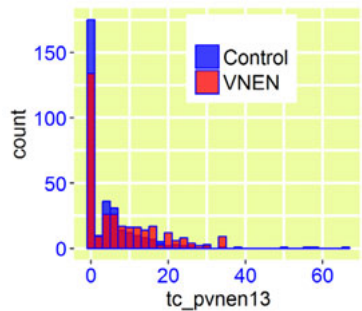
(g) K-S distance 0.8247



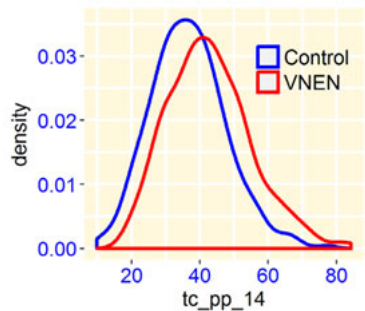
(h) K-S distance 0.7044



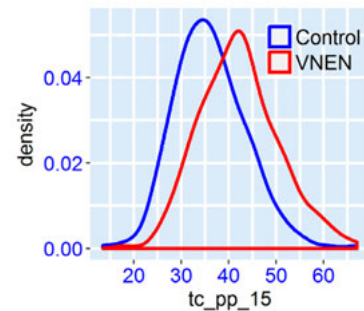
(i) K-S distance 0.6569



(j) K-S distance 0.1869



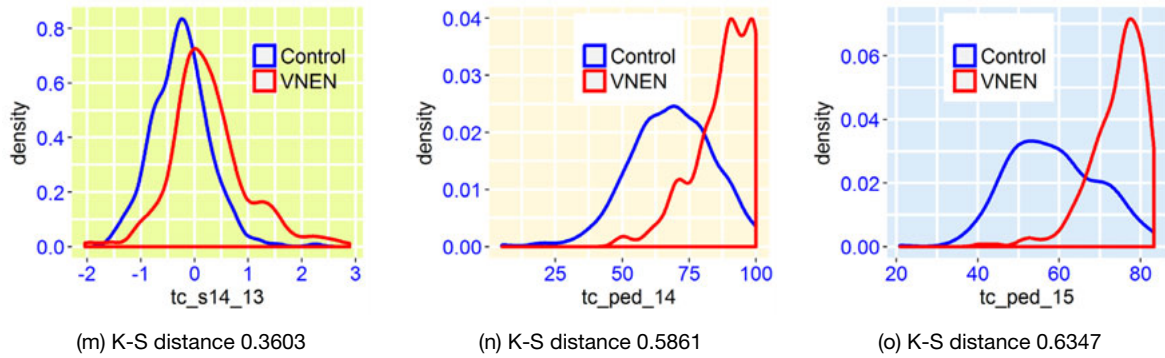
(k) K-S distance 0.2130



(l) K-S distance 0.3309

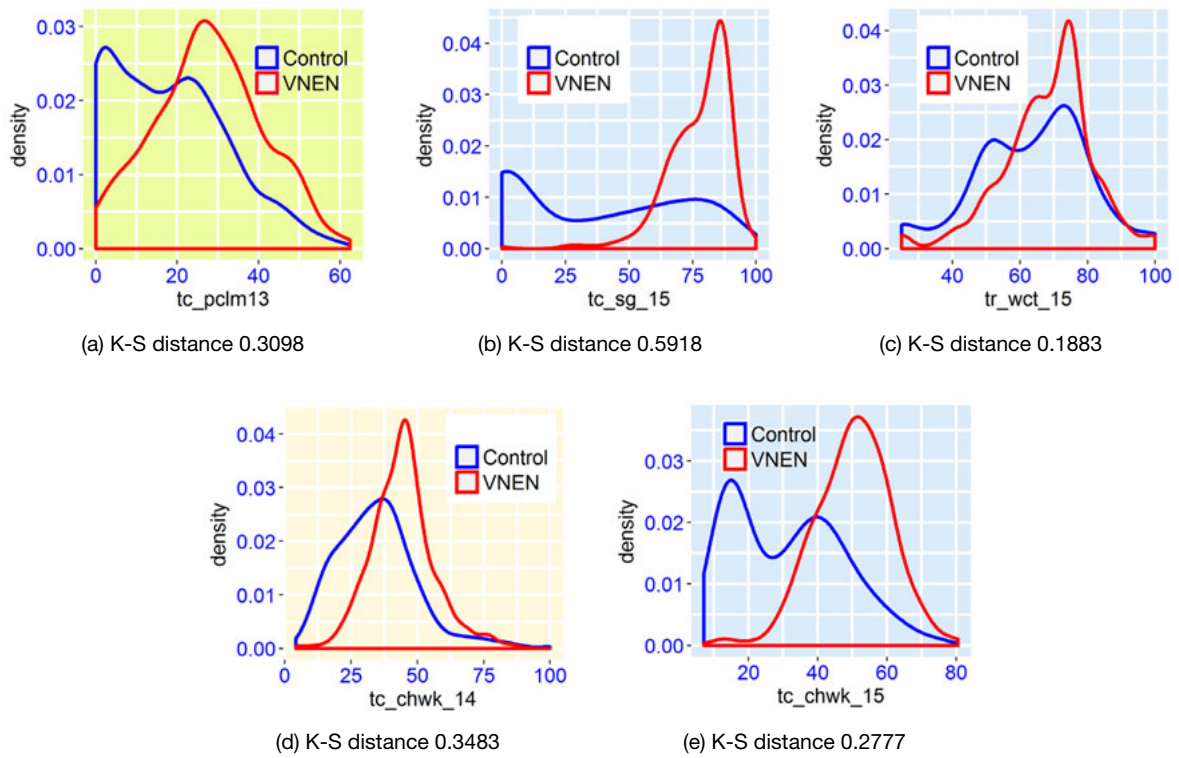
(continued)

**Figure 4.10** VNEN Implementation Index: Teachers—*Continued*



Source: VNEN Impact Evaluation study primary data, Authors calculations.

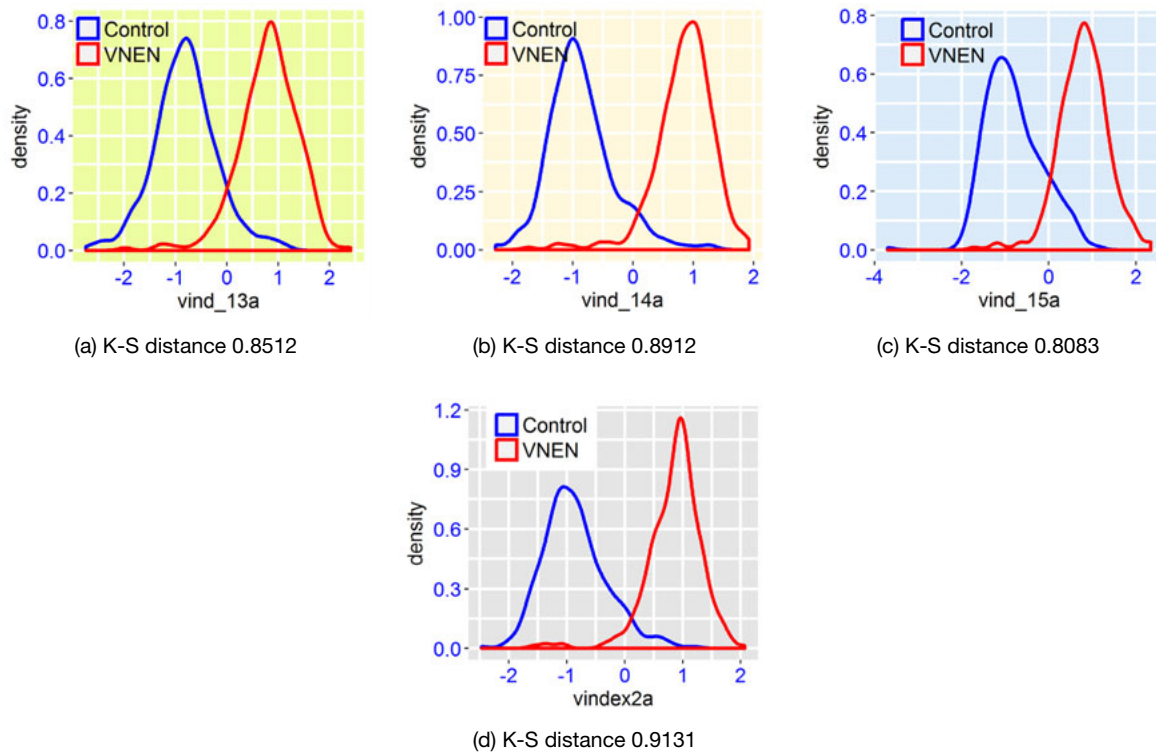
**Figure 4.11** VNEN Implementation Index: Formative Assessment Intervention



Source: VNEN Impact Evaluation study primary data, Authors calculations.



**Figure 4.12** VNEN Implementation Combined Index: By Year and Overall



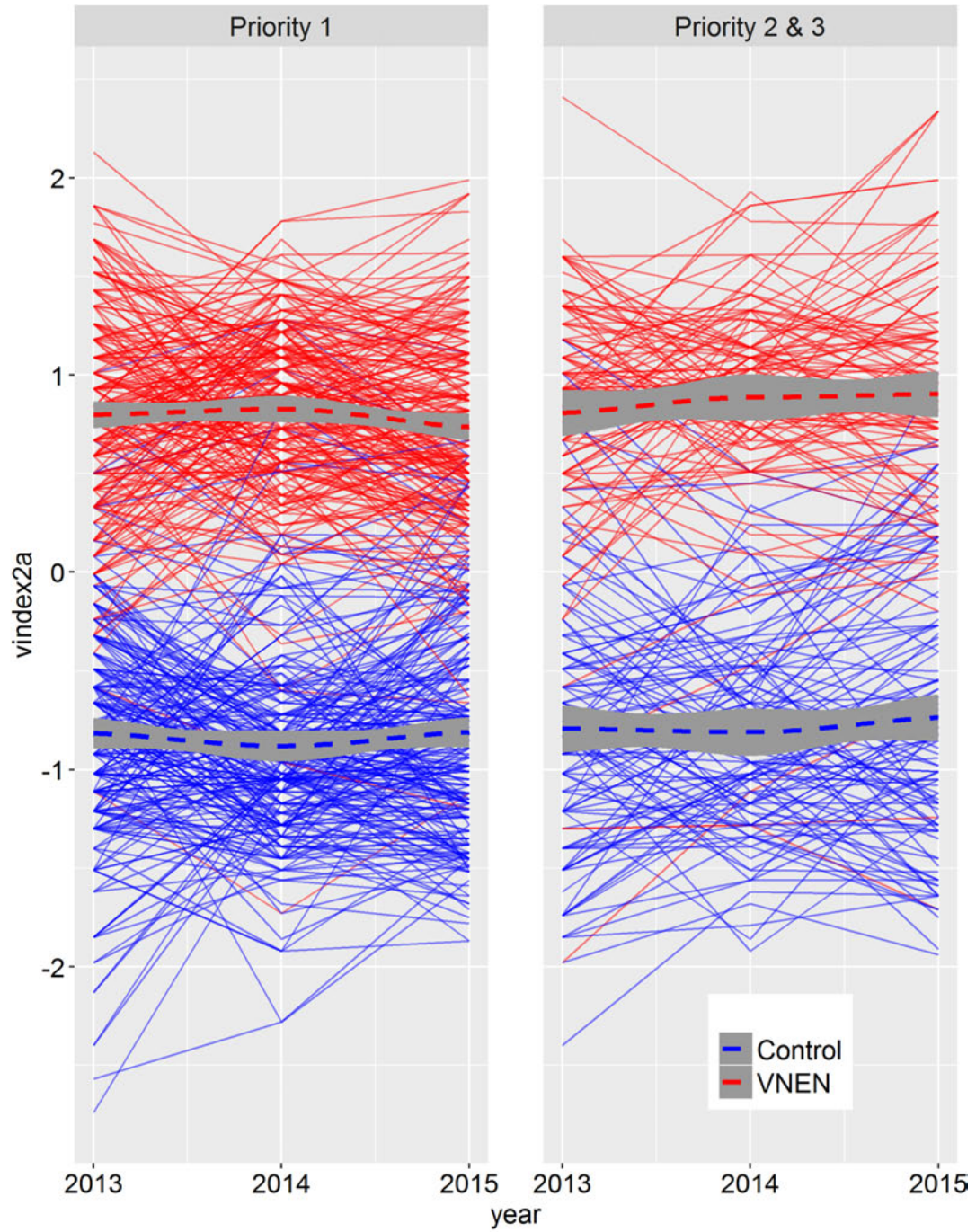
Source: VNEN Impact Evaluation study primary data, Authors calculations.

The different elements were combined using a Rasch technique. In addition to the kernel densities shown earlier, Figure 4.13 provides a clear depiction of the issue of implementation heterogeneity. The smoothed dashed line shows how on average implementation difference is two

standard deviations between control group and treatment group. But we have to be very careful in comparing items because the experimental design and tags of VNEN and control have many layers in between.



**Figure 4.13** VNEN Implementation Index



Source: VNEN Impact Evaluation study primary data, Authors calculations.

# TAKEAWAYS:

## Pedagogy and Teaching Methods

This is the second of two chapters that deals with teachers. In this chapter, we presented details of implementation of the teaching method in the classroom and examined each element of the VNEN model. We described the construction of an index that can be used to understand the implementation of the VNEN model.

### CLASSROOM

- Mean classroom area was 42 squared meters, which appears to have been adequate in most cases for a group configuration of seating. VNEN classrooms had 75% or more of seven artifacts such as community maps and learning corners. However, regular use of the artifacts as part of classroom instruction was not widespread.

### LEARNING GUIDES

- Learning guides are a central element of the VNEN approach to combine socio-emotional skill development together with cognitive skills. Teachers expressed positive opinions about the effectiveness of learning guides and a large majority expressed support for using learning guides in lieu of textbooks.

### GROUP WORK AND ASSESSMENT

- Teachers appreciated the effectiveness of group work in enhancing creativity and communication skills. However, about half the teachers found it difficult to teach using group work. Formative assessment methods such as checking in pairs, group checking, and project work is more often found in VNEN schools, but traditional teachers also used the recently introduced assessment methods.

### STUDENT GOVERNMENT

- The primary purpose of student government is to help inculcate values of service and

community and to help develop socio-emotional skills of responsibility and leadership. A strong positive outcome concerns diversity and gender equity, with many girls exercising their skills as student leaders.

### PARENTAL ENGAGEMENT

- Parental involvement in the day-to-day activities of the school forms an important part of the VNEN concept, but implementation of this activity appears to have been limited to some schools. The tendency was for parents to be invited only once a year to help make classroom artifacts and less than once a year to demonstrate or teach a skill.

### IMPLEMENTATION INDEX

- The painstaking construction of an implementation index lies at the heart of this study. Based on the elements of the VNEN model, an index is constructed from information gathered together from principals, teachers, students, and parents. The resulting index shows the continuum of VNEN practices—while overlap is minimal, within the group of VNEN schools, there was a wide dispersion of the index, as shown in Figure 4.13.

.....

The VNEN model included many elements—some of them such as seating arrangements and classroom artifacts were easy to implement; other elements such as advanced assessment methods and student government were more difficult. The final result is that VNEN implementation took place along a distribution, with some schools applying nearly all elements and other schools implementing only a few of the elements.

## Endnote

1. The relationship between Escuela Nueva and the development of civic values has been investigated in detail in the case of Colombia and Guatemala; see

Chesterfield, 1994, Baessa, Chesterfield, and Ramos, 2002 and Forero-Pineda, Escobar-Rodríguez, et al., 2006. The study in Guatemala found a positive relationship between democratic behaviors and reading achievements of children in Escuela Nueva schools.

# Parents, Home, and Community Situations

# 5

The purpose of this chapter is to provide an overview of the home context of the students as uncovered from a survey of the parents. This chapter presents findings in three sections. In the first section, we present a brief overview of the parent demographics. The second section presents the beliefs, values, and personality of the parents. The third section presents findings regarding the knowledge, practices, and preferences regarding VNEN, including the study environment at home and parental interaction with the VNEN model.

## 5.1 Parent Demographics

While the selection of the random sample for the study was based on the school characteristics, it is important to determine whether there was parity or equality between parents of children in the VNEN and control group samples. We consider two main sets of variables—family demographics in terms of dwelling conditions and the educational attainment of parents, as well as their occupation groups.

### 5.1.1 Family and Living Conditions

As expected, mothers are the primary caregivers for the children, and they take care of the main aspects with regard to the child's education. The program was directed toward high ethnic minority areas, so it is not surprising that more than a third of the parents report being from ethnic minorities. As seen in Figure 5.1(b), the ethnic background of the parents is the only variable

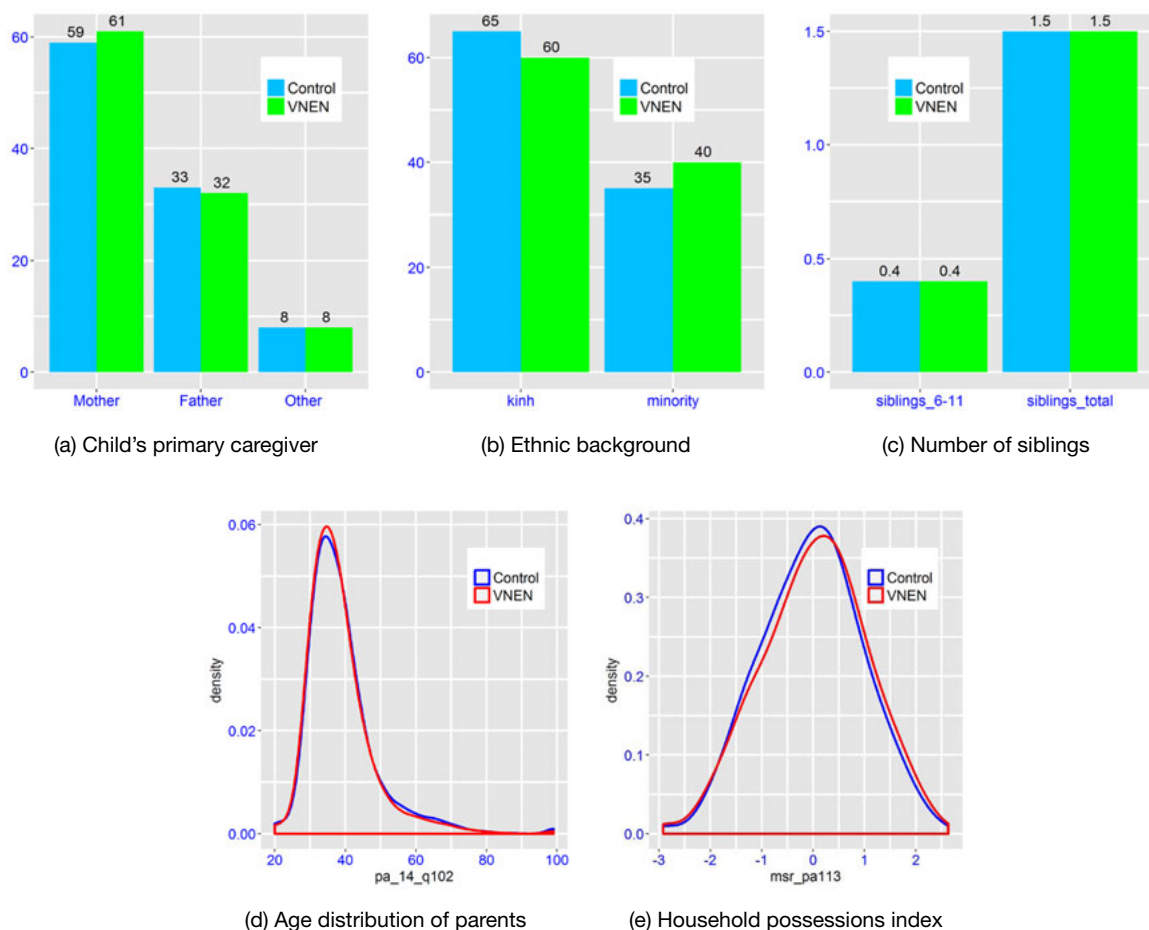
for which there is an appreciable difference that is statistically significant. There are slightly more ethnic minority parents in the VNEN sample. Both VNEN and control group families were of similar size with between two to three children, based on the reported number of siblings. There is no difference with regard to parents' age and their wealth as measured by an index of household possessions.

### 5.1.2 Education and Labor Market

Unlike for the sample of students, teachers, and principals who were interviewed every year, we did not expect to uncover major differences from year to year in the parent interviews. Two rounds of parental interviews were carried out (for the second and third year of the study), but most information was collected only one time. As seen in Figure 5.2, the parent population is roughly equally split between those who have a primary level of education or below and those with higher than a primary level. Lower secondary education or nine years of schooling is the most commonly reported parental educational level. It is remarkable that there is a parity of education between mother and father, a reflection of the past investments for education made in Vietnam.

