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The Impact of Holistic Educational Programs on Quality and Learning Outcomes in Cambodia

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Abstract: Since 2013, Save the Children International, funded by the Norwegian Government (NORAD), has been implementing a four years' educational pilot program called "I'm Learning!" in 15 rural primary schools in Cambodia. This holistic program is based on four main Quality Learning Environment (QLE) guiding principles (GP): emotional and psychosocial protection; physical protection; teaching learning environment (active learning); collaboration between schools and parents/community. In order to validate the value of the QLE framework using evidence-based methodologies, Save the Children Norway (SCN) and Save the Children International (SCI) in Cambodia engaged an independent local NGO — Kampuchean Action for Primary Education (KAPE) — to design and conduct a research study to assess the relationship between SC interventions according to the QLE GP and learning outcomes during the last three years of the four year pilot.

The research is based on four schools out of fifteen in which SCI undertook interventions. Four other schools where no SCI interventions took place were selected for comparative purposes. The research is based on qualitative and quantitative data collected over three school years, 2014–2017. The paper will show that "I'm Learning!" really made a difference in reading skills, and that although it is not possible to prove a clear relationship between QLE GP and student learning outcomes, three main improvements lead to better student learning outcomes in the framework of "I'm Learning!", namely community-based monitoring, positive discipline and enriched teaching methods.

Key words: holistic educational programs, quality learning environment (QLE), learning outcomes, Cambodia

1. Introduction

In spite of recent successes in its educational development mainly with respect to access, Cambodia's education system still ranks among the worst in Southeast Asia, particularly with regards to educational quality.

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Indeed, general assessments of educational quality rank Cambodia in the bottom third of the Association of Southeast Asian Nations (ASEAN) countries (e.g., World Economic Forum, 2014). The conventional wisdom is to mainly attribute this state of affairs to the leadership of the education system under Democratic Kampuchea (1975–1979) when many schools were closed down and much of the teaching force was systematically killed (e.g., World Bank, 1994; ADB, 1996). However, Ayres (2000) disputes this assessment and attributes the deeply rooted problems in the education system not to the actions of the Khmer Rouge (though these certainly amplified the problems) but to dysfunctional policy patterns in the education system that were in place long before the Khmer Rouge. These patterns refer mainly to the failure of policy makers to base the policy-making process on rationalized frameworks and long-term planning. However, many policy decisions have a political overtone that overrides more practical considerations (Ayres, 1999)[1]. These educational patterns have important implications for the adoption of more holistic approaches to educational development, which is the topic of this research.

The contemporary period in the history of Cambodia's education system starts after the peace agreements in 1991 that were signed by the warring parties involved in Cambodia's civil war (Ayres, 2000). This event occurred against a turbulent geopolitical backdrop: the Soviet bloc had collapsed and the Vietnamese government left the country; the United Nations brokered national elections in 1993 and opened a pathway to Human rights and Democracy; and the Cambodian government opened the borders to a market economy. During the 1990s, a considerable number of NGOs came to Cambodia, and many have become involved in the educational sector to work along with the Ministry of Education. As Cambodia re-joined the community of nations following the civil war, the country also joined the international goals of Education for all (EFA) initiated in Jomtien in 1990 and reconfirmed in Dakar in 2000. The decision to make EFA a national policy was important because it is intimately linked to the International Convention on the Rights of the Child, and aims at full enrollment of the children of the world in 2015 (from Grade 1 to 9)[2]. Important sources of funding for the education system include multi-lateral (e.g., World Bank, Asian Development Bank (ADB), United Nations Children's Fund (UNICEF), the European Union (EU), etc.), bilateral (Swedish International Development Agency (SIDA), United States Agency for International Development (USAID), Japan International Cooperation Agency (JICA), etc.) and non-governmental organizations (e.g., Save the Children, Child Fund, Kampuchean Action for Primary Education, etc.)

In 2001, Education for All was further supported by the UNICEF educational movement known as Child Friendly Schools (CFS). The CFS approach to educational development came about as a result of dissatisfaction with stand-alone, uni-dimensional development projects that characterized much of the period before 2000. Recent research has demonstrated the need to address both supply and demand-side issues within the education system when doing development (e.g., Bredenberg, 2000, 2009; Hopkins et al., 2000). That is, the tendency of stand-alone projects to ignore other aspects of a child's environment relevant to learning often has the effect of undermining such projects, even if the interventions are properly implemented. CFS methodologies with their focus on the "whole" environment are intended to address such issues and move development away from uni-dimensional approaches.

CFS is divided into six dimensions with the goal of creating an attractive school for children. More precisely, CFS aims at raising awareness of health and hygiene issues, at decreasing gender inequalities, at implementing a

[1] A classic example that manifests this tendency was the decision in 1996 to force all teachers to retire early at the age of 55 years in order to generate posts for patronage of those who had supported the Royalists during the civil war.
[2] The assessment for Cambodia was published in UNESCO (2015).

"child centered" approach in teaching, at promoting active learning, and involving children in the school decision making process. Furthermore, CFS seeks to increase the engagement of communities (parents, villagers, local political authorities, etc.) in the daily life of the school. In other words, CFS promotes a decentralized school system.