The fact that the average level of education is less than the high school level has an important implication regarding the implementation of a reform of the nature of VNEN. VNEN seeks to support the transformation toward a competency based curriculum, and some of the methods such as

**Figure 5.1** Family Demographic Situation

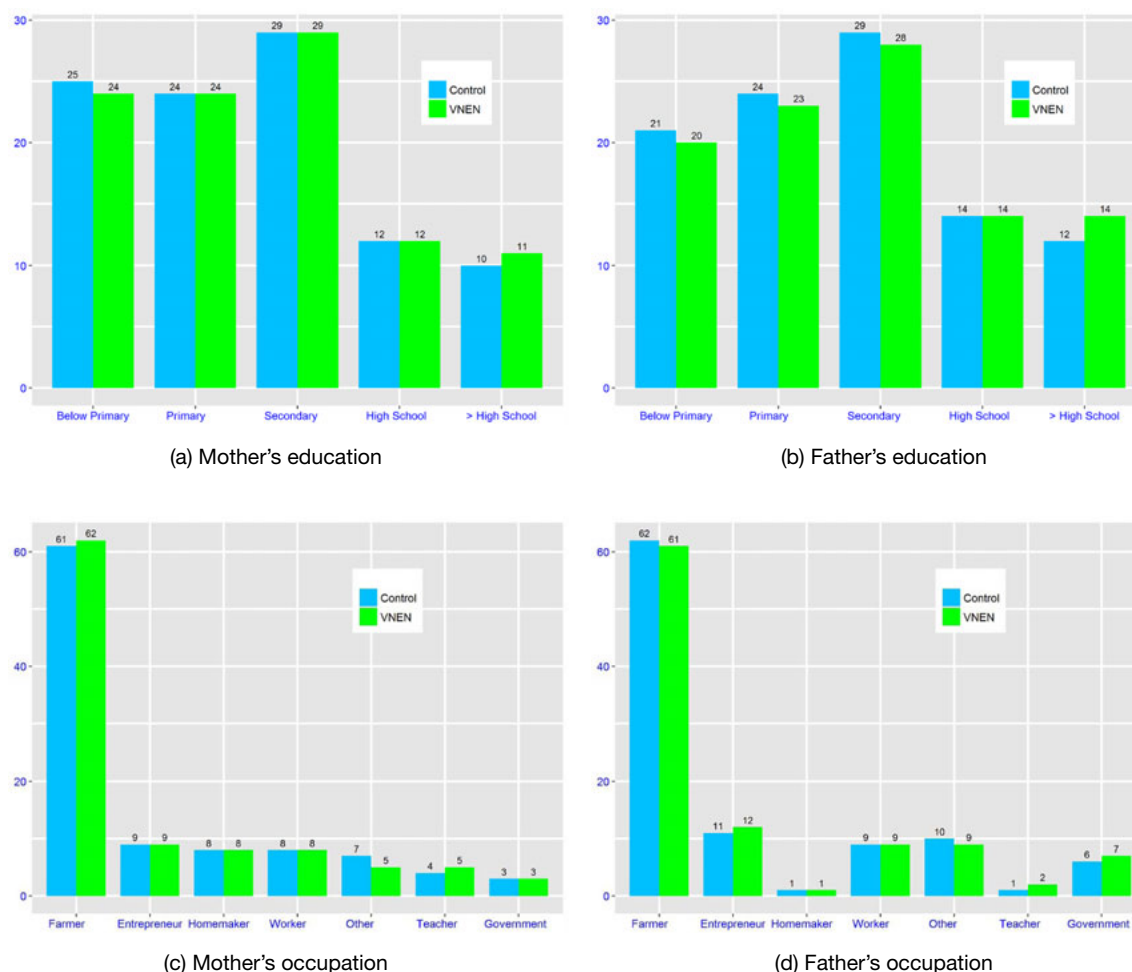


Source: VLEN Impact Evaluation study primary data, Authors calculations.

encouraging questioning from children are quite contrary to the upbringing of most of the parents. Later in this chapter we look more closely at parent views according to their education levels. Figure 5.2 also shows that nearly two-thirds of the parents were farmers, with both mother and father reporting that occupation. Not reported in Figure 5.2 is that the average monthly income

level of parents from both groups was between VND 2 to 3 million, equivalent to about USD 300 in PPP terms. Only half of the parents reported having only one job. A further one-fourth of parents reported two jobs or more than two jobs. Regardless of income or education levels, 97% of parents reported that they wanted their child to proceed to lower secondary school.

**Figure 5.2** Parents Education and Occupation Situation



Source: VNEN Impact Evaluation study primary data, Authors calculations.

## 5.2 Parent Beliefs, Values, and Personality

Parental beliefs and values are particularly important for VNEN because in a sense the VNEN program seeks to bring about a positive cultural transformation. If parents do not believe in the need for a cultural transformation, it is likely that they would not support the VNEN model. Even if

they were neutral about the pedagogical model, children would not receive a consistent message at home and in the school, and the dissonance would likely not be healthy for the children. Hence what parents think about the education being imparted to their children, and the values that parents seek to instill in children are crucial for the success of the educational reform. Personality of the parent also affects learning and it would be important to ascertain equality



between control groups and VNEN groups for the purpose of impact evaluation.

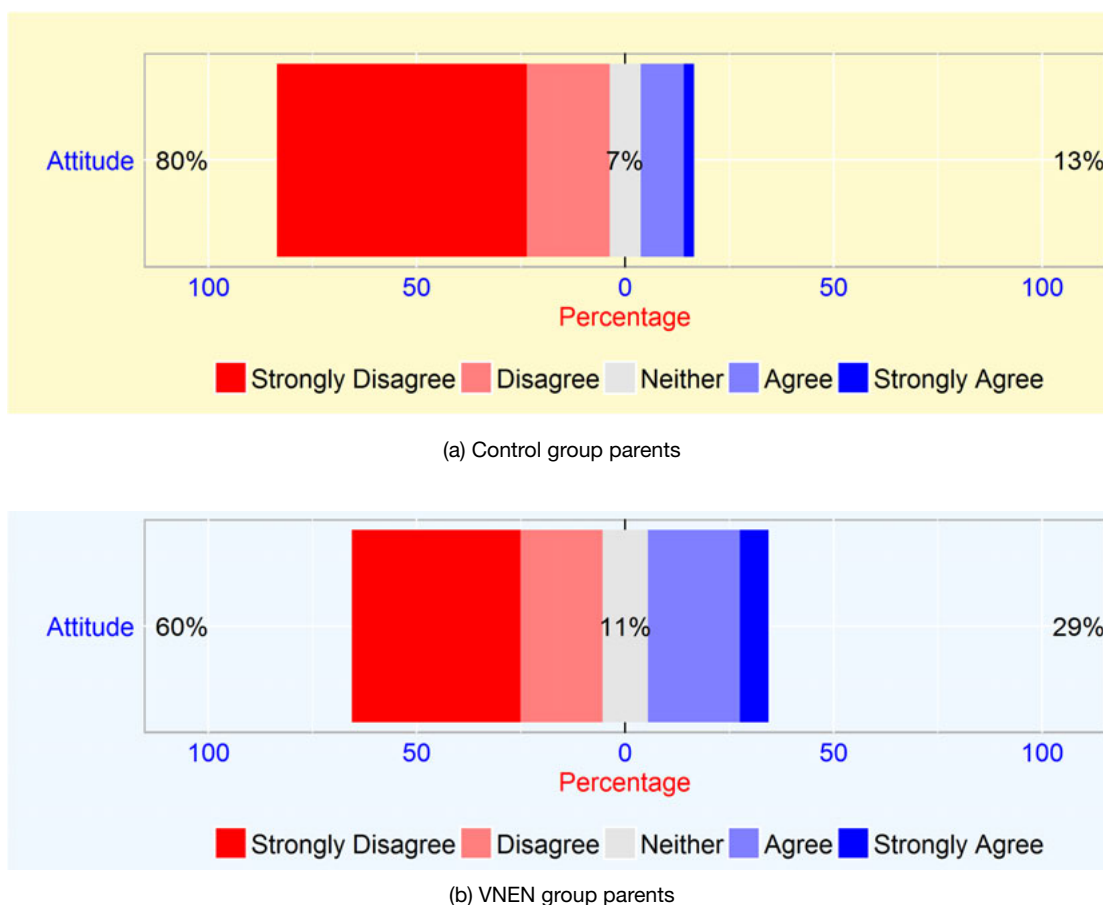
### 5.2.1 Parental Beliefs Regarding Education

We asked the same question to parents as we had to principals and teachers (reported in Sections 2.3 and 3.2 respectively) about the satisfaction with the traditional model. Specifically, they were asked how much they agreed or disagreed with the statement: “Vietnam’s traditional teaching model where children sit in rows, facing the teacher/blackboard is good, there is no need for reform.” Choices for parents ranged from “Strongly Agree” to “Strongly Disagree” on a

five-point Likert scale. The results for control and VNEN groups are presented in Figure 5.3. The results show that 80% of the control group parents disagreed with the statement, and a smaller 60% of VNEN group parents disagreed.

Even though a majority of VNEN parents disagreed with the statement that change was not needed, the proportions are lower than the principals and the teachers. Principals are the biggest believers in the VNEN model, with a consistent 75% believing in the need for change. We did not measure evolution in parents’ attitude, but clearly for the success of the reform, the findings indicate the need for deeper engagement of the parents.

**Figure 5.3** Parents Opinion about Maintaining Traditional Model, 2016



Source: VNEN Impact Evaluation study primary data, Authors calculations.

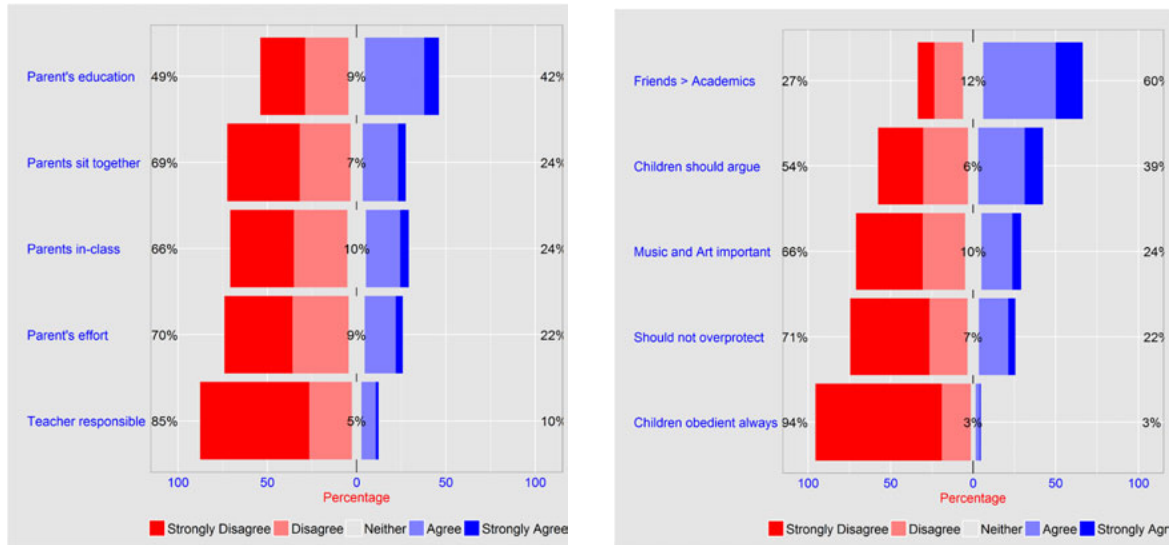
It is usually difficult for parents to acknowledge a problem with the schools or school system that they send their children to. The finding has been consistently reported in the United States, where nationally representative parent surveys were carried out for many decades. Negative opinions about the education system decline consistently as parents are asked about public schools nationally, state-wide, locally, and so on, as reported in Rose, Gallup, and Elam, 1990 and Tompson, Benz, and Agiesta, 2013. There has been a large body of research in advanced economies that indicated that parenting and parental resources were more important than the school attended by the child and the resources provided by the school. For a long time, it has been thought that the situation was different in poor countries—with public schools being typically deprived of resources, it was often found that the relationship was different (Fuller, 1987). Perhaps in the case of Vietnam sooner than other countries, the challenge is now shifting toward what parents do. We probed further into parental attitudes regarding education.

We asked parents to respond to a set of Likert scaled items regarding the role of parents in education and about child characteristics that were important. Figure 5.4 indicates the findings, with the left-hand panel showing the direct education related items and the right-hand panel showing the items regarding importance of child outcomes. There was nearly a complete coincidence between parents in the VNEN and control groups, but the responses are still interesting to explore. Starting from the lower bar of panel (a) 85% of parents disagreed that ‘the teacher bears the primary responsibility for the child’s educational development.’ Parents also disagreed (70%) with the statement that ‘the child’s performance on homework assignment depends on the parents’ efforts’. Only 24% of the parents agreed with the statement that ‘parents should participate regularly at in-class activities’. Likewise, only 26% of the parents agreed that parents need to sit together with children while they study and about half of the parents disagreed that

children’s performance on homework depended on the level of education of parents. Turning to the right-hand side, it is useful to observe that even though Vietnam is classified as belonging to a Confucius heritage culture with high emphasis on authority values (Dalton and Ong, 2005), 94% of parents disagreed that children need to always be obedient. At the same time, only 27% of the parents disagreed that it is more important for their child to make many friends than to do well academically.

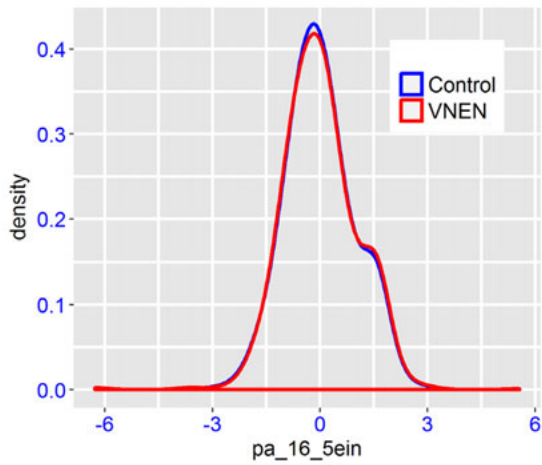
The relationship between parental effort, school characteristics, and student effort and achievement has acquired renewed interest, and some of the recent findings need to be explored further for developing country contexts like Vietnam. Houtenville and Conway, 2008 explore the relationship between parental effort, school resources, and student achievement. They find sizeable impacts of parental effort that are not captured by information regarding parental background such as income and education. Parental effort is defined through reports of parent actions: discussion with children of school activities, academic matters, and course selections as well as participation in meetings and volunteering for school activities. De Fraja, T. Oliveira, and Zanchi, 2010 present an interesting game theoretic model which combines the effects of efforts from parents, children, and the school. In their empirical estimates, they find that efforts tend to build on one another—parental effort spurs further effort from the child and also from teachers and other actors at school. The paper concludes with the interesting observation that “It may be easier and more effective to stimulate effort in households with low socioeconomic background rather than hope for their economic conditions to change.” Another promising approach is from Dufur, Parcel, and Troutman, 2013, who studied the issue through the lens of social capital, with family social capital defined from communication, trust, and ‘active engagement in the child’s academic life.’ They contrast the impact of family social capital with

**Figure 5.4** Parent Beliefs Regarding Education and Values

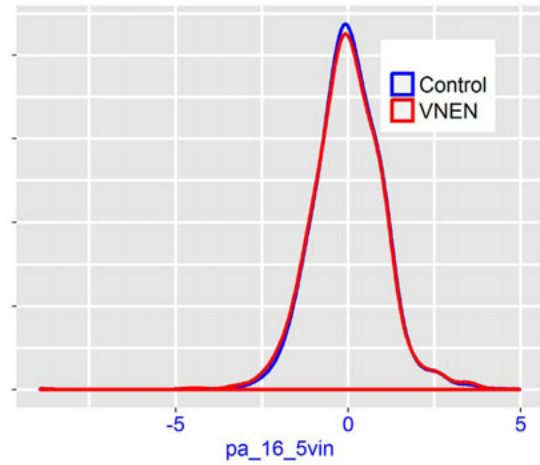


(a) Education by item

(b) Values by item



(c) Education composite index



(d) Values composite index

Source: VLEN Impact Evaluation study primary data, Authors calculations.

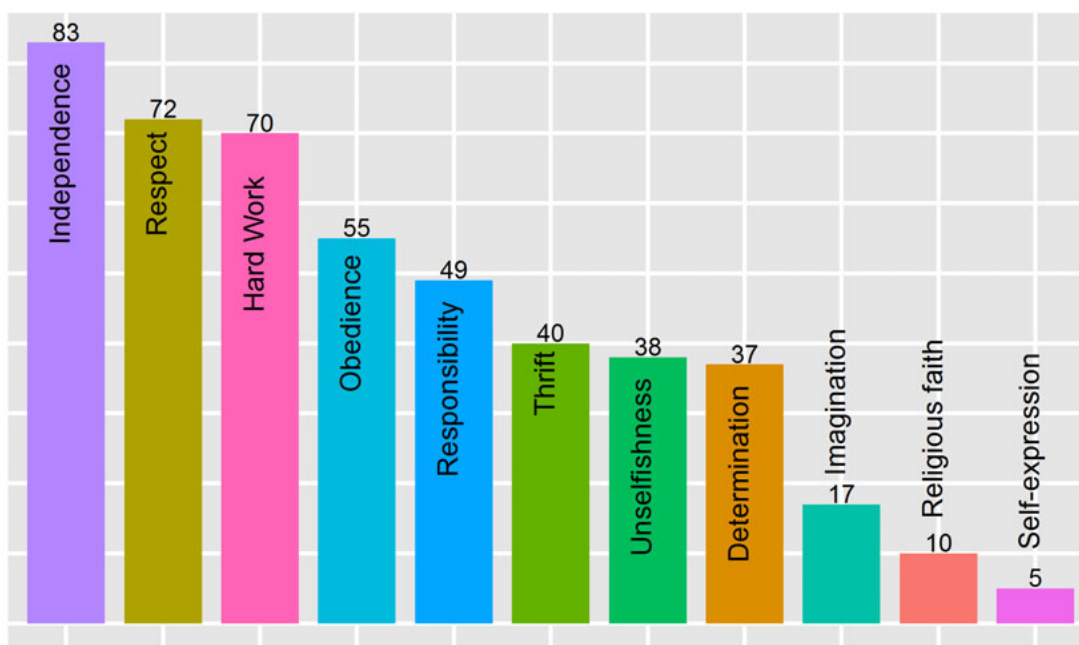
school social capital, which includes teacher morale and the ability of teachers to address the needs of individual students. These aspects are closely related to the VLEN methodology which puts emphasis on both these kinds of social capital. Further research can build on the intriguing initial findings of this impact evaluation study.

### 5.2.2 Values Children Learn at Home

In addition to the Likert scaled question regarding educational and child development values

presented in Figure 5.4, parents were asked to select up to five most important values from a list of 12 values that children can learn at home. In this case as well, there was not any variation between VLEN and control group parents, which bodes well for unbiased inference regarding impact evaluation. The findings, presented in Figure 5.5, are important with regard to the nature and communication with parents that may be required for the education reform in Vietnam to succeed.

**Figure 5.5** Qualities Learned at Home



Source: VNEN Impact Evaluation study primary data, Authors calculations.

Findings reported earlier regarding the sometimes ambivalent attitude of parents about the traditional model suggest the need to understand better the content and nature of the message required by reform proponents. By far the highest mention of values from parents (83%) was for 'Independence', closely followed by 'Respect', 'Hard Work', 'Obedience' and 'Responsibility'. The values of 'imagination' and 'self-expression' are at the lower end of the responses, together with 'religious faith', which is widely known not to be critical in Vietnam among large segments of the population.

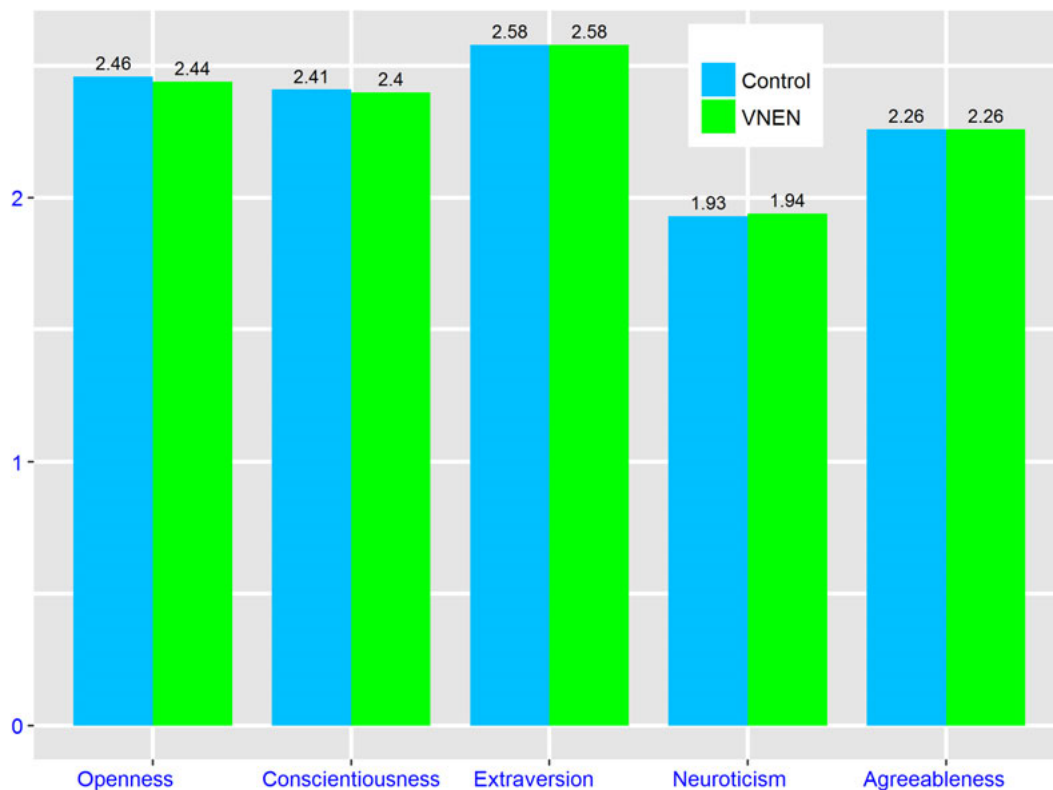
To some extent the views of the parents may appear to be contradictory—how will it be possible for a child to become independent without also being given rein to develop their self-expression? Perhaps the parents want the child to develop independence within a circumscribed set of boundaries, which may or may not allow freedom of self-expression. However, the low importance given to imagination cannot be explained in this way. Clearly, values such as thrift and determination are indeed learned at home,

but parents may need to be made more aware that school is a place where such values can be strengthened or deepened. Responsibility, for instance, can be developed by learning to take care of small tasks through roles in the student government committees at school. Parents may not be aware of the knowledge developed by educational experts regarding the close linkages between non-cognitive and cognitive skills. But the fact that they care about these qualities may provide an opening to mold public opinion in favor of reform that seeks to enhance competencies of children along these dimensions.

### 5.2.3 Parental Personality

We conclude this section with an overview regarding parental personality. As expected that does not vary across VNEN and control group parents in any discernible way. The idea that the personality of parents, particularly mothers, has an impact on child outcomes has been studied for a long time in the literature on personality (Kochanska, Clark, and Goldman, 1997). In the

**Figure 5.6** Parental Big Five Personality Traits



Source: VNEN Impact Evaluation study primary data, Authors calculations.

past decade or so there has been a veritable explosion of studies relating personality to various human outcomes. The empirical validation of the so-called ‘Big Five Inventory’ or BFI plays a big role in this (John, Naumann, and Soto, 2008). BFI refers to the finding that a substantive portion of personality differences across human beings of diverse ages and cultures can be captured through five personality dimensions—openness, conscientiousness, extraversion, neuroticism, and agreeableness. Metsäpelto and Pulkkinen, 2003, and Urman, 2012 provide instances of using BFI to explore the relationship between personality and parenting techniques that lead to child outcomes. In the case of this study, we utilized a short form of the BFI inventory from Lang et al., 2011.

Figure 5.6 shows the measures of BFI dimensions for the surveyed parents. It shows the equality between the control group and VNEN group.

The measures are based on a shortened 15 item list of items—parents responded to a five-point agree-disagree scale of items such as ‘I am a person who is talkative’, a constituent item for the extraversion score, and ‘I am a person who values artistic, aesthetic experiences’, an item on the openness dimension. Scores on each dimension are arithmetic averages, with reverse coding for some items.

### 5.3 Knowledge, Practices, and Preferences Regarding VNEN

#### 5.3.1 Parents Understanding of VNEN Activities at School

Awareness about VNEN was not universal in VNEN schools—only 71% of VNEN school parents mentioned knowing about VNEN. At the same time, 37% of control group schools mentioned

**Table 5.1** Parent Reports of Classroom Activities

Classroom Feature	Variant	Control Group	VNEN Group
Seating arrangement	Group seating	22%	85%
	Traditional	69%	8%
	Do not know	10%	7%
Didactic materials	Learning guide	5%	42%
	Textbook	81%	38%
	Do not know	14%	20%
Teaching method	Facilitate groups	26%	65%
	Podium lecture	51%	13%
	Do not know	23%	22%
Student government	SG does exist	43%	80%
	No SG	23%	3%
	Do not know	34%	17%
Warm-up games	Game played	51%	63%
	Game not played	17%	9%
	Do not know	33%	28%
Student assessment	Useful written comments	92%	92%
	No useful written comments	2%	2%
	Do not know	6%	6%

Source: VNEN Impact Evaluation study primary data, Authors calculations.

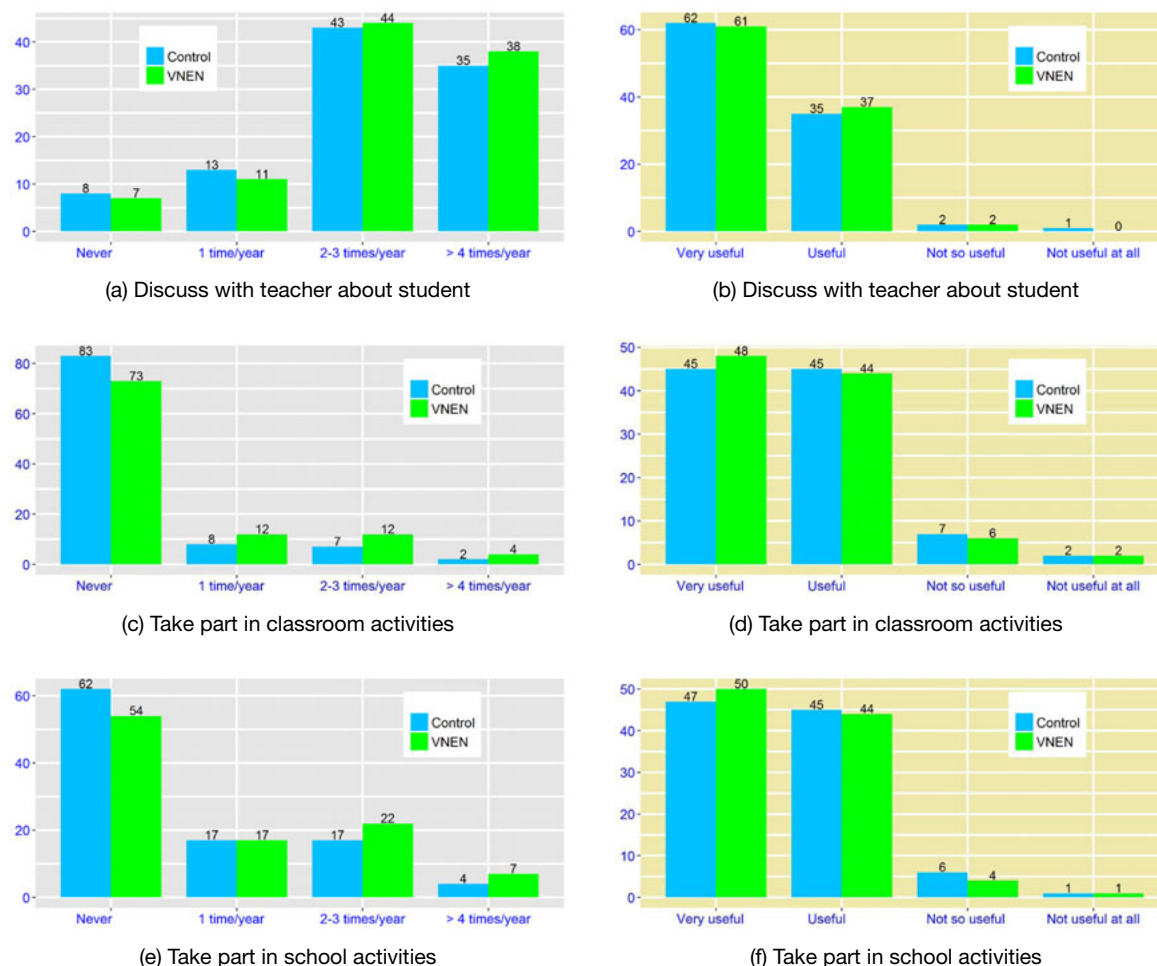
knowing about VNEN. The issue of implementation heterogeneity across the VNEN and control groups has been discussed in detail in the previous chapter. The roughly 6,000 parents who knew about VNEN were asked further about their opinion regarding VNEN. It is possible that some VNEN group parents may not have been aware of the VNEN name, but they were familiar with the elements implemented in their child's school. Table 5.1 shows the responses from all parents regarding a set of VNEN elements.

The seating arrangement and student government appear to be the elements with the highest

salience among VNEN parents. 85% of VNEN group parents were aware about the group seating at school. 80% of parents reported about student government, which confirms anecdotal evidence about some parents becoming closely involved in 'lobbying' the teacher for inclusion of their children in student government. As mentioned earlier, the assessment method adopted for schools in the VNEN program was mandated for all primary schools around the second year of the program, which is reflected in 92% of parents reporting receiving written comments on the performance of their children at school.



**Figure 5.7** Parent Participation and Opinion about Usefulness



Source: VNEN Impact Evaluation study primary data, Authors calculations.

### 5.3.2 Parents Participation in VNEN Activities at School

Figure 5.7 shows variation in the extent of parental participation in school for three activities. The first item was discussion with parents about the child’s academic performance at school and behavioral aspects. This is an activity that is expected to take place for all schools and panel (a) corroborates this expectation, with panel (b) indicating that nearly all parents find this activity to be very useful or useful.

Parents in the VNEN program are expected to take part in activities in the classroom and the school.

For instance, they are expected to collaborate in the presentation of artifacts related to real life in the learning corner in the classroom. A number of schools have initiated particular days of the week for parents to come to school to share or teach about customs and practices of the local community. For instance, there could be activities related to cooking of local delicacies or the making of handicrafts or other livelihood related skills. Table 5.1 shows that this particular aspect of VNEN may have been implemented only in a few schools, with a very high 73% of VNEN parents reporting never having taken part in classroom activities and 54% never having taken part in school activities.

### 5.3.3 Home Academic Environment for Student

Table 5.2 indicates parity between control and VNEN groups with regard to efforts made by students and only a slightly higher mention of homework assignments related to real life for children attending VNEN schools. The phenomenon of private classes in Vietnam has been well researched and is an important policy issue (Dang, 2007). Nearly one out of five children are taking additional classes. Future research is needed to determine the impact of additional classes on the educational reform.

### 5.3.4 Parent Opinion and Preference Regarding VNEN

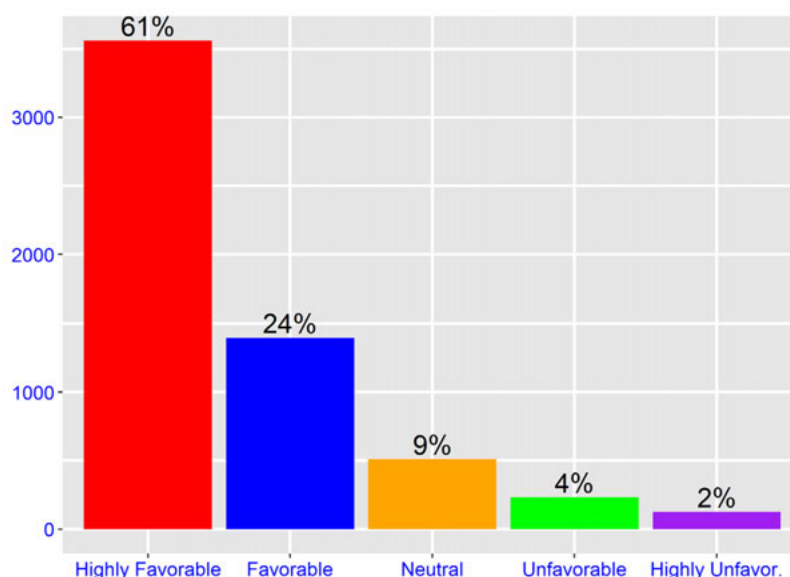
Figures 5.8 and 5.9 present the opinion of parents regarding VNEN among the 6,000 parents (54% of the overall sample) who reported being aware about VNEN. The 85% of parents who expressed a positive opinion about VNEN were asked to pick out the main reasons for their opinion. Figure 5.9 indicates that the top three reasons were better academic performance, improved communication skills, and improved leadership skills. In the next chapter we examine the evidence from standardized tests and whether indeed the performance of children in VNEN schools was better.

**Table 5.2** Home Study Environment and Activities

Home Environment Aspect	Control Group	VNEN Group
Permanent study corner exists	87%	87%
Assignment for real life application	53%	63%
Help from parent when doing real life application	54%	58%
Student takes extra private classes	20%	17%
Average study time per day (hours)	1.6	1.5
Average time per day carrying out chores (hours)	1.5	1.5
Parent help studying hours per week	2.05	2.00

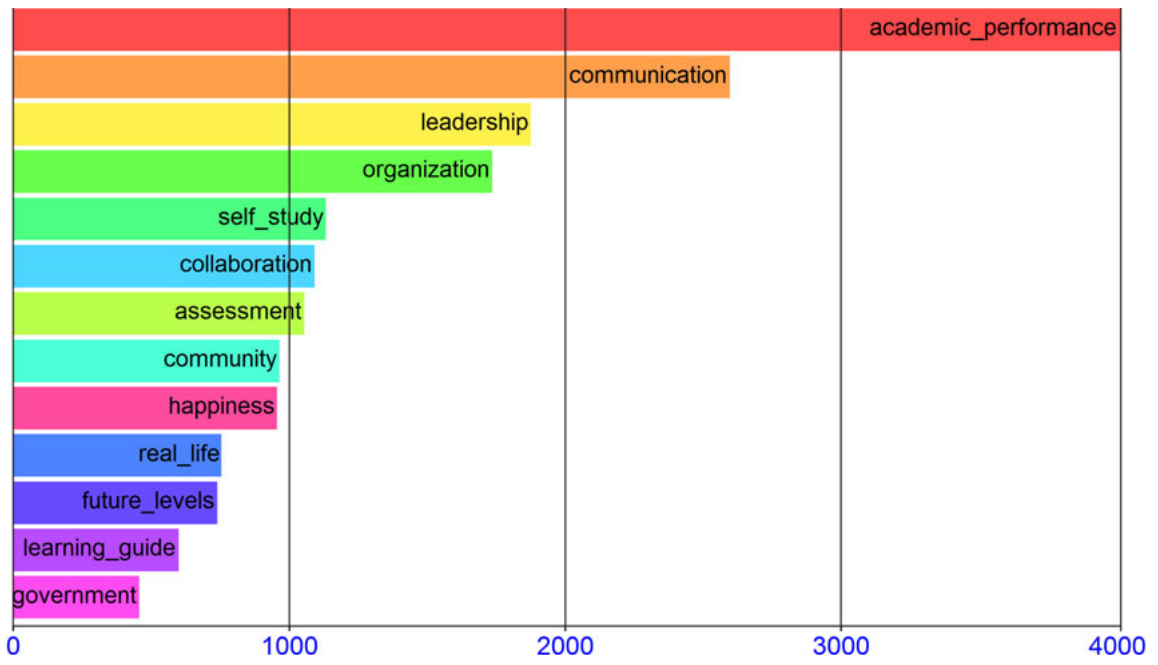
Source: VNEN Impact Evaluation study primary data, Authors calculations.

**Figure 5.8** Opinion about VNEN among Parents Who Know about VNEN



Source: VNEN Impact Evaluation study primary data, Authors calculations.

**Figure 5.9** Reason for Positive Opinion of Parents about VNEN



Source: VNEN Impact Evaluation study primary data, Authors calculations.

# TAKEAWAYS:

## Parents Home and Community

This chapter described the background of parents in terms of demographics and occupation, followed by a description of parents' values and beliefs regarding education. It was rounded off with findings about their opinions regarding VNEN.

### DEMOGRAPHICS

- Nearly two-thirds of the parents are farmers, and the same proportion have less than a high school level education. It is interesting to note that there is parity of education level between mothers and fathers, something not common for a country with Vietnam's level of per capita income. One-third of the parents are from ethnic minorities. These figures provide a useful overview of the context of the VNEN program.

### PARENTAL BELIEFS

- It is quite interesting to note that only 60% of VNEN school parents as compared to 70% of VNEN teachers and 75% of VNEN principals disagree with the statement that the traditional model is doing fine. A much higher 80% of control group parents felt the same way. This finding indicates the importance of involving parents more closely in the reform effort.

### VALUES

- Even though the parents are mostly farmers with less than a high school education, some of their educational views are quite progressive. Of the parents, 85% disagreed with the statement that the teacher bore primary responsibility for the child's educational development, and 94% of parents disagreed with the notion that children should always be obedient. However, pointing to the low outreach toward parents, only about a quarter of the parents agreed that parents should regularly participate in class activities.

### PARENTAL PARTICIPATION

- Parents appear to know a lot about the elements of VNEN reform being implemented at their child's school including the seating arrangement, the use of warm-up games before each lesson, and the functioning of student government. However, a high 73% of VNEN parents report never having taken part in classroom activities and 54% reported never having taken part in school activities. Parent discussions with teachers about the student's performance was evenly matched across VNEN and control group schools.

### OPINION ABOUT VNEN

- All parents, whether of children going to VNEN or control group schools, were asked if they were aware of the VNEN model. Just over half of the 6,000 surveyed parents mentioned being aware of VNEN. Those parents were asked about their opinion about VNEN. Of the parents, 85% reported having a highly favorable or favorable opinion about VNEN. The top three reasons for their favorable rating of VNEN was superior academic performance and better communication and leadership skills.

.....

Parents are a key figure in VNEN, which is perhaps different from other kinds of educational reform that focus only on teachers and school authorities. VNEN seeks to engage parents at school and with education at home in values, livelihood skills, and application or practice exercises at home to increase relevance of education. In practice, parental engagement under VNEN appears to be sporadic at best.