In 2007, the Cambodian Government officially adopted CFS as a national policy (MoEYS, 2007). With CFS came the first holistic approach to primary education development in contemporary Cambodia and political promotion of children's empowerment and democratic educational values. "I'm Learning!", initiated by Save the Children Norway and implemented by Save the Children International in Cambodia in 2013, takes its roots in this historical and political context.

2. "I'm Learning!" and the QLE Framework in Rural Cambodia

Since 2013, Save the Children International, funded by the Norwegian government (NORAD), has been implementing a four-year educational pilot program called "I'm Learning!" in 15 rural primary schools in Cambodia. This holistic program is based on four main Quality Learning Environment (QLE) Guiding Principles (QLE GP): 1) emotional and psychosocial protection; 2) physical protection; 3) teaching learning environments (towards active learning); and 4) collaboration between schools and parents/community. In the context of this study, these are known as General Principles (GP) 1, 2, 3 and 4. Each GP is divided into sub-standards, with a total of 28 sub-standards.

Government staff from the ministry of education, youth and sports (MoEYS) at the national level attended the meetings, workshops and trainings provided by Save the Children within the framework of the "I'm learning!" implementation process. This was also the case at provincial level, in Kampong Cham, Kampong Chhnang and Kratie, the three provinces where SC implements "I'm learning!". Their involvement aims at capacity-building, empowerment and sustainability, so that after the four years period of implementation, "I'm learning!" can continue and be carried out and monitored by the local government. Indeed, the long-term purpose of the pilot is for SCI to develop a common approach and model which can be replicated and scaled up in different contexts.

While somewhat different from the CFS formula promoted by UNICEF (see above), "I'm learning!" shares a holistic approach that is an integral element of integrated project designs. The project came at an opportune time for Cambodia, as there has been renewed debate about the effectiveness of integrated and holistic project approaches such as Child Friendly Schools whose implementation process has been seriously hampered by multi-scale misunderstandings (Bernard, 2005; Reimer, 2012; Prigent, 2014). These misunderstandings refer mainly to findings that stakeholders have not internalized the principles of CFS; that is, they can explain 'what' they are doing but not "why" they are doing it. In addition, there has once again been a shift in development away from integrated project designs towards more uni-dimensional programming where the focus is again on only one aspect of a child's learning environment as opposed to multiple foci (see for example USAID's Education Strategy, 2011).

In order to validate the value of the QLE framework using evidence-based methodologies, Save the Children Norway (SCN) and Save the Children International (SCI) in Cambodia engaged an independent local NGO — Kampuchean Action for Primary Education (KAPE) — to design and conduct a research study to assess the relationship between SC interventions according to the QLE GP and learning outcomes during the last three years of the four year pilot. Such longitudinal studies are rare in the Cambodian development sector.

Table 1 QLE Framework: 28 Sub-principles

1. Emotional and psychological protection	**2. Physical protection**	**3. Active learning process, improved learning outcomes**	3.9 Teacher training on child rights and protection
1.1 Code of conduct for learners and teachers	2.1 Safe Learning Area	3.1 Teacher presence in the classroom	3.10 Learners Participation in Teaching & Learning Process
1.2 Harassment Reporting system	2.2 Safe drinking water	3.2 Teachers have specialized Training	3.11 Learners participation in decision making
1.3 Learning Environments Discrimination Free	2.3 Adequate sanitation facilities	3.3 Teacher's technical support	3.12 Child rights expressed in Learning environment
1.4 Teachers interaction with students	2.4 Play area is safe	3.4 Teaching and learning material	**4. Close collaboration between school and parents/community**
1.5 Teacher Psychosocial training and support to children	2.5 School is accessible (hours, location, fees)	3.5 Lesson plans and teaching process by teachers	4.1 School Support Committee (SSC) and Commune Education for all Committee (CEFAC) participation
	2.6 Skills based health education	3.6 Teachers use the mother tongue of majority of learners	4.2 Parents and teachers collaboration
	2.7 Health-promotion programs	3.7 Teacher interaction with learners	4.3 Parents and community training and capacity building
	2.8 School Disaster Management Plan	3.8 Assessment strategy	

3. A Potential Relationship between QLE Principles and Student Learning Outcomes

The research aims to assess the relationship between implementation of interventions related to the QLE framework and student learning outcomes. Student learning outcomes refer to literacy, numeracy and to five life skills, namely critical thinking and problem solving; moral, ethical and citizenship; health and hygiene; self-regulation; interpersonal skills and communication. In terms of the research themes addressed by this study, researchers seek to answer five research questions:

(1) How do pupils in intervention schools perform in terms of learning outcomes compared to those in comparison schools?