# Cognitive and Non-Cognitive Student Outcomes

# 6

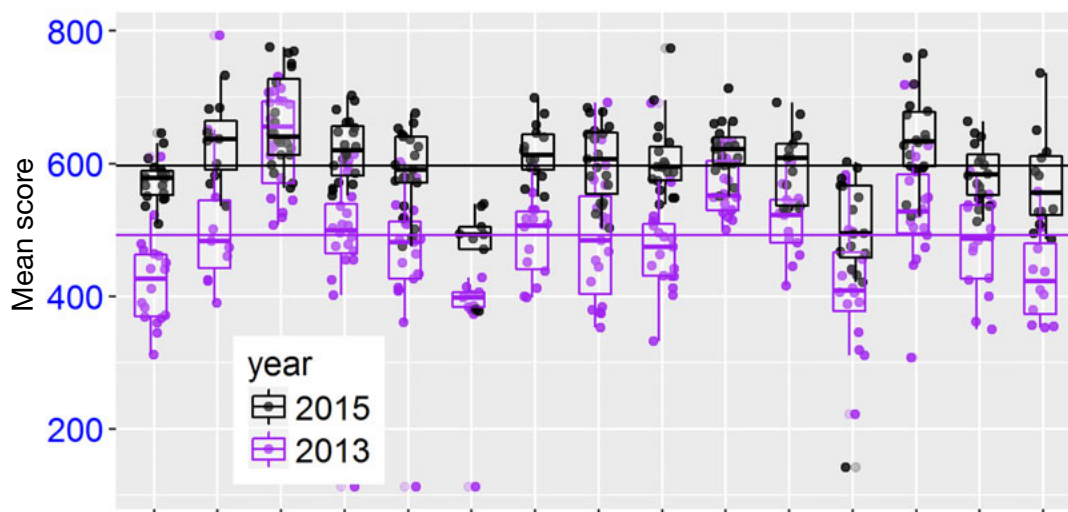
## 6.1 Visual Representation of Test Score Trends

### 6.1.1 Overall Trends for Cognitive Scores

At the outset of this chapter, it is very important to have clarity about the measurement of cognitive outcomes. The study used standardized tests designed to follow the cohort from Grade 3 in 2013 to Grade 5 in 2015. About 15 to 20 randomly selected students were chosen from each school at the beginning of the study and followed throughout the three years. Figure 6.1 shows a window into what the test score data looks like, for a random sample of 15 schools chosen for this demonstration. The scores used in the analysis are based on the results for Vietnamese using the Item Response Theory to obtain a scaled and

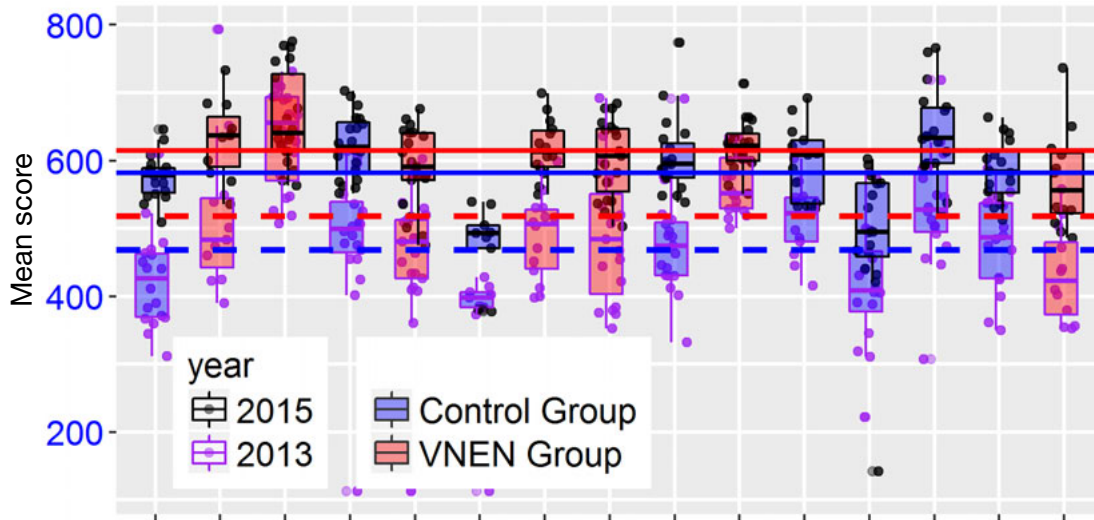
comparable score across years; the mathematics score (not shown in Figure 6.1) was also computed in the same way. The dots represent the achievement of an individual student and each box of the box plot represents a school with the central line being the mean and the edges of the box representing 25th and 75th percentile scores for the school. The dots are 'jittered' so that individual dots can be visible. The purple and black lines in Figure 6.1 represent the year wise means for this particular random sample, with the mean score being 500 for Grade 3 in 2013 and 600 for Grade 5 in 2015. The very important takeaway from Figure 6.1 is the imprecision with which cognitive achievement is measured. The only useful conclusions that can be made from analysis of data like this are through techniques of statistical inference.

**Figure 6.1** Vietnamese Test Scores for 15 Randomly Selected Schools



Source: VNEN Impact Evaluation study primary data, Authors calculations.



**Figure 6.2** Same Schools with VNEN Information Added

Source: VNEN Impact Evaluation study primary data, Authors calculations.

This point becomes clearer looking at Figure 6.2, which is the same as the earlier figure, with information added through shading of whether the school was originally classified as a VNEN school or a control group school. It so happens that in these particular randomly selected 15 schools for demonstration purposes, eight (in blue) were control group schools and seven (in red) were VNEN schools. The means are represented by the horizontal lines in respective colors, with dotted lines being the score in 2013 and filled lines the score in 2015.

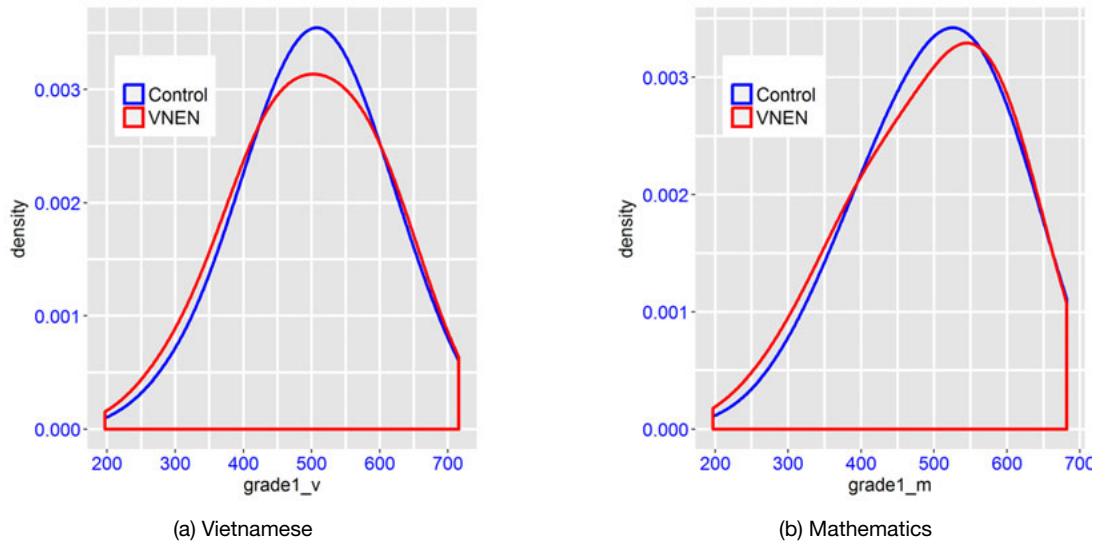
The fact that in 2013 the red line is already above the blue line reflects the fact that the baseline survey was conducted in December 2012 after the VNEN program had already been in existence for about 18 months. There was no standardized test available to compare the schools at the start date of the VNEN program in June 2012.

We do not have standardized test data before the baseline. However, we do have data from the school records when the cohort was in Grade 1 about the performance of students in mathematics and Vietnamese. Indeed, the school's overall percentage of children who were weak

performing in Vietnamese was one of the targeting criteria for the project and was included in the propensity score matching equation. The school records have data about the number of Grade 1 children who were in one of four categories—excellent, good, average, and poor. As schools are of different sizes, we first convert this number into a percentage. We then compute a raw overall score for each school by weighting excellent, good, average, and poor students by 4, 3, 2 and 1 respectively. Finally, in order to increase the viability of comparison with the score from testing, we standardize the resulting raw score to a mean of 500 and a standard deviation of 100. The resulting score is not purely normal because it is truncated at the higher end, as seen in Figure 6.3.

The advantage of this study is the relatively large sample size. The random sample for demonstration purposes used for Figures 6.1 and 6.2 happened to show the VNEN schools on an average doing better than the control group schools, but for the small sample of 15 schools it could have been the other way as well. As we increase the numbers considered, in spite of the considerable noise in the data that can be seen clearly with the window provided by Figures 6.1 and 6.2, we are

**Figure 6.3** District FSQL (Fundamental School Quality Level) Audit



Source: VNEN Impact Evaluation study primary data, Authors calculations.

able to progressively reduce the noise and get a sharper signal. We present the key summarized values in the panel of four graphs in Figure 6.4.

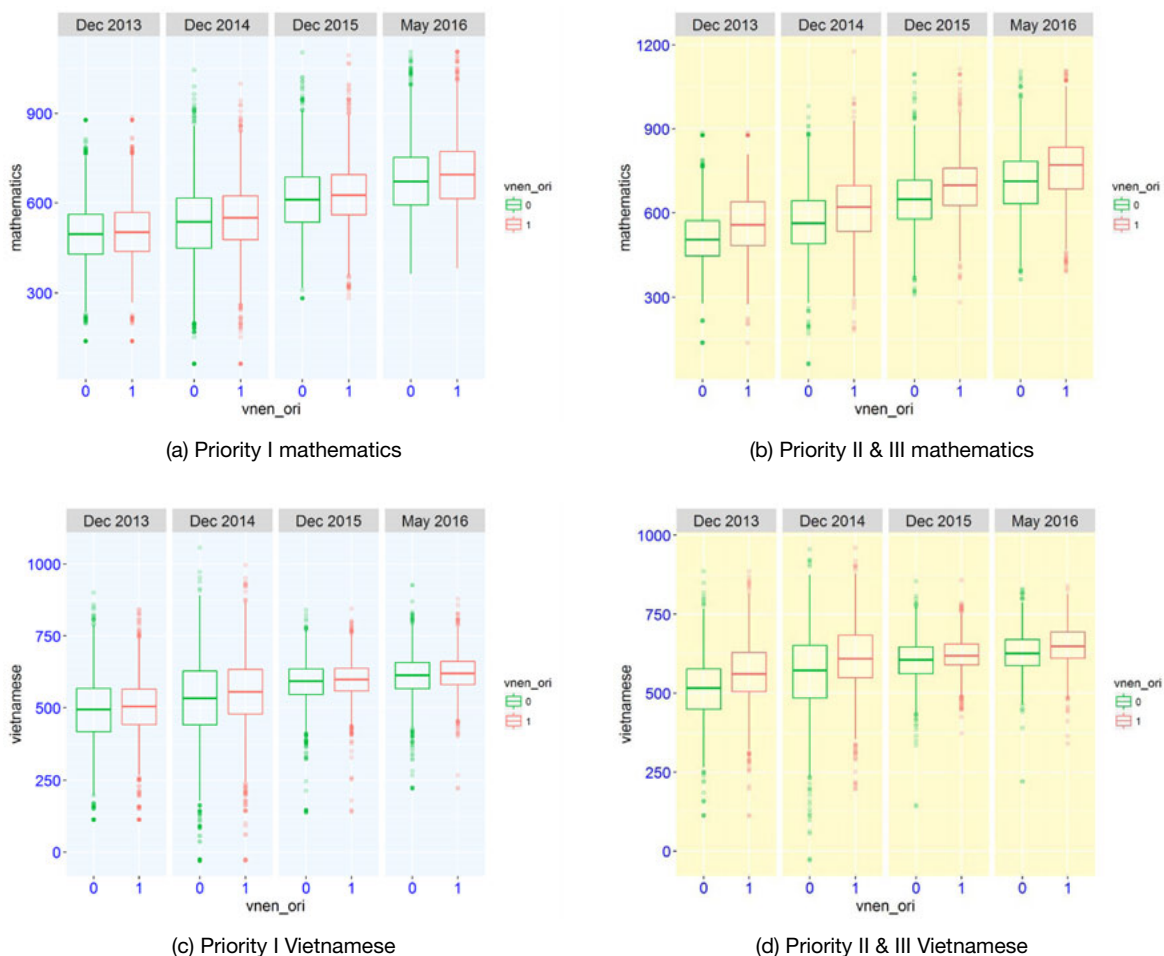
Figure 6.4 shows the summarized distributions of test scores for the control group and VNEN group schools matched according to propensity scores following the elimination of control group schools that adopted VNEN and VNEN group schools with low implementation indexes. The tests were constructed so as to have a mean of 500 at the baseline in December 2013. Successive pairs of years had matching items which allowed the test difficulty to be calibrated for a comparable score. Each panel shows how the test scores went up as the students went up the grades. The tests were also designed so that the mean score in 2015, two years from the baseline, would be 600. The score is scaled so that the standard deviation is 100, and it gives a good rubric to understand the evolution of test scores. Moving one standard deviation requires about two years of development. In this setting, the focus of investigation is the comparison between the green boxes showing control group schools and the red boxes showing VNEN schools. Across all the groups, the red box is seen to be on par or higher than the green box. The differences are

larger for mathematics than for Vietnamese and for Priority II & III schools as compared to Priority I schools. It is not immediately obvious from the scale of these graphs, but as shown subsequently in the quantitative parts of this chapter, the biggest impact of the program appears to have taken place in the first year of the survey and the second year of the program, that is between 2013 and 2014, with the subsequent increment from 2014 to 2015 being lower than the initial increment. Test results of May 2016 are also reported in the figures but not used in the quantitative analysis because of lack of compatibility.

### 6.1.2 Trends in Cognitive Scores by Priority I Provinces

Figure 6.5 looks at the trends by a group of nine provinces. Though the sample is representative only up to the level of priority order of provinces, these are the provinces which had at least 20 schools in the sample and provide some suggestive insights. The black dotted line in each panel shows the score of 500, which was the initial national mean for Grade 3. One can observe interesting contrasts. While VNEN schools initially underperformed in some provinces, the performance gap caught up by the end of the program;

**Figure 6.4** National Trends in Cognitive Scores



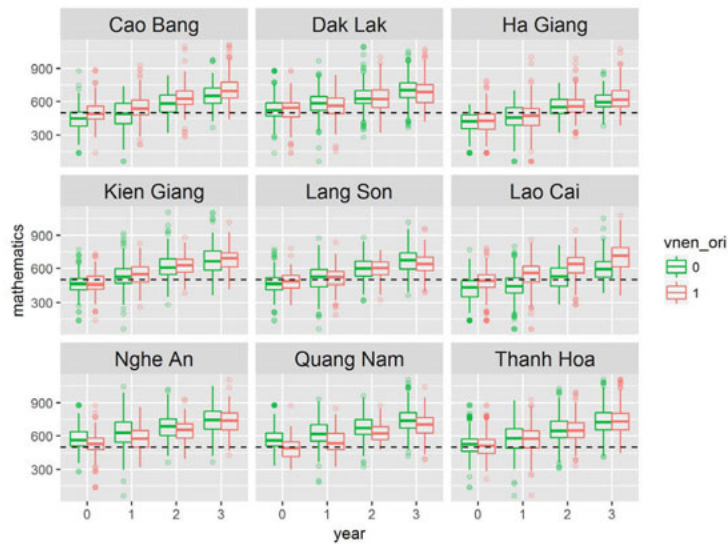
Source: VNEN Impact Evaluation study primary data, Authors calculations.

in some cases there has been a parity from the beginning to end. In some cases there was a positive gap for VNEN that has widened over time.

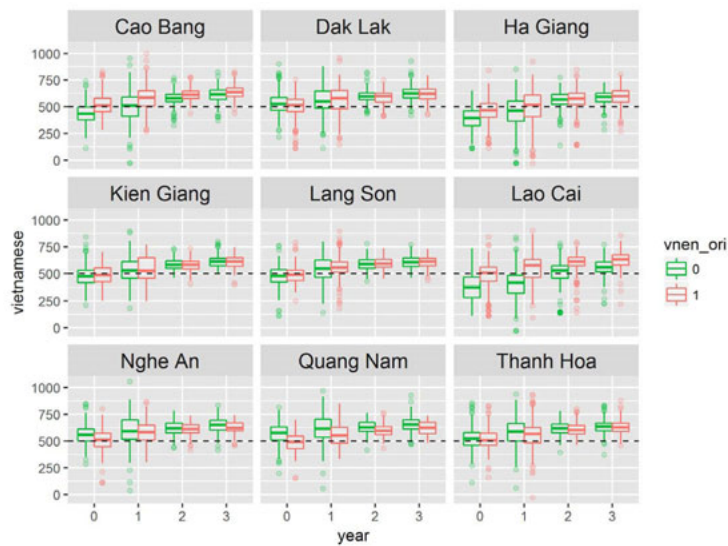
The province level variations reinforce the importance of the implementation index because provincial authorities would have been the key decision makers regarding promoting the

adoption of VNEN elements across all primary schools. Local decision making would take place only in the context of leadership from the provincial level. A key reason for this is the control of financial resources. Control group schools which decided to adopt the model partially or fully would likely have needed financial support from the provincial government.

**Figure 6.5** Trends in Provinces (at least 20 schools in sample)



(a) Mathematics



(b) Vietnamese

Source: VNEN Impact Evaluation study primary data, Authors calculations.

## 6.2 Impact Evaluation on Test Scores

To identify the impact of VNEN on learning outcomes, we take two approaches. First, the average treatment effect is estimated with propensity scores that essentially compare similar schools between the intervention (treatment)

and nonintervention (control) groups. Second, propensity score-based school weights are used in the first-differenced form, which differences out unobserved fixed components of errors that can otherwise potentially bias impact estimates.<sup>1</sup>

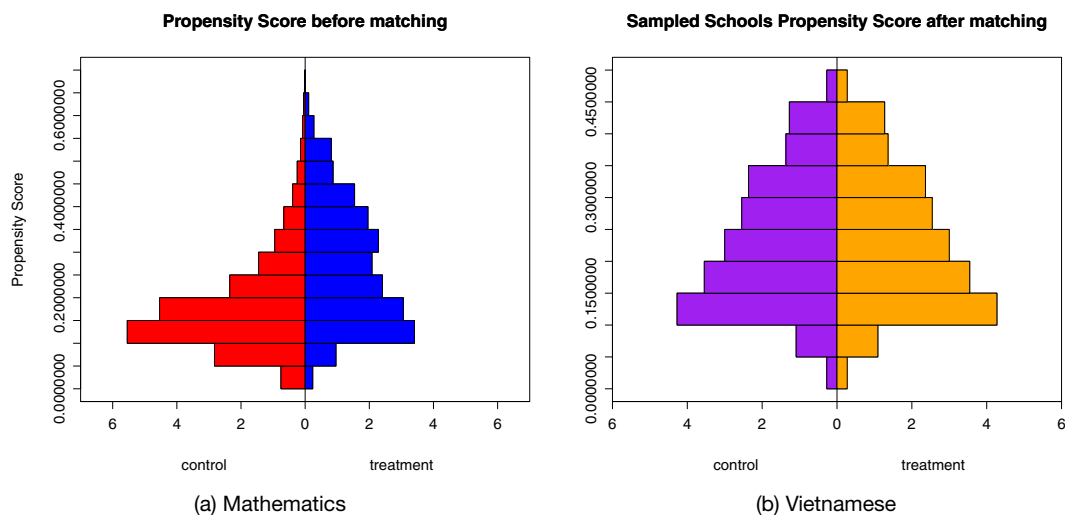
The conditioning variables used to estimate propensity scores are depicted in Table 6.1 and Figure 6.6, with a graph of the resulting propensity

**Table 6.1** Variables Used for Propensity Score Matching

Variable	Description
gg1_5t	School size
g15poorsh	Percentage students from poor families
eg15sh	Percentage students from ethnic minorities
mg15sh	Percentage of weak performing students in mathematics
vg15sh	Percentage of weak performing students in Vietnamese
tthkm	Distance from city center
cmsupport	Level of community support and interest (0, 1, or 2)
tthsatellites	Number of satellite campuses
fii2007	Fundamental School Quality Input Index 2007
computer	Number of computers
bboksh	Percentage of blackboards in good working condition
seatoksh2	Percentage of student seats in good working condition
schstd1m	School meets national standard 1 or higher
tups	Percentage of teachers with upper secondary education
ttrain	Percentage of teachers with college training
i.Priority	Dummy for province priority grouping
i.matinh	Province dummy

Source: VNEN Impact Evaluation study primary data, Authors calculations.

**Figure 6.6** Matched Scores



Source: VNEN Impact Evaluation study primary data, Authors calculations.

score distribution. The procedure used in estimation trimmed off observations if the estimated propensity was smaller than 0.10 or greater than 0.90. (See Crump et al., 2009).

As discussed in previous sections, the distinction between the intervention and nonintervention schools was quite subtle in reality. Many of the nonintervention schools learned VNEN pedagogical methods from the intervention schools over time, which makes the initially defined treatment less sensible in the above estimation.

To overcome, an implementation index was constructed to measure the degree to which VNEN was introduced (see Section 4.3), and the index will be directly used in the second approach. The implementation index is a continuous variable that measures the VNEN practice. Note that the index itself, by construct, captures a change of pedagogical methods as VNEN was not implemented at any school prior to the intervention, which fits in the first-differenced form too. Here we do not apply the propensity score-based weights.

Outcome variables of interest are individual-level mathematics and Vietnamese test scores described visually in the prior section. Two different periods were used to investigate the dynamic nature of VNEN impacts: 2013–2014 and 2013–2015. In all estimations, we control the initial-stage or predetermined school, students, and parents' characteristics. (See Table 6.4 at the end of this chapter for the list of control variables used.)

Table 6.2 displays the estimated impacts on mathematics and Vietnamese test scores. Panel A shows the average treatment effect and Panel B, the implementation effect. First, the average treatment effect is significantly positive for the change in mathematics score in 2013–2014. The impact on Vietnamese scores was insignificant. Second, we observe that

the point estimate decreased from the period of 2013–2014 to that of 2013–2015, which means that the control groups have caught up over time with the treatment group. Since the impact on mathematics scores in 2013–2015 is insignificant, the two groups were statistically indistinguishable in 2015. However, it is impossible to deduce any clear conclusion on Vietnamese since the two impact estimates are both insignificant.

In Panel B, we estimate the impact of VNEN implementation without priori defining treatment and control schools. Interestingly, the impacts on mathematics and Vietnamese are significantly positive in 2013–2014. The marginal effects are almost the same in both subjects. In 2013–2015, though the impact on Vietnamese scores is insignificant, we found that the point estimates are smaller than that of 2013–2014, which is consistent with the average treatment effect estimates in the first panel. Since the standard deviation is normalized as unity in the implementation index, the short-term impact is substantial in the two subjects (a Standard Deviation (SD) increase of the index changes the mathematic score by 0.18 SD and the Vietnamese score by 0.16 SD).

The results in Table 6.2 clearly show that (i) the impact is more significant in mathematics than Vietnamese, but in the short run, VNEN had a significant impact on both subjects, and (ii) the non-intervention schools seemed to catch up over time with the intervention schools. Again, the second point is indirectly supported by insignificant estimates in the first panel that relied on the initially defined treatment versus control schools.

Far reaching education reform usually takes time to develop, and the higher level of impact between the second and third year of the program (2013–2014) as compared to the third and fourth year (2014–2015) requires further research to be carried out.



**Table 6.2** Impact on Learning Outcomes

Panel (A)	Dependent Variable: Change in			
	Math 2013–14 (1)	Math 2013–15 (2)	Viet. 2013–14 (3)	Viet. 2013–15 (4)
VNEN	13.06082* (1.78)	6.508364 (1.03)	−0.1917586 (0.03)	−4.926378 (0.95)
Number of students	−0.0036567 (0.41)	−0.0018838 (0.22)	0.0034362 (0.38)	0.0115182 (1.61)
Female	9.048301*** (3.49)	3.056733 (1.26)	15.66617*** (5.95)	−7.882858*** (3.69)
Ethnic Kinh	4.393798 (0.92)	0.1755553 (0.04)	9.437553* (1.71)	−9.080281* (2.05)
Other controls included	yes	yes	yes	yes
Number of obs	5,206	5,205	5,206	5,204
F (114, 5091)	3.96	3.92	7.89	10.67
Prob > F	0.0000	0.0000	0.0000	0.0000
R-squared	0.1174	0.0861	0.1686	0.2042
Root MSE (Mean Squared Error)	90.366	84.104	90.066	72.541
Panel (B)	Dependent Variable: Change in			
	Math 2013–14 (1)	Math 2013–15 (2)	Viet. 2013–14 (3)	Viet. 2013–15 (4)
Index	18.12793*** (5.60)	8.186649*** (2.66)	15.91217*** (4.46)	2.509689 (0.91)
Number of students	−0.003316 (0.38)	0.0010311 (0.13)	0.0017258 (0.20)	0.0088508 (1.27)
Female	9.591044*** (3.81)	3.908525* (1.67)	16.30728*** (6.55)	−7.247989*** (3.61)
Ethnic Kinh	6.027562 (1.22)	1.738576 (0.37)	9.724907* (1.79)	−7.934034* (1.95)
Other controls included	yes	yes	yes	yes
Number of obs	5,299	5,298	5,299	5,297
F (123, 5175)	3.75	4.14	6.90	11.36
Prob > F	0.0000	0.0000	0.0000	0.0000
R-squared	0.1051	0.0914	0.1538	0.2022
Root MSE	90.621	84.257	89.564	71.991

Note: \*p < 0.1; \*\*p < 0.05; \*\*\*p < 0.01

Source: VNEN Impact Evaluation study primary data, Authors calculations.

Measurement issues could be one explanation of the pattern across the two years—with the cohort based measurement being used here, the top performing students may still be improving but the measurement may not be able to capture it. There is a further possible explanation. It is possible that the VNEN program has a great novelty value which fundamentally alters the teaching-learning interaction. Topping, 2005 explains in some detail the strong cognitive and affective impacts of peer learning. The author mentions “the sheer excitement and variety of a novel kind of learning interaction.” After a period of time, it is possible that the novelty wears off for both teachers and students and the instruction slips back to the previously ingrained patterns of habit, such as frontal instruction from the teacher. It is quite possible that for the VNEN program to be truly effective over time, a sustained innovative effort may be required, together with accompanying research.<sup>2</sup>

## 6.3 Non-Cognitive Outcomes

While the technology for standardized test scores is well established, the measurement of non-cognitive outcomes is not as straightforward. To measure non-cognitive outcomes, we depend on parent inputs regarding their children’s behavior, the idea being that parents observe and interact with their children in multiple situations and contexts. Parents, perhaps more than teachers, would likely be biased to see their children always in a good light, which we have to account for in some way if we are to use a valid and accurate measurement. In this section we present an overview of our measure of non-cognitive assessment followed by an estimation of VNEN impact.

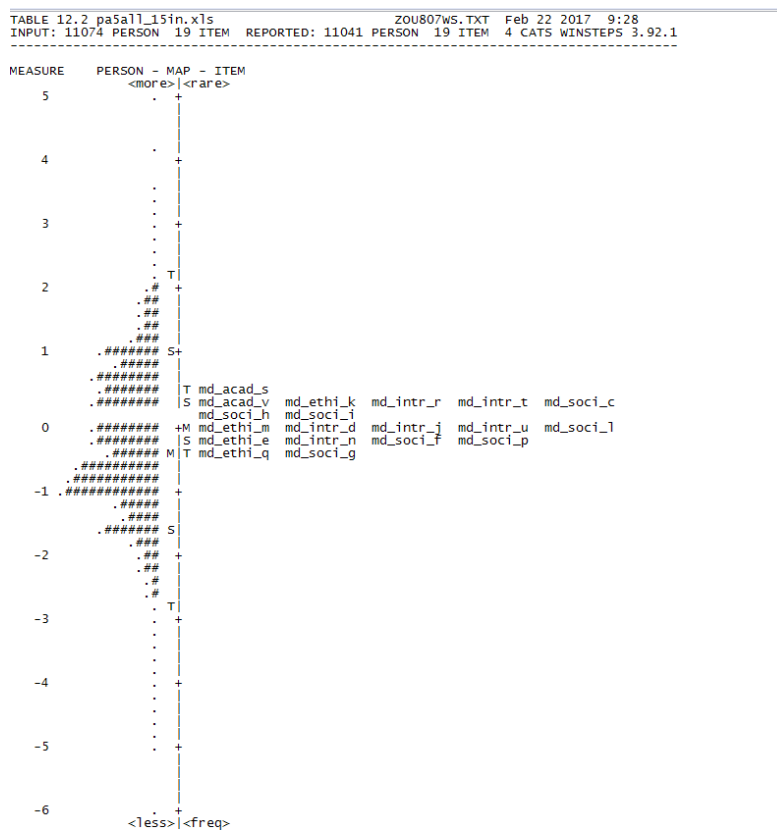
### 6.3.1 Estimation of Non-Cognitive Outcome

In order to be able to capture meaningful information about a child’s non-cognitive development we asked parents about the following statements, using a scrambled list of items: “Every child develops his/her competencies as he/she gets older. Parents/guardians usually have expectations about their child’s development progress. Please compare your child’s competency progress in the last three years with your expectation.” And for each of 21 items, we asked the parents to rate on a four-point scale: ‘Much higher than my expectation’; ‘Somewhat higher than my expectation’; ‘Same as my expectation’; and ‘A bit lower than my expectation’.

The items themselves were chosen so as to be easily understood by parents and classified into four categories as shown in Figure 6.7. The particular framing of these statements allowed variation to be generated in the responses, rather than every parent saying their child is obviously the best on every dimension. The information was converted into a 500 mean Rasch score for the individual constructs as well as the overall non-cognitive assessment score. The person-item map shown in Figure 6.7 makes intuitive sense. Helping parents with housework chores and taking care of siblings was an ‘easy’ item, checked off by most parents. Expressing ideas clearly and making plans and following through with them were among the most difficult items to rank.

While much further research would be required to validate and confirm the non-cognitive scores measured in this way, for our purpose it is sufficiently plausible that the technique is not biased in any systematic way toward the VNEN or control groups. Figure 6.8 shows the

**Figure 6.7** Construction of Non-Cognitive Outcome Score



(a) Item response theory map

Dimension	Variable	Description
intra-personal	md_intr_r	Making plans and following through with them
	md_intr_t	Neatness and tidiness with their personal belongings
	md_intr_d	Curiosity about how things work
	md_intr_j	Managing his/her own schedule
	md_intr_u	Taking good care of personal hygiene without having to be reminded
	md_intr_n	Responsibility (e.g., keep promise, admit mistakes, complete assigned tasks)
social	md_soci_c	Confidence (e.g., in greeting parents' guest, child's guest at home)
	md_soci_h	Persuasiveness
	md_soci_i	Defending his/her point of views
	md_soci_l	Proactively obtain help when they need
	md_soci_f	Sharing objects with siblings/friends
	md_soci_p	Helping parents with housework chores, taking care of siblings
ethical	md_soci_g	Getting along well with other children
	md_ethi_m	Being sensitive to emotional needs of others
	md_ethi_e	Love of nature (plants, animals, river, mountain, etc.)
	md_ethi_q	Being respectful to elders
comm	md_ethi_k	Helping friends with their classwork
	md_ethi_e	Love of nature (plants, animals, river, mountain, etc.)
	md_acad_s	Making artworks/craftworks as a gift/use at home
	md_acad_v	Express their ideas clearly

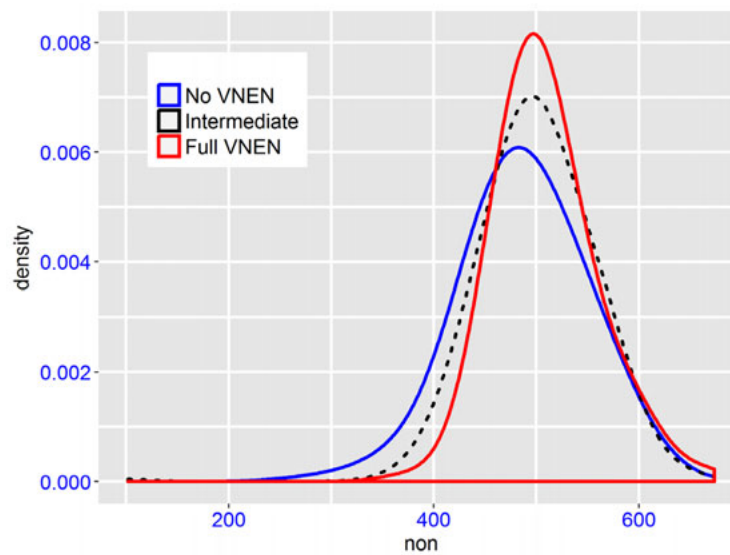
(b) Item descriptions

Source: VNEN Impact Evaluation study primary data, Authors calculations.

kernel density estimates of the resulting comparison, centered on the mean of 500. We use the information regarding implementation of VNEN to look at three groups—children who went to schools with an implementation index higher than 1 (see Figure 4.13) as ‘Full VNEN’, children who went to school with an implementation index lower than –1 as ‘No VNEN’, and the intermediate group with indexes between –1 and +1. The sample children are distributed approximately one-fourth in each

of the extreme groups (approximately 2,300 children in each group), which are ‘pure’ VNEN and control groups, with half of the children (about 6,000) in the middle group. Figure 6.8 shows that the full VNEN group dominates at the lower end of the distribution, with scores being even toward the higher end, this phenomenon being substantively an artifact of the measurement technique. Table 6.3 presents regression results that show the significant impact of VNEN on non-cognitive outcomes.

**Figure 6.8** Non-Cognitive Score Overall



Source: VNEN Impact Evaluation study primary data, Authors calculations.

### 6.3.2 Impact Evaluation of Non-Cognitive Outcomes

**Table 6.3** Estimating Impact on Non-Cognitive Outcomes

	<i>Dependent Variable</i>		
	<b>Non-Cognitive (all) (1)</b>	<b>Intrapersonal (2)</b>	<b>Social (3)</b>
newdef1 (dummy int. VNEN)	30.699*** (4.502)	24.385*** (4.592)	26.694*** (4.678)
newdef2 (dummy full VNEN)	41.218*** (4.792)	31.497*** (4.888)	36.946*** (4.980)
priority2 (Priority II & III)	-73.908*** (10.059)	-79.979*** (10.255)	-58.087*** (10.451)
totstum (school size)	-0.025*** (0.007)	-0.016** (0.007)	-0.035*** (0.007)
sch_wealth (school wealth)	7.778*** (1.504)	7.185*** (1.534)	5.743*** (1.563)
st_tch (student to teacher ratio)	-0.795*** (0.202)	-0.918*** (0.206)	-0.581*** (0.210)
distance from city center	-0.351*** (0.110)	-0.103 (0.113)	-0.468*** (0.115)
stu_gen (girl is 1)	13.916*** (1.744)	14.268*** (1.778)	11.118*** (1.812)
stu_ethnic (ethnic minority is 1)	-0.283 (3.250)	6.753** (3.315)	-0.013 (3.376)
Constant	555.307*** (10.144)	549.982*** (10.343)	552.708*** (10.539)
Observations	10,768	10,761	10,765
R <sup>2</sup>	0.134	0.126	0.101
Adjusted R <sup>2</sup>	0.129	0.122	0.096
Residual Std. Error	252.430 (df = 10709)	257.334 (df = 10702)	262.254 (df = 10706)
F Statistic	28.515*** (df = 58; 10709)	26.669*** (df = 58; 10702)	20.699*** (df = 58; 10706)

Note: \*p < 0.1; \*\*p < 0.05; \*\*\*p < 0.01

Source: VNEN Impact Evaluation study primary data, Authors calculations.

**Table 6.4** Additional Controls for Test Score Regressions

i.st_14_q102a	Gender of student
ethnic_kinh	Ethnic minority of student
i.pa_14_q115a	Mother's education level
i.pa_14_q115b	Father's education level
tc_gen	Teacher gender
tc_age	Teacher age
tc_ethnic	Teacher ethnicity
tc_wlth	Teacher wealth index
tc_degr	Teacher years of educational experience
tc_trgds13	Teacher days of training in current school year
tc_tenall	Teacher years of teaching
tc_tensch	Teacher years of teaching at latest school
tc_excel	Level of excellent teacher award
tc_postvol	Teacher was voluntarily posted to his/her school
tc_numlang	Number of ethnic minority languages spoken by teacher
tc_pweek	Number of periods teaching per week
tc_stuhelp	Teacher believes that best students should support other students
tc_stuqn	Teacher encourages students to raise questions
tc_stugps	Teacher puts students in learning groups
tc_stuself	Teacher lets students self-study
tc_sprestr	Classroom has enough space for learning corners
tc_furnr	Teacher satisfied with furniture in classroom
tc_iasst	Frequency of informal cognitive assessments
tc_fasst	Frequency of formal cognitive assessments
tc_pobs12	Frequency of classroom observations by head teacher/principal
tc_tgobs12	Frequency of classroom observations by teacher of same grade
tc_clumg13	Frequency of classroom observations by teacher of same school
tc_pincls12	Frequency of parents participating in teaching activities
tc_pmuseful	Usefulness of parents participating in teaching activities
tc_hrs_class	Time spent teaching in class
tc_hrs_prep	Time spent prepping for teaching
tc_hrs_oth	Time spent on other things (excl. teaching and preparations for teaching)
tc_arti13	Index on classroom furniture and infrastructure
p_wv_polop	Index on principal world values (view on politics, work, leisure, pride)
p_wv_posap	Index on principal world values (view on positive approach to life)
p_wv_injun	Index on principal world values (information junkie)
p_wv_cohecu	Index on Confucian heritage values
p_310_hcv	Whether principal is proactive
p_psi_sa	Index on principal management style—social astuteness
p_psi_ii	Index on principal management style—interpersonal influence
p_psi_na	Index on principal management style—networking ability
p_psi_as	Index on principal management style—apparent sincerity
pri_msr_13_05	IRT score on principal's pedagogical attitudes
schlships	Measure of need based student scholarships
msr_p701	IRT score on principal's innovativeness

Source: VNEN Impact Evaluation study primary data, Authors calculations.



## TAKEAWAYS:

### Cognitive and Non-Cognitive Student Outcomes

This chapter discussed the findings regarding student outcomes for both cognitive and non-cognitive abilities. As the baseline cognitive testing was conducted in December 2013, approximately eighteen months after the GPE-VNEN project started, the parity between VNEN and control groups prior to the start of the project was established using administrative census data. The chapter provided evidence of superior VNEN outcomes for both cognitive and non-cognitive abilities. Variation in implementation intensity of VNEN implied that the impact evaluation based on a binary definition may not be complete. We introduced a method using the implementation index to account for the variation in implementation. The methodological details, including a discussion of why attribution can be made in the quasi-experimental setting rather than mere correlation, is planned to be presented in forthcoming academic research reports.

#### VIETNAMESE AND MATHEMATICS TEST SCORES

- Standardized tests were taken by the same cohort of students from Grade 3 to Grade 5, over approximately two years. The tests were designed so that item response theory (IRT) based measures could be used, with a national mean of 500 and a standard deviation of 100. As the students progressed through the grades, their scores would be expected to grow, and the research question of interest was to compare the performance of students from VNEN and control group schools. The evidence indicated that students from VNEN schools on an average, kept up to the same level or exceeded the growth of control group students.

#### NON-COGNITIVE ACHIEVEMENT

- We constructed measures of non-cognitive abilities on four dimensions: intrapersonal, social, ethical, and communication. Scores for each student were based on parental reports of the growth of children's abilities over the three years of the program. For each of the individual constructs, as well as a combined measure of non-cognitive skills, VNEN students were performing better than the control group students. The effect sizes were quite large, above one-third of a standard deviation in some cases. An interesting finding for both non-cognitive and cognitive abilities, was that girls performed better than boys on average.

#### IMPLEMENTATION INDEX

- An elaborately constructed VNEN implementation index was able to discriminate quite effectively between VNEN and non-VNEN schools. We used the implementation index instead of the program participation in some of the regression specifications. The effect considering only the binary variable for program participation was statistically insignificant in some cases, and the effect size was only as high as one-tenth of a standard deviation. However, when we incorporated the implementation index, the effect size increased almost to one-fifth of a standard deviation in mathematics for 2013–14, and more than one-third of a standard deviation for non-cognitive outcomes.

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The VNEN program is seen to lead to superior outcomes regarding both non-cognitive and cognitive abilities. The methodologies used to arrive at this result need to be investigated further through academic research.

## Endnotes

1. We utilize a variant of the methodology proposed by Hirano, Imbens, and Ridder, 2003. Their method calls for weighting by the inverse of the nonparametric estimates of the propensity score. Their paper explains how the method is more efficient than simply comparing differenced treatment and control means. See also Wooldridge, 2007.
2. Thanks to the financial support from *Research on Improving Systems of Education* a sample of the cohort of students followed in the present study will continue to be tracked over the next few years. See further discussion in the conclusions and recommendations section.



... một con  
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# Findings from the Qualitative Component

# 7

This chapter summarizes the qualitative component results in six sections. The first section provides a brief description of the methodology used for conducting the qualitative research. The second section gives an overview of what occurs in the classroom, as captured through coded lesson videos, including the approaches and activities used. The third section presents the extent and level of the adoption of key 21st century skills across VNEN schools and classrooms, and the fourth section details those skills regarding how they were enacted in VNEN classrooms. The fifth section sheds light on both the extent and nature of the use of learning guides by VNEN teachers. The final section provides stakeholder insights and perceptions of VNEN regarding its benefits and challenges. While the study findings have been condensed and summarized for this chapter, full results and a more detailed methodology of the qualitative study are to be the subject of a future research paper.

## 7.1 Overview of Qualitative Component

The qualitative research was designed to provide a deeper understanding of how the VNEN program has been implemented in schools and to what extent and the ways in which it has been adopted.

One of the critical findings from the quantitative analysis, through creation of the VNEN implementation index, is that there is a great deal of variation in the extent of VNEN adoption and that the level of adoption has a strong relationship with student outcomes. The schools that more fully adopted the program tended to have higher

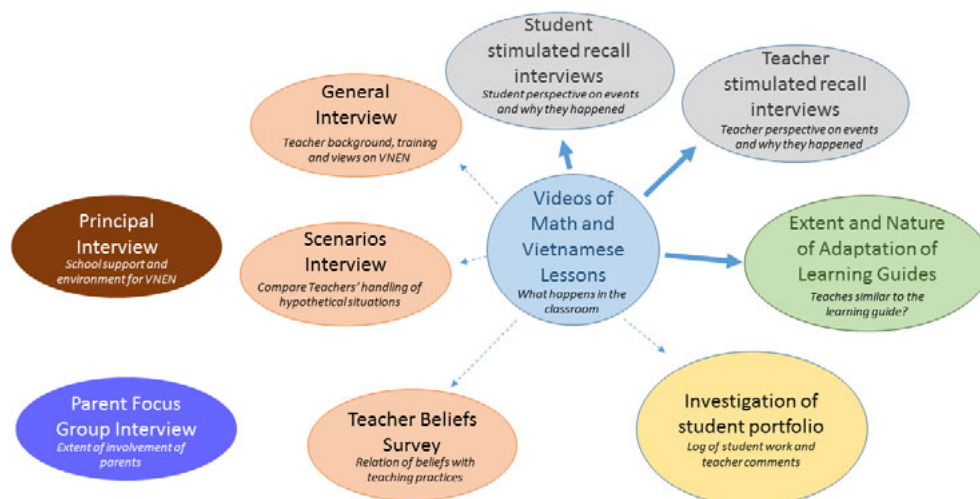
cognitive and non-cognitive outcomes. Building on this premise, the objective for the qualitative study is: “To clearly describe and illustrate what are advanced VNEN outcomes and to determine how they might have been achieved.”

To address the objective, two overarching research questions are asked:

1. What do we mean by desired outcomes of VNEN in the classroom and in the school?
2. What are the factors that can explain how these desired outcomes have been made possible in practical experience?

For the first question, the study developed methods centered on analysis of observations by video and interviews to define, for future reference, what it means in practical terms for children to develop competencies in the focal areas of: (i) leadership, (ii) teamwork and cooperative learning, (iii) communication, and (iv) self-managed learning. VNEN encompasses an ambitious array of objectives with regard to sought after outcomes. These are also new and modern outcomes, going beyond the traditional learning of facts explained by the teacher. Competencies like leadership are very important for the future in the implementation of the fundamental and comprehensive education reform, and the study hopes to provide a useful reference from the experience of the VNEN model by investigating:

- a. How are teachers implementing the standard elements of the VNEN practices?
- b. Why do teachers use certain practices and teach in the ways they do?

**Figure 7.1** Map of Analytical Components

Source: VNEN Impact Evaluation study primary data, Authors schematic representation.

- c. What are the factors for students in the adoption of VNEN?
- d. What role do the parents play in the VNEN model?

The qualitative analysis involved 45 teachers, 15 principals, 72 parents, and 393 students of students of grades 3–5 across 15 schools. Three mathematics and three Vietnamese lessons were filmed for each teacher, for a total of 270 lessons. For each lesson there were three cameras, with one focused on the teacher and two focused on two different student groups. In total there are 810 videos. Multiple tools were utilized to capture the necessary information in the case studies (see Figure 7.1).

## 7.2 Teaching and Learning Practices in the Classroom

For analysis of the videos, a coding tree was developed that is made up of approaches and activities used in the classroom. Often the activities and approaches have key attributes associated with them which provide further detailed breakdowns and specify quality or levels of advancement (i.e., basic, intermediate,

advanced). An example snapshot of a partial coding tree is shown in Figure 7.4 at the end of this chapter. The first step in analyzing teaching and learning classroom practices was to gather summaries of measures of the coded lessons of both VNEN and traditional classrooms. The purpose of these summaries was to ascertain what occurred in the classroom as well as how VNEN may have changed the way the lessons functioned. To do so, three different dimensions were examined—lesson structure, instructional methods, and type and extent of classroom interactions.

### 7.2.1 Lesson Structure

Lesson structures were analyzed by comparing the lesson times, which were classified by activity type and segment purpose, between VNEN and traditional classrooms. It was found that VNEN classrooms spent much less time on whole class activities and more time on group work than traditional classrooms. In addition to spending approximately a third of the lesson for group work, VNEN classrooms presented a more balanced picture of students working individually, in groups, and as a class. In contrast, traditional classrooms spent nearly two-thirds of the total lesson time on whole class activities and slightly



over a quarter on individual work but little time on group and pairs work. Regarding segment purposes, VNEN classrooms spent approximately the same amount of time as traditional classrooms on practicing. However, VNEN classes devoted more time to exploration, whereas traditional classes allocated more time for review.

### 7.2.2 Instructional Practices

VNEN and traditional classrooms used both similar and distinct instructional methods during lessons. For example, both types of classroom used problem solving and exercises for three-fourths of all lessons. However, the difference was that VNEN classrooms spent more time on discussion but less time on lecturing than traditional classrooms.

### 7.2.3 Type and Extent of Classroom Interaction

The lessons were examined to determine the ways in which teachers and students were interacting. This was done by classifying the types of questions asked by teachers, their level of complexity, and the extent of opportunities for students to address questions to teachers and other students. In both VNEN and traditional classrooms, test questions were the most common type asked by teachers. Nonetheless, compared to traditional classrooms, VNEN classrooms had much more variation in types of questions, with a greater use of guiding and directing questions, genuine questions, and progress questions. In terms of complexity, most questions from both VNEN and traditional lessons fell into the low and medium levels; VNEN lessons had a small proportion of high complexity questions, whereas traditional lessons did not. VNEN classrooms also tended to facilitate significantly more opportunities for students to interact with other students as well as with teachers. On average, VNEN students posed approximately eight times as many questions to teachers and nearly nineteen times as many questions to other students as did their traditional counterparts.

## 7.3 VNEN Practices and 21st Century Skills in the Classroom

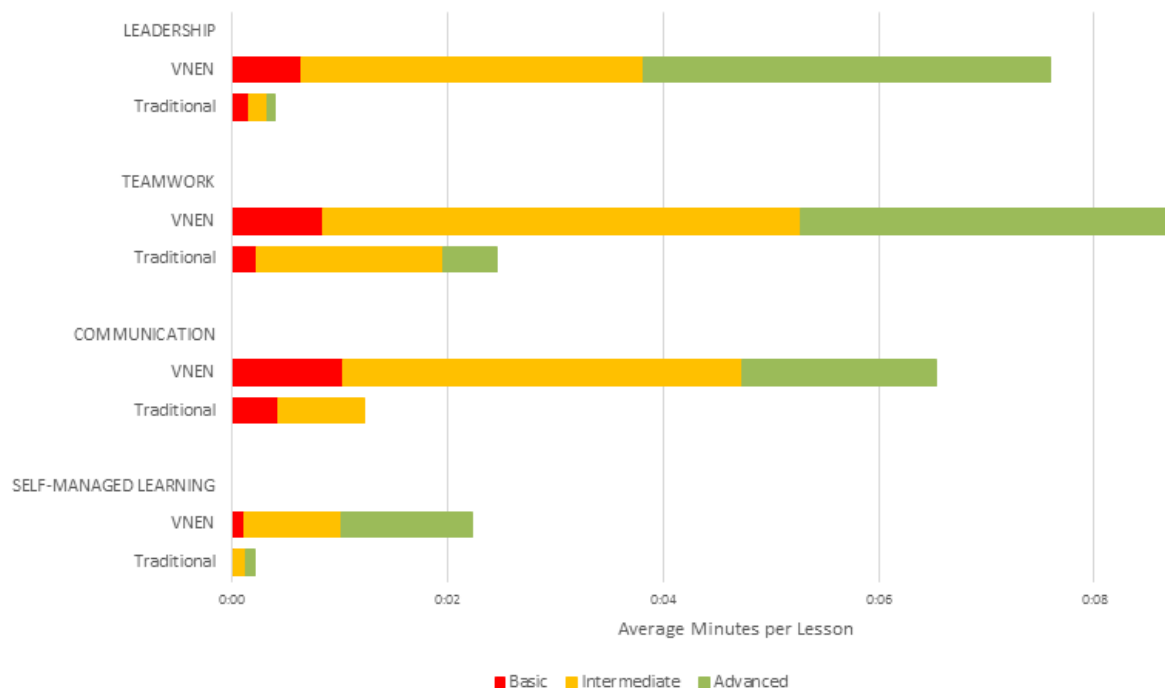
An important element of the VNEN model is that student learning is not only cognitive but also involves the development of what have been termed as 21st century skills. In VNEN, some of these skills include leadership, teamwork and cooperative learning (T&CL), communication, and self-managed learning (SL). The lessons were examined to capture instances in the classroom where such skills might have been developed and utilized. In doing so, the extent to and level at which practices occurred to facilitate these skills in VNEN classrooms were reviewed relative to traditional ones. An analysis also determined whether the time spent and the level of advancement in these 21st century skills' activities varied across VNEN schools and classrooms. To account for variations in the adoption of VNEN practices, teacher characteristics were examined to discern what might influence their receptivity to and effectiveness in implementing VNEN.

*Extent and level of adoption of VNEN practices and their effects on 21st century skills:* In this study, VNEN classrooms provided significantly more time for students to practice and develop key 21st century skills (leadership, teamwork and cooperative learning, communication, and self-managed learning) at a higher level than what was offered in traditional classrooms (see Figure 7.2). This result is neither surprising nor should it be considered a critique of the traditional model. VNEN was designed to give students more opportunities in these areas, and the results indicate that the design is being successfully adopted.

Regarding quality, levels of advancement in VNEN classrooms were generally high, with most at either the intermediate or advanced level. This indicates that teachers and students can grasp the model and move beyond either



**Figure 7.2** Time Spent per Lesson and Level of Advancement for VNEN 21st Century Skills



Source: VNEN Impact Evaluation study primary data, teacher camera videos of lessons.

a rudimentary or ineffective adoption of the practices.

*Variation across VNEN schools and classrooms:* The time spent on key 21st century skills varied across VNEN schools and classrooms. When examining VNEN lessons on a school-by-school basis, some schools spent a significant amount of lesson time on activities that were designed to practice all four categories of the key 21st century skills, while others did not. When examining lessons within VNEN schools, similarities across grades emerged, with certain exceptions of high variation, which suggests a school-level effect where teachers in the same school followed similar practices. Nevertheless, there were a few contrasting examples, such as one teacher within a school implementing VNEN in a very different way than two other teachers. These examples indicate an important teacher-level effect in the implementation of VNEN: A teacher in either a generally non-supportive environment or one where VNEN is not integrated into school culture

may still perform VNEN activities frequently and at an advanced level. Finally, some teachers spent a significant amount of time on activities in one area of the 21st century skills, yet little on others. In summary, the adoption of the VNEN model varied both by school and by teacher.

*Teacher characteristics that help account for differences:* Both VNEN adoption and advancement levels were influenced by the characteristics of the teachers who implemented VNEN. One important teacher factor that emerged was age. Lessons were grouped into levels of advancement categories, and teacher characteristics were then examined based on those categories. Younger teachers tended to have a higher proportion of lesson time that utilized VNEN practices, and they tended to be at a more advanced level. Teachers at the basic and basic-to-middle levels had an average age of over 40, while the middle, middle-to-advanced, and advanced levels had an average age below 38. Although it is important to not overanalyze these differences,

age distribution may indicate that more experienced teachers may be more set in their ways and find it more difficult or be less willing to modify their practices, whereas younger teachers might be more flexible. Interestingly, the middle category had the lowest average age, with slight increases seen when moving toward advanced. This may indicate that some experience is beneficial for optimal implementation.

## 7.4 The Deep-Dive: Exploration on What Takes Place for 21st Century Skills and Why It Takes Place

It is important to understand what occurs when 21st century skills emerge in lessons and what factors lead to either more or less advanced levels. Using five (four VNEN and one traditional) selected schools, lessons were explored in greater detail to identify markers that indicated the level of advancement for each of the key VNEN skills: leadership, teamwork and cooperative learning, communication, and self-managed learning. Lessons were examined for the contexts in which each of these skills occurred, their benefits and downsides, the ways in which they were either enabled or hindered, and ways to improve their effectiveness. The markers and identified video instances from both the teacher and student perspectives can be leveraged when training teachers on how to encourage and support the development of non-cognitive skills.

### 7.4.1 Leadership

**Contexts of leadership:** Leadership appeared more often in whole class and group activities that included a specifically assigned “leader” compared to pairs activities. Leadership in both whole class and group activities exhibited similar characteristics, such as asking group members questions, assigning tasks to each member, reaching consensus, and reflecting on the

students’ own and others’ opinions and feelings. Asking group members questions was the most used method of leadership. However, most of the questions were not creative and simply followed the learning guide. In many cases, the leader took on a facilitative role and thus encouraged and allowed members to solve problems. In many lessons, the leaders were high-performing students; they quickly completed individual work and then guided others. This raises the issue of a need for leader assignment tradeoffs vs. rotation to ensure that all students have opportunities to lead. The types of questions and answers used when leadership was deemed to be advanced tended to go beyond the learning guide questions. They also tended to be open and encouraged opinion sharing and discussion beyond simple answers.

**How leadership was either enabled or hindered:** VNEN enabled leadership by separating the class into small groups, choosing student group leaders and committee leaders, and obliging those student leaders to run group and/or class activities, including creating more suitable activities, such as a warm-up activity, a sharing-the-lesson’s-objective activity, and group activities, to improve and nurture leadership.

**Benefits and downsides of leadership:** One of the benefits of more advanced/high student leadership, based on the lesson observations, was that, when the leader aptly involved everyone, there were more chances to share ideas and discuss differences. Additionally, when the leader was able to relate the questions to real-life events, other members appeared more enthusiastic in the discussion. During group work, students seemed to gain more valuable experiences regarding good leadership and how to handle difficult, unexpected situations. Some students were both more active and more proactive in contributing ideas to group discussions, and all students shared more readily when the teacher suggested what to discuss and how to

**Video examples of leadership demonstrated by students**

**Example (a) Clear lead role in question and answer:** The leader had a clear role in leading the question and answering task on the sports in the pictures. All group members participated. After being interrupted by the teacher, the leader actively continued with exercise 3 by expressing her own opinion and receiving feedback from every member.

**Example (b) Discussing opinions:** The leader asked the rest of the group questions in the exercise (which was supposed to be a pair activity) and everyone raised their hands. She chose one student to answer, then asked if there were any other opinions. She asked another student just to make sure the answer was right. When there was a conflict in the answers, she calculated herself and concluded the correct answer. One student actively shared ideas on another method of solving the question. The leader agreed that there were various ways of solving the questions.

**Video examples of teachers supporting leadership**

**Example (c) Sharing work:** One student shared her work in front of the class. She spoke loudly and clearly, but when asked to comment on the exercise, she could not answer. The teacher then gave her hints, and only when she still could not answer, the teacher asked another student to help her answer the questions. The teacher thanked the students and concluded the answer.

**Example (d) Questions to finalize answers:** After asking questions in pairs, the leader asked her group the same questions to finalize the answers. Group members volunteered to answer and also expressed their opinions on how the answers should be. The teacher only observed the group and did not interfere as the group was doing well on its own.

do so. Despite these benefits, the downside was that in some instances both the leader and the group members became somewhat mechanical in group activities, especially when asking and answering questions. Only one case had a flexible leader who facilitated the group discussion differently. Possible other downsides for student leaders include that other members might become dependent on the leader (e.g., only speaking when being asked to; not contributing ideas). If leadership is only basic/low, students may feel that learning is an obligation and lose interest.

**How could leadership be made more effective?** Ways to improve leadership and make it more effective include, but are not limited to, the following:

- Teachers should encourage student leaders to take a more active leadership role to encourage others to engage more in discussions.
- Teachers should encourage academically stronger students to assist weaker students.
- Teachers should encourage students to communicate when disagreements occur, and they should not immediately offer the correct answer.
- Leaders should develop methods for gaining every member's attention and elicit participation in group activities.
- Leaders should be educated on tips for handling group conflicts and distracted members.
- Leaders should be given ample time to consider the optimal ways to run group work

well and to provide effective demonstration instead of directly giving commands.

## 7.4.2 Teamwork and Cooperative Learning

**Contexts of teamwork and cooperative learning:** Most of the evidence on Teamwork and Cooperative Learning (T&CL) came through group activities, which was mainly because there were more group activities than pairs activities. There tended to be more discussion due to more complex questions in the group activities, whereas the pairs activities were often simple (e.g., cross-checking of each other's results). There were few observations regarding T&CL during whole class activities because most of those were questions and answers between either one student leader or the teacher and the rest of the class. T&CL usually appeared in exercises that required students to ask and answer questions, which were generally already available in the learning guide. Hence, the questions and answers were often taken from the materials in the learning guide and rarely truly creative. Characteristics of T&CL that were identified to be more advanced/high included actively and enthusiastically participating in group discussions, all members working in a cooperative manner and trying hard to achieve results, interest in the discussion content, and going beyond the learning guide. Characteristics of T&CL identified as basic/low included requiring a significant amount of teacher assistance, no discussion, and students working individually instead of together on group activities.

**How teamwork and cooperative learning were either enabled or hindered:** VNEN enabled T&CL by organizing the class into groups, which encouraged (and obligated) students to work together. T&CL appeared to occur either when activities involved sharing opinions and feelings or when there were differences among answers, which forced students to cooperate. Teachers provided students opportunities for T&CL by observing group work and interacting with the groups only when they either needed guidance on activities or required answer clarification. The teachers occasionally reminded the group to work cooperatively by asking if they had held a group discussion. Some teachers also created chances for T&CL by having academically stronger students assist weaker students with exercises. Each group usually had a few students who truly enjoyed teamwork and actively raised their hands, while other students were passive and appeared to answer questions out of obligation.

**Benefits and downsides of teamwork and cooperative learning:** Students often understood lessons on a deeper level and tended to find them more fun if they truly enjoyed teamwork and were actively sharing and receiving ideas. However, teamwork might not be as effective for timid students who do not enjoy working with others; they might work alone more effectively.

**How could teamwork and cooperative learning be made more effective?** T&CL could be more effective if the student leaders, instead of

### Video examples of teamwork and cooperative learning

**Example (a) Active discussion:** Students were having a discussion where all participants were actively contributing. They politely took turns and provided an opportunity for every member of the group to ask questions as well as to listen while others were speaking.

**Example (b) Cooperating to finalize an answer:** Students were demonstrating good cooperative skills to come up with an answer. Some students had a better grasp of an issue and the others listened, while contributing on their own at another stage of the discussion.

asking questions all the time, would allow other members to ask questions as well; that way, they would feel more equal, less dependent on the leader, and more eager to share their opinions. Regarding the teachers' perspectives, T&CL could be more effective if teachers interacted with the group only when necessary, such as when it was not active enough. The group results showed that the teachers should focus more on low-performing students, who might not understand the lesson yet feel too timid to ask others for help. Teachers should also allow students to fix each other's mistakes before explaining the solutions themselves.

### 7.4.3 Communication

**Contexts of communication:** Most high-level communication tended to appear in group activities while doing exercises. Communication between pairs was usually short because the difficulty for pair activities was rather low. Communication skills in whole class activities were generally less creative because the answers tended to be predetermined. Conversely, in group communication, the activities tended to function more in the form of back-and-forth discussion and there were more chances for students to actively express their own opinions. Most communication was in the form of asking and answering questions that were taken from the learning guide. The discussions were livelier when disagreements emerged between students, and they needed to determine who was wrong and why. Both the whole class and group activities had students who were enthusiastic and who actively raised their hands to state their opinion and communicate with others. Notably, there were a few who were timid and thus communicated in a quiet voice, and they only did so when asked. Students other than the leader mostly answered the teacher's and student leader's questions but rarely had questions of their own. Characteristics of more advanced/higher communication skills were identified as speaking clearly, fluently, and confidently, and actively

sharing personal ideas using original sentences. Characteristics of basic/low communication skills were identified as only answering reluctantly and/or mechanically, repeating what others had said without having one's own opinion, arguing about unimportant issues (e.g., why one student had more cards than another), and not communicating when it was required.

**How communication was either enabled or hindered:** VNEN enabled communication by creating activities where students had to work together and communicate with each other. Communication skills were often improved through discussing feelings, stating opinions, and sharing ideas and other issues that are not simply found in books.

**Benefits and downsides of communication:** Through communication, the students learned from different perspectives (different ideas, opinions of other students, different ways to solve a problem). They learned to be more comfortable and confident when speaking in front of an audience over time. The apparent downsides were that some students did not express an opinion but rather only repeated answers from others.

**How could communication be made more effective?** From the student perspective, communication skills could be more effective when the leader is able to elicit everyone's opinions and come to a consensus on a problem. From the teacher perspective, if the teacher was able to devise creative questions that were thought provoking, then the students would tend to be engaged in a more interesting discussion. Teachers should avoid interrupting students' discussion flow and should suggest topics related to the lesson that would be interesting for students to discuss.

### 7.4.4 Self-Managed Learning

**Contexts of self-managed learning:** As would be expected, self-managed learning (SL)

### Video examples of communication

**Example (a) Actively sharing ideas with own thoughts:** Students were going beyond just discussing the given question and elaborating on the topic.

**Example (b) Teacher facilitating group discussions:** Students were going through the motions to answer questions. The teacher enabled students' opportunities for exercising their communication skills by doing the following: reminding the group to discuss between themselves, asking one student to help out another in figuring out how to do the exercise, and asking if the group had discussed about a particular topic.

activities mostly appeared during group and pairs activities. While there was almost no SL during whole class activities in terms of learning material, the warm-up activities presented a subtle form of SL from the standpoint of students choosing games and other activities. SL mostly appeared when the group leader would move on to a new activity after finishing the previous one without the teacher's reminder. It was identified as being more advanced/high when a student or a designated leader actively changed the form of the activity so that it suited the group work (e.g., actively read a poem prior to any teacher instruction, discussed content before it was taught, discussed how to do the take-home exercise). In many lessons, student leaders actively moved on to the next activity and operated the group without guidance from the teacher. The pattern of SL was that, after finishing one activity, if the teacher did not give a reminder, the leader would actively let the group move on to the next activity.

**How self-managed learning was either enabled or hindered:** VNEN enabled SL by

dividing classes into groups so that students could work at their own pace. SL very much depended on the group leader actively leading group activities, according to each member's pace, and adjusting activities to achieve the greatest group benefits. Teachers enabled opportunities for SL by only interfering with group work if necessary; they sometimes hindered SL by telling students which activity to do next.

**Benefits and downsides of self-managed learning:** The benefits of SL are that a group can save time by working at its own pace and not having to wait for other groups to finish. A group could also devise either extra activities or other methods for operating activities that would suit them best. Learning styles differ among students and while most appear to operate effectively on self-managed tasks, a few tend to struggle with the approach and the added responsibility. This could result in them becoming disengaged and learning less.

**How could self-managed learning be made more effective?** SL would be more effective if

### Video examples of self-managed learning

**Example (a) Moving to the next topic without teacher guidance:** The group did not wait for instructions from the teacher, and moved on to the next activity on their own.

**Example (b) Use of learning corner:** Students finished their task and automatically got materials from the learning corner for the next activity.



teachers would only interfere when necessary. They should otherwise let students operate the activities themselves and actively encourage students to do activities in a SL form. Teachers could let groups decide how they would like to operate activities and only participate to either confirm the results or offer further guidance.

## 7.5 Extent and Nature of Use of the Learning Guide

The learning guide is an important element of the VNEN model regarding what occurs in the classroom. It provides the content to be learned as well as the manner in which it could be conducted. However, teachers are not only given the opportunity to modify the learning guide's activities as they see fit but are even trained on how to effectively do so. This policy recognizes that each class is different, and what might work in one environment may not work as well in another. This section examines how often teachers deviate from the learning guide and what takes place when they do.

**Findings from video analysis:** Figure 7.3 summarizes the results of the video analysis, in which the lessons of VNEN classrooms were examined to determine the types and extent of modifications to and/or deviations from activities specified in the learning guide and their levels of effectiveness. Overall, 23% of lesson time was different from the learning guide. Of this time, 67% differed in terms of operations (e.g., assigning an activity in pairs instead of individually), 29% was

spent on a new activity (e.g., the teacher introduced an activity not specified in the guide), and 4% represented a change in content. Although it was anticipated that activities might be skipped, this rarely happened. Regarding quality of activities that deviated from the learning guide, 40% of the time was considered high, 44% medium, and only 16% was considered low quality. This indicates that deviations often benefited and/or enhanced the lessons. While generally similar, there were some interesting differences in deviation by grade. Grade 3 had a much larger proportion of deviation from the learning guide regarding additional activities (45%) than other grades (26% in Grade 4 and 19% in Grade 5). However, Grade 5's deviations, at 78%, typically involved operations. Quality of activities also tended to rate higher in Grade 3, with 49% percent considered as high quality compared to 34% in Grade 4 and 38% in Grade 5.

**Findings from interviews:** For many VNEN teachers, the learning guide has been a welcome change from the traditional textbooks they used previously. Teachers at the Case Study 6 (CS6) school commented that the learning guide is more flexible and structured more logically than the previous textbook. The fourth grade teacher at CS6 found the learning guide particularly helpful in teaching Vietnamese because of the logical presentation of its content, which includes a sequence of reading, vocabulary practice, and sentence construction. Teachers in CS7 and CS9 remarked that the learning guide, with its colorful pictures and clear fonts, has been received well both by the teachers and students. Teachers

**Figure 7.3** Percent of Time Not Following the Learning Guide and Its Effectiveness and Type

	% off	Low	Med	High	Operation	Content	Addition	Skip
<b>Overall</b>	<b>23%</b>	<b>16%</b>	<b>44%</b>	<b>40%</b>	<b>67%</b>	<b>4%</b>	<b>29%</b>	<b>0%</b>
Grade 3	20%	22%	29%	49%	55%	0%	45%	0%
Grade 4	23%	10%	56%	34%	66%	9%	26%	0%
Grade 5	26%	17%	45%	38%	78%	3%	19%	0%

Source: VNEN Impact Evaluation study primary data, Authors calculations.

in CS7 and CS9 also commented that they found that the “three-in-one” functionality of the learning guide very useful; it is designed to be used as a textbook, exercise book (for students), and teaching guide (for teachers). In addition to the sequential order of the learning guide and its presentation, the content itself matters as well. The fifth grade teacher at CS9 commented that she is content with the learning guide because it provides accurate and current information. In contrast, the third grade CS3 (traditional school) teacher stated that because some questions listed in the textbook are out of date, teachers have to make them fit with the current context.

Teacher comments on the patterns of adjustments corroborated the findings from the video analysis. Teachers rarely change the content of the learning guide but mostly adjust the operations or carry out additional activities. One of the few examples of teachers adjusting content included the third grade teacher at CS6, who stated that she makes minor modifications to the content occasionally when it is not suitable or relevant in the local context. The fourth grade teacher at CS4 said that, although he does not feel the need to adjust the content much, he occasionally adds conclusions at the end of the lesson so that his students can have a better grasp of the main theme of the lesson. However, most of the teachers interviewed stated that they rarely make major changes to the learning guide content.

A common way to adjust the learning guide is to change the types and/or sequence of learning activities. For example, the third grade teacher at CS9 commented, “I do not adjust questions, but only the types of learning activities. For example, if an exercise is designed for students to work individually but my students do not have the required level of academic capacity to tackle it on their own, I will change it to a pairs or group activity so they can support each other in working on the exercise.” Other CS9 teachers echoed that most of their changes are in the

types of activities conducted, with few changes to the content itself. Similar to CS9 teachers, CS12 teachers sometimes changed various types of activities. In a math lesson that was filmed and reviewed in the stimulated recall interview with the third grade teacher, she stated that she switched individual work (as instructed in the learning guide originally) with group and whole class activities, because she felt that some students would not understand the content fully if they worked individually first. The fourth grade CS12 teacher explained that in choosing the types of activities appropriate for her students, she bases her strategies on the level of difficulty of the exercise; easy ones can be worked on individually, but difficult ones are more suitable for group or whole class activities.

Another way to adjust the learning guide is to add activities or questions that are not specified in the guide. For example, the stimulated recall with CS12’s fifth grade students revealed that their teacher had not only modified the operation by switching paired work with group work but also added an individual activity before the students shared their answers in groups in their math lesson. The observation of the lesson videos also confirmed that CS12 teachers often make deviations by adding more activities before or after students work individually; these deviations generally improve student-teacher interactions. In another example, in her stimulated recall interview about a math lesson, the fourth grade CS12 teacher stated that she developed some additional questions for students to discuss, with the goal of facilitating group work. The third grade CS12 teacher indicated that she sometimes poses several sub-questions, in addition to the questions set out in the learning guide; this enables students to answer each question more easily and understand the content systematically. The fifth grade CS6 teacher takes a similar approach by breaking complex questions into smaller ones so that students can answer them more easily and understand the content more fully.

Some teachers, however, expressed reservations about making spontaneous adjustments to the learning guide. At CS2 (one of the basic level VNEN schools), the fourth grade CS2 teacher remarked that she is hesitant to make modifications because any change she might make needs to be discussed with other teachers. The fifth grade CS2 teacher said bluntly that making adjustments is too much of a task for teachers and that they are not “researchers.” It was difficult to determine to what extent VNEN teachers are obliged to discuss any possible changes, however minor, with other teachers and/or principals. Nonetheless, given the fact that flexibility in making adjustments appears to have positive effects on student learning, more examination will be necessary to find out the way in which the rigidity of the policy for internal discussions on adjustments might affect the teacher’s motivation to modify/devise the learning guide to better accommodate the needs of students and their level of understanding.

## 7.6 Stakeholders’ Views on Benefits and Challenges of VNEN Implementation

Summarized below are stakeholder insights and perceptions of VNEN regarding its benefits and challenges.

### 7.6.1 Development of Socio-Emotional Skills

Teachers and parents observed that VNEN’s implementation has had positive effects on socio-emotional skills, both in school and at home. Many of the teachers and parents interviewed stated that students have become more active and confident; they attributed the change to VNEN, which encourages active learning and provides increased opportunities for them to improve their communication and leadership skills. Commenting on the benefits of applying the VNEN model, a third grade teacher at CS9

said, “The advantage is that the students have more opportunities to study in groups. This allows them to discuss and solve the problems together, and also to become more confident.” A fifth grade CS6 teacher indicated that the VNEN model helps students to learn more proactively, be more creative, and acquire knowledge by themselves. As a result, students learn more deeply and the knowledge they gain stays with them for longer periods of time. Similarly, a fifth grade CS15 teacher stated that the VNEN model assists students to remember what they learned better because this new model emphasizes self-discovery and exploration in learning. In the traditional model, students would try to memorize everything but would quickly forget what they studied.

Parents also cited various positive behavioral changes in their children. Some CS12 parents indicated that their children have become more industrious and happier about going to school; others said that the children demonstrate more self-confidence and are more comfortable with public speaking. Similarly, CS6 parents commented that their children have not only become confident, but also improved self-managed learning skills. One CS6 parent said, “Since the school adopted the VNEN model, my child’s performance has improved and he can study by himself without me reminding him.” Another parent said, “My child’s attitude has changed very much. She has become more self-disciplined. She gets up early and cleans the house herself. She goes to school very early without me telling her. She has become polite and actively greets everyone.” CS2 parents and teachers also made similar comments, citing the way in which their children/students now communicate with them more confidently and have become more motivated to study at home and help around the house. One CS9 parent commented, “I see the benefit that both students and my child have become more confident and proactive in reading. They prefer reading by themselves rather than waiting for guidance and support from others.”

## 7.6.2 Increased Parental Involvement in School and Student Learning

VNEN has also led to increased parental involvement. In the VNEN model, parents play vital and active roles, both in student learning and school activities. At home, parents are involved in children's learning, not just by checking on their schoolwork but also by helping them work on the application exercises in the learning guide. In addition to attending the parent meetings, parents provide support to the school by making monetary and/or physical contributions to decorate and repair classrooms. They provide real-life learning by decorating the "community corner" and by giving talks and presentations for students about local traditions and culture, such as embroidery, cooking, dancing, and farming. In this way, VNEN integrates parents into learning and makes it more relevant and enjoyable for students. These activities are designed to increase understanding and appreciation for the culture and ethnic traditions of the students. In addition, parents participate in the student government election process and student performance assessment.

Selected quotes from the interviews of teachers and parents are cited below to illustrate the way in which VNEN has facilitated more active parental involvement in different dimensions of student learning at the study schools.

"Under the traditional model, parents did not participate in student assessment, but under this [VNEN] model, parents are involved in various activities, including student assessment. I think that the parents have an essential role to play here." (CS6, Grade 5 Teacher)

"The parents actively participate in class activities and they also remind the students to study at home. A parent even called me once to ask why there was no homework that day. They care a lot about their children's study." (CS9, Grade 3 Teacher)

"In my opinion, the roles of parents have changed. The school now invites the parents to discuss students' performance and other related issues and to participate in school activities. Overall, this model is more innovative than the last one." (CS9, Parent)

## 7.6.3 Improved Relationships among Stakeholders

VNEN has improved the relationships among the stakeholders. The teachers at CS2, CS9, and CS12 indicated that VNEN has brought teachers and students closer. Students share their ideas with teachers more freely and even talk about their family issues. The third grade CS15 teacher also stated that students are not afraid to talk to teachers any more like they used to be. She attributed the change to VNEN, which she believes has created a more open and friendly learning environment for both students and teachers.

The improvement in parent-child relationships also is a welcome change for many parents. CS2 parents attribute their children's transformation to their exposure to VNEN, through which they have greater opportunities to share ideas and opinions with their classmates and teachers. Some parents indicated that they communicate with their children and their teachers more than ever before. CS2 parents described the way in which the VNEN model has fostered open communication between parents and children: they not only spend more time talking with their children at home, but their mutual communication also has become more open and friendly. CS9 parents also indicated that increased parental involvement in student learning has allowed children and parents to discuss what they are studying in lessons more frequently. One CS9 parent said, "The relations between parents, school staffs, and students have become closer, while the students' respect for their parents and grandparents remains unchanged." VNEN also has changed relationships between parents and teachers dramatically. CS12 parents indicated

that their lines of communication with teachers have improved since the school adopted VNEN, and they are in frequent contact with teachers who tell them how their children are doing at school.

## 7.7 Challenges of VNEN

### 7.7.1 Challenges Attributed to the Mindset of Teachers

Despite increased levels of effectiveness of teachers in applying the VNEN model, it takes time to change their mindsets toward fully adopting it, as illustrated in a comment made by an CS2 teacher:

“I think the biggest challenge [for teachers] is to change the teaching methods and approaches with which we have been familiar. For example, I have been teaching for twenty years with the old model; so, firstly, I have to change my way of thinking and learn how to implement the new one properly. The old teaching method has been inculcated in me, so the change is a long process of self-learning.”

Although it is not an easy task to alter teacher mindsets, a sustained effort to expose teachers to the VNEN model through professional development is crucial. Biweekly cluster meetings would serve as an important platform for teachers not only to discuss and practice VNEN approaches but also to learn from fellow VNEN teachers (especially those at a more advanced level) about their experiences with the model and the positive effects they have realized through facilitating more participative and collaborative learning.

### 7.7.2 Challenges Resulting from Ethnic Minority Students’ Proficiency in the Vietnamese Language

One of the major challenges faced by teachers and principals in implementing VNEN is the

limited proficiency of ethnic minority students in Vietnamese. This is particularly true for schools that are heavily populated with ethnic minority students. The CS6 principal and teachers reported that applying the VNEN model has been particularly challenging for lower grade students with poor Vietnamese vocabulary and limited reading skills. Similarly, at CS12, where almost all students are non-Kinh and have limited proficiency in Vietnamese, teachers stated that their students have difficulty studying on their own using the learning guide. As one fourth grade teacher stated, “They often use the same words repeatedly and make incorrect sentences in both writing and speaking.” Hence, the teachers spend a significant amount of time adjusting the learning guide to better accommodate the learning needs of their students, which is not always easy; thus, they feel the need for more professional support. At CS9, a large proportion of the students are Khmer, and they have difficulty communicating and following the lessons in Vietnamese. A third grade teacher there stated: “The disadvantage is that most students are from ethnic minority groups coming from remote areas. These students make up about 70 percent of the class, so their ability to speak Vietnamese and to present in front of the class is still limited.”

To cope with the challenges presented by ethnic minority students’ lack of language proficiency, teachers take different approaches. Teachers in CS9 said that they work closely with ethnic minority students and encourage them to practice speaking Vietnamese at home with their parents. Both CS12 and CS9 teachers addressed the importance of combining the VNEN model with the traditional (teacher-centered) model to some extent. The fourth and fifth grade CS12 teachers commented that using both VNEN and traditional models would be more effective for teaching ethnic minority students rather than abandoning the traditional model altogether. Similarly, the fourth grade CS9 teacher remarked that combining the two models would help ethnic minority students—who tend to be passive



learners and still have difficulty following the learning guide on their own—absorb information more effectively. The teacher believes that continuing to provide lectures when needed will help students improve their performance.

While challenges regarding proficiency of ethnic minority students in the Vietnamese language are not unique to VNEN schools, a more concerted effort could be made to help those students improve their readiness for school by combining the program with early childhood education interventions and/or by developing innovative approaches to address those challenges.

### 7.7.3 Challenges Associated with Parents

Teachers often associate inability of parents to help their children academically with the insufficient knowledge of parents as well as their temporary migration status. The CS6 teachers stated that many parents are not knowledgeable enough to help their children with their application exercises at home. To cope with this challenge, the fifth grade teacher gave her contact numbers to parents in the hope that they would ask questions directly, if necessary. In addition, migration of parents was a common issue among the studied schools. Teachers alleged that parent absence leads to less parental involvement in student learning, both at home and in school. The third grade teacher at CS6 commented that some students could not work on application exercises because their parents worked away from home. Students normally stay with their grandparents during those times, and many grandparents do not actively participate in student learning or school activities. These parental challenges are common, especially in areas with disadvantaged student populations. Nonetheless, given the emphasis of the VNEN model on community involvement, a more active engagement of the broader local community, including

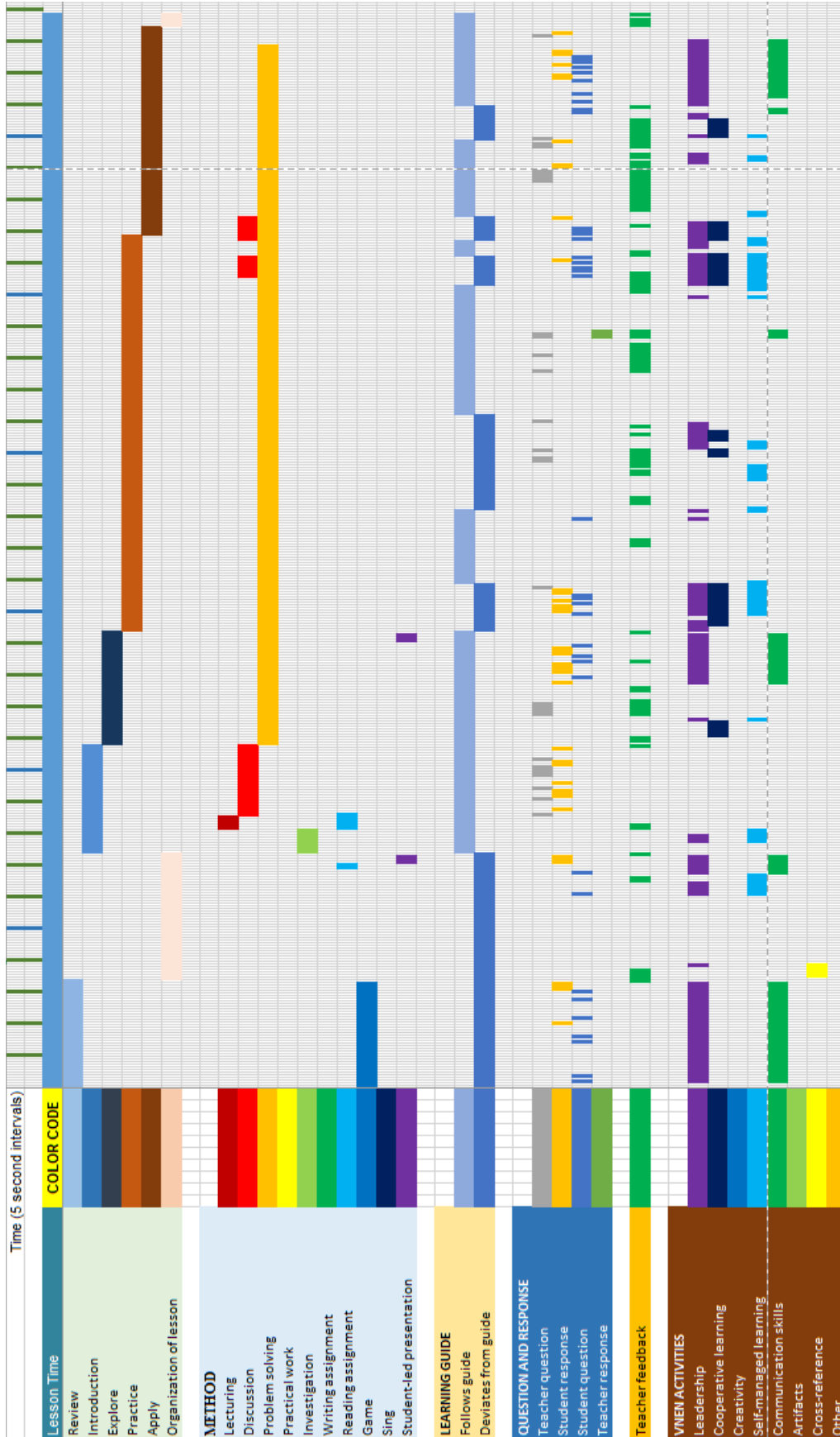
grandparents, should be encouraged to forge stronger family-school-community ties and support students in need of substantial academic help at home.

## 7.8 Further Exploration of Patterns in Classroom Practices and Interactions

The lesson coding methodology utilized a multidimensional structure to capture instances of specified events and activities in the classroom. As displayed in Figure 7.4, the coding captured the events with timestamps, including durations, frequencies and cross-dimensional combinations of what takes place at the same time. Many of the codes included attributes that capture important qualifying categorizations and high-inference features such as level of student engagement or level of advancement. The data allow for overall snapshot summaries across lessons, but also allow for intricate pattern analysis of individual lessons and search for dynamic patterns across lessons. The sequence of events can be analyzed to understand how events unfold and what triggers certain instances. The coding is heavily oriented to how interactions between teachers and students, and students with other students, can be analyzed in terms of types of questions asked and responses given or how teachers interact with their students for feedback and support. Interactions can be contextualized based on the activities taking place and the teaching-learning methods being utilized in order to gain deeper insights on why things take place in the way that they do. These data can even be extended through more advanced data capture with sociometers that use variables to explore interpersonal and intrapersonal relationships. While this phase of the study has touched upon aspects in relation to the research questions posed, there are many opportunities for further analysis.



**Figure 7.4** Visual Example of Multiple Layers Coded over the Course of the Lesson



Source: VNEI Impact Evaluation study primary data, Authors calculations.

# TAKEAWAYS:

## Qualitative Research Using Videos

This chapter presented a summarized version of analytical findings from a method based on videos of VNEN classrooms. The analysis sought to examine closely the practical manifestations of VNEN practices. The chapter presented the factors that appear to be associated with VNEN implementation and the challenges faced by teachers and other stakeholders.

### MULTIPLE PATHWAYS

- The video analysis suggests that VNEN students are not only given multiple ways to learn, with a more prominent pedagogical use of exploration and discussion, but also opportunities to practice and exercise problem solving through both individual and group work.

### 21ST CENTURY SKILLS

- Despite some variation across schools and within classrooms, VNEN schools provide more space for students to develop and practice 21st century skills, such as leadership, teamwork and cooperative learning, communication, and self-managed learning, at both intermediate and advanced levels.

### TEACHER TRAINING

- Important advancement markers for 21st century skills from both the teacher and student perspectives can be leveraged when training teachers on how to both encourage and support the development of non-cognitive skills.

### LEARNING GUIDE FLEXIBILITY

- With training support from MOET, VNEN teachers are using the learning guide with a certain level of flexibility as they see fit by making modifications to and/or deviations from activities, yet still meeting quality standards and teaching all required content.

### CHALLENGES

- Some of the challenges faced by VNEN include the persistence of traditional mindset among some teachers, the limited Vietnamese language proficiency of ethnic minority students, and the inability of some parents to provide academic support for their children.

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Video analysis shows that VNEN implementation has multiple pathways to effectiveness. The reform in the future will be well advised to continue to use analytical coding of classroom videos for continuous learning and feedback.



# Policy Conclusions and Recommendations

# 8

## 8.1 Positive Impact of VNEN

The VNEN program has had a positive impact on cognitive and non-cognitive achievement of children in Vietnam. This study reported the findings of positive impact using a rigorous impact evaluation procedure that followed a cohort of students from Grade 3 through to Grade 5. The program placement was not randomized, but a propensity score matching exercise was carried out to determine a matched panel of both a control and a treatment group of schools. Balance tests of student achievement two years prior to the baseline show a parity in performance prior to the program initiation. Just in case there may be unobservables that may still introduce bias, we were able to adopt a differencing approach where the dependent variable was the difference in Vietnamese and mathematics test scores as children progressed through Grade 3, Grade 4, and Grade 5. We also estimated the non-cognitive development of the children over the three years of the program and found a positive impact.

Almost any educational program tracked over a period of time will show growth in the cognitive and non-cognitive abilities of children. This study compared the growth of the children in the VNEN program with a counterfactual group to see the difference in growth. The preference in this study was to collect detailed data on the teaching and learning processes; we did not collect data on costs. However, the lack of precise cost data is not a problem because the operating costs of the program are substantively the same over the treatment and control group. VNEN is merely a different way of organizing the same

resources—the student–teacher ratio does not change, and learning guides replace textbooks. A rough calculation of the cost of the GPE-VNEN program is also instructive. The program cost approximately US\$85 million, and benefited about a half million children over four years, not counting the children to be benefited in the future. This works out roughly to about US\$40 per student per year. The average per student expenditure for primary education is about US\$1,000 per year in PPP terms (approximately VND 8 million). The main element of fixed costs was for developing the teaching method and materials; the marginal cost of reaching additional students was the same as any other public school in Vietnam. Considering the impact on test scores and non-cognitive development, and the fact that the program itself was not more or less expensive than traditional teaching, the overall conclusion was one of positive impact.

## 8.2 Theory of Change of VNEN

The VNEN program is a comprehensive program of pedagogical reform. It seeks to consolidate on the past gains in Vietnam to make a direct impact on cognitive achievement as well as impact non-cognitive achievement. Non-cognitive achievement, aspects of which are termed as ‘21st Century Skills’ because of their increased relevance in the hyper-connected and dynamically accelerating modern world, are useful for their own sake, and also because they are associated with improved cognitive outcomes. Vietnam is committed to the so-called ‘Fundamental and



Comprehensive reform' of the education system of which the VNEN program was a vanguard. The impact evaluation of VNEN has a very important role to fill because it helps to provide early feedback on a reform that will roll out over more years as the cohort of primary school children move through secondary school and new cohorts of primary school children enter the system.

With such an ambitious scope and long-term time frame, it will be very useful for all the stakeholders to have an accurate idea of the theoretical underpinnings of the VNEN reform. As described in detail in Colbert, Chiappe, and Arboleda, 1993, the Escuela Nueva program in Colombia has practical and empirical roots, with solutions devised to tackle the issue of multigrade instruction and the exigencies of rural life. However, as the program grew over time in Colombia and other countries, and most definitely in Vietnam, the conceptual basis has benefited from the accretion of various extremely useful and time-tested educational and philosophical principles. As sketched out in Figure 1.2 about peer-assisted learning, due to Topping, 2005, very deep philosophical considerations underlie the VNEN model. Participative and collaborative learning is expected to work because in a fundamental way, all human learning, some would say all learning, can be understood as consisting of a combined process of exploration and engagement (Pentland, 2014).

And the philosophical wellspring for VNEN does not go dry even after drawing from the substantively deep literature regarding why learning together should work. This study provided useful references to the body of knowledge regarding movement and learning, and play and learning. From an administrative point of view regarding implementation, we have referred to the literature on complex adaptive systems. While VNEN will remain a practical program which will thrive only so far as it receives empirical validation, it would be very useful for critics to continue learning from the various theoretical bases of VNEN, and to nurture its further development.

### 8.3 Leadership of VNEN

This study has uncovered a critical nexus between the implementation of VNEN and the outcomes or benefits derived from the program. For example, while the mere nomenclature of a 'VNEN school' appears to have a statistically insignificant impact on Vietnamese learning, the results depicted in Table 6.1 (Panel B) show an impact of 0.16 standard deviations when we consider moving halfway along the distribution of the implementation index we devised and presented in Chapter 4. Yet the same table also shows a slowdown in the growth from implementing the VNEN program, a convergence over time in results so that the early results of VNEN, from Grade 2 to Grade 3 and Grade 3 to Grade 4 are not as strong as from Grade 4 to Grade 5. Some part of this would be an artifact of measurement, and future research will be required to sift out this issue more carefully than we have been able to do. Yet, to the extent that the phenomenon does indeed take place, it points to the need for emphasis on leadership.

With a reform as wide ranging as VNEN, the championship of leaders at every level, from the national, through the provincial, district, and school levels, appear to be a necessary condition for success. We have seen that in certain provinces, there appears to be a higher incidence of complete implementation of VNEN. We found that schools with advanced levels of implementation tended to have principals with a deep understanding of the VNEN model, who encouraged teachers in the school to follow it. Activities such as periodic meetings among teachers in the school to discuss and practice VNEN approaches seem to contribute to its adoption. The ability to provide leadership regarding VNEN appears to be inversely proportional to the individual's direct experience and knowledge about the program. Those who have been part of or observed advanced implementation of VNEN are best placed to inform others about the program.

Implementation heterogeneity explains to some extent the different levels of acceptance and interest in VNEN among provincial leaders. It is difficult to separate cause and effect as provincial leaders are instrumental in driving implementation, but it is clear that the impression of leaders will be driven by what they have observed. If they have observed a low level of implementation, they might have a less than favorable impression of VNEN; if they have seen animated children with high levels of cognitive and affective engagement, they might appreciate and understand the program better.

Ensuring a high level of implementation by influencing leaders at all levels is a challenging problem—clearly. Trying to mandate or regiment the implementation would not work at all, because it would be logically inconsistent to mandate a feature like community participation. The best chance for success would come from feedback loops generated through sharing of successful implementation. At any level, provincial leaders or teachers would be able to respond positively to demonstrations of success. Events such as video competitions which had been organized at some point during implementation can be conducted with dedicated attention and would be instrumental in reducing the width of the distribution of the implementation index toward the higher end through a process of imitation and experience of rewards.

## 8.4 Training of Teachers

The VNEN program pioneered a new paradigm of training where committed, high performing teachers were co-opted early to become trainers themselves. In this way, the training was not something developed by trainers removed from practical realities and provided to teachers in a mimic of the traditional frontal model of teaching. Rather, training was conducted in the form of a VNEN classroom, complete with groups and group leaders and warm-up games. As shown in the heat maps presented in Figure 3.4, teachers'

pedagogical beliefs show a close alignment to the ideas sought to be imparted by training. In the case of VNEN teachers, the practical acts of implementing what they learned in the training reinforced and strengthened their beliefs. Both qualitative and quantitative analysis indicates that teachers are using new teaching practices related with the VNEN approach. However, we have also seen the high level of heterogeneity in implementation. It is quite likely that one of the factors that led to this distribution is the low incidence in the implementation of cluster training. Biweekly interaction between teachers appears to have taken place only sporadically in many schools.

Going forward, VNEN teachers should be helped with the on-site cluster training to better acquire a set of skills that would help facilitate classroom activities more effectively. To reinforce and improve their role as facilitators, teachers should learn to become more observant by carefully monitoring each group and minimizing their direct involvement as long as students are tackling their task together. Second, teachers could receive more substantive training to sharpen their questioning skills, which would allow them to guide students to develop a deeper understanding through an enquiry mode of learning. Third, more rigorous training should be offered to diversify the techniques they use to motivate students to study better and exercise 21st century skills.

Some VNEN teachers addressed the difficulty of training student group leaders, while others indicated the lack of students with sufficient ability to assume the leadership role. One way to address this challenge would be to expand their perception of leadership and make them aware that it is not something certain children have naturally, but that it can be strengthened through practice and training. Another way to respond to this challenge would be to restructure group activities in such a way that team members have more shared responsibilities.



## 8.5 Deepening Participation

As with the limited implementation of biweekly cluster training, we also found limited engagement with parents and community members as compared to the intention of the VNEN model to closely engage with parents. The close involvement of parents in instructional processes represents a rather large cultural shift for many stakeholders. Some principals and teachers may believe that the predominantly large community of farmers that represents the parent body may not be amenable to close involvement in the school. Others may have tried and failed to engage the parents and may have persuaded themselves of the futility of trying again. Others may have been more persistent and met with success. Still others may have been very lucky from the outset, or even have found particular parents as champions of the effort, who lobbied and pressured for implementation. As is the case with teachers implementing aspects of the model, such as facilitating group work rather than directing children who happen to be sitting in groups, the generation of multiple feedback loops is probably the best way to bring about wider adoption.

From a policy perspective, it is useful to understand how the feedback loops may be engendered. A case in point is the use of artifacts in the classroom, including objects from real life and the community map. Typically, these have been one-off activities done with varying levels of enthusiasm. In our study we tried to capture this diversity by asking not only about the presence of artifacts but also about their use. We found that the use of artifacts was made very seldom, and the reason likely was that teachers may not have been encouraged or provided ideas regarding how to bring it about. For instance, once a community map is made, it may be a static document that no one refers to again. But fun activities could be organized that would serve a didactic purpose for both cognitive and non-cognitive skills. An example would be for children to identify on

the map the homes which had a person with a birthday that month, or houses where there were four generations of people living there and so on. Successful examples can be replicated through demonstration and replication, done on a completely voluntary basis.

## 8.6 Communications Program

This study was focused on the content of the VNEN program—how the program was implemented, the context in which it was implemented and the impact that the program had. The program did include a communication element, with the view to generate awareness and interest in the model among all stakeholders. To some extent, the communication program must have been successful, otherwise the phenomenon of control group schools voluntarily adopting the program and many VNEN elements spilling over into VNEN schools may not have happened. However, it is also true that some of the program schools themselves had a low level of implementation and part of the reason might have been an inadequate understanding of the VNEN program to the same extent that the high implementing VNEN schools had managed to attain.

Going ahead, there are four key elements of a communications program that would be very useful to keep in mind: (i) Factual basis: As far as possible all stakeholders need to be informed about the results and outcomes conducted in as objective a manner as possible. Thanks to the financial support from Dubai Cares, it was possible to carry out this impact evaluation study, but effort needs to be made to spread the results of the study; (ii) Champion stakeholders: A key phenomenon that was observed throughout the program was the clustering of good practices because of the exchange and replication of ideas. When one teacher found a way to provide facilitation to student government that was particularly effective, other teachers in her school tended to

copy her, but the idea may not have been transmitted to a neighboring school. If the successful idea were to be recognized as such, the chances are that the original teacher or group of teachers may wish to share the idea with others—but they would only be able to do so if provided with the mechanism and the incentives to do so. The video competition was a case in point; (iii) Countering misconceptions: It is quite interesting that when we sought to track attitudes of stakeholders regarding the traditional model or status quo, we found a possible deepening of belief about the appropriateness of the traditional model—as measured by people’s agreement with the idea that ‘there is no need to change.’ It is quite likely that attitudes may have resulted from misapprehensions about trade-offs between cognitive skills and non-cognitive skills, or a simple lack of awareness about the latest research showing links between play and learning achievement, but these can be corrected with appropriately designed communications; and (iv) Bi-partite or multi-partite communication: Finally, in the case of a far reaching reform program it is always important to have feedback loops from implementers on the ground to the policy makers. This happened to a large extent during the program, as senior MOET leaders crisscrossed the country visiting schools and incorporating adjustments in the program based on the feedback. Greater awareness about this phenomenon, which also took place at the provincial level, would go a long way toward generating ownership among all stakeholders.

## 8.7 Monitoring Socio-Emotional Skills

Currently, available methods for measuring acquisition of social and emotional (non-cognitive) skills rely on qualitative questionnaires of self-reported behaviors or reports by parents and teachers, collected at discrete points in time but referring to larger periods of time like the previous day, week, or semester. We propose

the adoption of a particular method—the use of sociometers combined with artificial intelligence (AI) algorithms, to provide a highly innovative and potentially game changing method to measure certain socio-emotional skills in real time and actually enhance the acquisition of these skills through real-time feedback to teachers and students. These devices capture real-time physiological data from individuals and data regarding the behavioral dynamics of groups. The resulting stream of ‘Big Data’ will be analyzed using sophisticated computer algorithms. The method has been used extensively in a multitude of contexts around the world and reported in scientific journals and books.

At present, the teacher in a VNEN classroom has a limited understanding of the dynamic of interaction within a group and the classroom as a whole. However, the adoption of a sociometer would enable the teacher to have a real-time monitoring of the health level of interaction within a group and direct her energies and attention to help improve the dynamics. The students can obtain the same feedback themselves and be able to self-correct their behavior for improving the health of their interaction. Pentland, 2012 provides evidence regarding the utilization of this method in corporate and academic settings, where the use substantially enhanced the quality of outcomes. The underlying theoretical model is based on the influence that humans have on one another’s behavior through direct and indirect interaction (Pan et al., 2012). The extension of this model is quite feasible from the corporate context to the context of the VNEN school. Recent advances in technology make these devices quite inexpensive, perhaps US\$5 apiece and the use can be scaled up quite easily. However, the development of the calibration of the instruments and generation of valid and usable skill measures will require a major research effort for which the study team, in collaboration with the technology’s founders at the Massachusetts Institute of Technology (MIT), are engaged in the search for research sponsorship.

## 8.8 Directions for Further Research

The quantitative data collection over a period of nearly three years has generated a huge amount of data that can generate many further insights. While the impact evaluation results presented here can be further deepened and developed from this data, the team from Research on Improving Systems of Education (RISE) will collect further data from a part of the same cohort of children as they go through secondary school. The primary data collected under the current study itself provide a veritable data mine of research on various topics including teacher efficacy, principal leadership, and other issues related to educational psychology and student achievement. It is hoped that the data will be made available by the Vietnamese government to researchers in the future to carry out further investigation.

The qualitative component also has many potential avenues for further research. With 810 videos from 270 lessons (with each lesson containing a video of the teacher and of two student groups), there are many opportunities to delve deeper into specific aspects of what takes place in the classroom. Since 540 of these videos are coded, it is easy to quickly identify instances of specific types of instruction, methods, and activities. For example, the exploratory method (which is found in VNEN but is rare in traditional classrooms) could be analyzed in more depth to better understand what makes for effective exploratory activities. It is possible to analyze the dialogue

used in the classroom. For example, teacher use of questioning can be further explored to analyze questions that elicit responses involving higher order thinking from students.

The videos also provide ample opportunity to create vignettes of instances for use as examples in training and professional development. Many examples of advanced VNEN practices have already been identified in this round of analysis, but this could be extended with the creation of a database of instances. The vignettes could also include a set of more specific tags of what the videos represent. For example, clips identified for high levels of leadership could be further catalogued as being where the leader effectively leads a discussion involving higher order thinking, where the leader ensures all members are actively participating, or many other ways in which leaders demonstrate unique skills.

From the teacher perspective, many instances can be created to demonstrate effective facilitation of activities. This would be particularly helpful in training new teachers who are accustomed to running their lessons in a teacher-led manner and are not familiar with facilitation techniques. All transcripts have been catalogued using Nvivo and have already been tagged with specific categories and subcategories. While most of the interview transcripts have been utilized to answer a specific set of questions posed in this round of analysis, there are countless ways in which the transcripts could be further explored.

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# Index

- Artifacts, 57
- Assessment, 62
- Awareness, 66, 88
- Beliefs, 28, 39, 44, 47, 83, 84
- Classroom, 57, 112, 113, 125
- Colombia, 3
- Community Engagement, 25
- Community Involvement, 10
- Education Program Development Fund, 3
- Educational Objectives, 44
- Furniture, 57
- Group Work, 61
- Influence, 34, 53
- Innovativeness, 51
- Job Satisfaction, 40
- Learning Guides, 60
- Ministry of Education and Training, 3
- Multigrade, 6
- Objective, 44
- Parental Engagement, 65
- Parents, 69, 81, 88–91, 125
- Participative and Collaborative Learning, 6
- Pedagogical Elements, 60
- Principal, 22, 28–30, 34, 67
- Readiness, 25
- School Autonomy, 21
- School Grants, 24
- Self-Efficacy, 51
- Student Government, 64
- Students, 69, 124
- Study Design, 14
- Teacher Demographics, 39
- Teacher Profile, 39
- Teacher’s Beliefs, 39, 44
- Teachers, 51, 74, 124, 131
- Teaching Method, 57, 61
- VNEN Implementation Index, 66–78

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# THE MAIN TAKEAWAYS:

## VNEN Has a Positive Impact on Vietnam

- The reform needs champions throughout the system, from top to bottom. The champions need to be informed accurately about both the underlying educational theories and the empirical facts regarding implementation in practice.
  - A sustained information campaign is required that targets both communities of the program schools and wider audiences. This information campaign needs to clarify the origin and purpose of the reform, explain the expected benefits, and lay out the required behavior from all stakeholders for successful implementation.
  - In addition to the adequate understanding of both concept and practice, conditions need to be put in place to motivate stakeholders to fully adopt the reforms in teaching and learning practices.
  - Well-functioning monitoring and evaluation systems that provide feedback throughout all levels of the system are a key element of such favorable conditions—with feedback going both ways, and including the crucial feedback from students, parents, and teachers.
  - Substantial school-based training and support through the school year is needed—information from classroom observation and actual practice, as well as the tacit knowledge of teachers, should be accessed for a cycle of continuous learning.
  - Effective participative and collaborative learning is a complex undertaking with heavy cultural influences. Further high quality research at all levels needs to be encouraged to learn about the approaches that are best suited to Vietnamese conditions.
  - Vietnam's education system is widely regarded internationally as a 'success story'. Continued engagement with the international education research community will bring mutual benefit for Vietnam as well as other countries who wish to learn from Vietnam.
- .....
- Vietnam has the potential to lead the developing world regarding the achievement of the goal of learning for all, providing 21st century skills in an inclusive way.

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