(2) How does the psychosocial environment relate to learning outcomes in intervention and comparison schools? (QLE GP1)

(3) How does the physical environment relate to learning outcomes in intervention and comparison schools? (QLE GP2)

(4) How does active, child-centered learning relate to learning outcomes in intervention and comparison schools? (QLE GP3)

(5) How does school-community and community participation relate to learning outcomes in intervention and comparison schools? (QLE GP4)

The research team selected four schools among fifteen intervention schools for intensive study, and four comparison schools. These were then compared with that were carefully matched in terms of school type. Type A and Type B are core schools, Type C and D are satellite schools. In this context, core schools refer to centrally located resource schools that support smaller surrounding schools known as satellites. This system is part of a "cluster school" system that was established by government back in the 1990s. In terms of different socio-economic backgrounds between the eight schools, the main difference derives from being involved in plantation (A and B) or rice farming (C and D). This being said, the most important criteria to be kept in mind about these eight schools is that Type B and C schools have overcrowded classrooms and involve many "two shifts" teachers, in contrast to Types A and E schools. In addition, given the large development budget provided to

Cambodia, it was found that both intervention and comparison schools had received significant amounts of development aid over the last 20 years for infrastructure, water & sanitation, and notably the UNICEF Child Friendly School (CFS) program that became nationwide in 2007 at the primary school level (school management, community involvement, student councils, gender issues, student-centered methodologies, etc.). In this CFS context, the research team essentially sought to determine the relationship between improved QLE and student learning outcomes.

By selecting these eight rural schools, the research team wished to compare improvements in student learning outcomes in all kinds of schools, in relation to the four QLE Guiding Principles described earlier. In this regard, researchers tracked two cohorts of students over three years through a process of pre- and post-test administrations each year. The subject tests focused on literacy, numeracy, and life skills. One cohort was tracked from Grade 1 over three years to Grade 3 (Cohort 1); another cohort was similarly tracked from Grade 4 to Grade 6 (Cohort 2). This quantitative data collection was complemented with qualitative data collection analyses that were facilitated by interviews with school directors and teachers, classroom and playground observations, and Focus Group Discussions (FGD) with students in Grades 1 and 4 during the first year, Grades 2 and 5 during the second year, Grades 3 and 6 during the third year. While these qualitative investigations could only be conducted once during the first year, they were conducted monthly during the last two years of the research. In addition, the research team also used case study methods to document development in a small number of selected children. In this respect, researchers selected 24 students in the four intervention schools (six per school, studying in Grade 1 and Grade 4 during the first year) and conducted regular interviews with their parents at home and with the child at school.

4. Findings for Research Question 1: “A Real Difference in Reading Skills”

Tables 2 and Table 3 reported below summarize the student learning outcomes in both Cohorts 1 and 2, in each grade, over the years 2014-2015 (Year 1), 2015-2016 (Year 2), 2016-2017 (Year 3). The Year 1 findings showed that in Cohort 1, intervention school Grade 1 students performed significantly higher than comparison school students in reading, writing and math (but still below the average), but showed no difference for life skills. In Cohort 2, intervention school Grade 4 students performed significantly better in reading (above average), scored equal in writing and math (below average), and performed more poorly in life skills. Nevertheless, the findings had limited significance, as the effect size was low. Thus, after two years of implementation, intervention school students performed relatively better than comparison school students in reading skills, and to a lesser extent (only Grade 1) in writing and math.

With respect to Year 2, researchers found that in Grade 2 (Cohort 1), intervention school students performed significantly higher than comparison school students in reading (average), significantly higher in writing and math (below average), and scored equal for life skills. In Grade 5 (Cohort 2), intervention school students performed significantly better in reading (above average), scored equal in writing (average) and math (below average), and lower in life skills. Statistically significant differences were more pronounced than the Year 1 findings, as the effect size was strong for reading in Grade 2 (but low in Grade 5), medium for writing in Grade 2 and low for math in Grade 2. After three years of implementation, intervention school students performed better than comparison school students in reading skills, and to a lesser extent (only Grade 2, with low effect size) in writing and math.

Finally, in Year 3, researchers found that Grade 3 (Cohort 1) intervention school students performed

significantly higher than comparison school students in reading and life skills (above the average), writing and math (below average). In Grade 6 (Cohort 2), intervention school students performed better in reading (above average) and math (below average), and scored equal in writing (average) and life skills (average). The effect size was strong for reading, medium for math, low for writing and life skills in Grade 3; the effect size was low in reading and math for Grade 6.

After four years of implementation of the "I'm Learning!" pilot, intervention school students appear to perform significantly better in reading (above the average), significantly better in math (but still below the average), and to a lesser extent in writing and life skills (only Grade 3, with low effect size). The early primary school grades (1-3) showed better learning outcomes than the upper primary school grades (4–6). It has to be noted, however, that the proficiency level in math remains weak for all cohorts and schools, except for Intervention school A Grade 2 and Grade 3 and Intervention School E Grade 3. The best improvements are clearly seen in reading. Intervention school students clearly demonstrate a major difference in reading and to a lesser extent in writing and math.

4.1 Findings that Reflect A Local and National Tendency

The qualitative data collected help explain the findings. Indeed, both intervention and comparison school teachers acknowledge that their students demonstrate better proficiency in reading than writing (Grades 3 and 6). According to the teachers, it is easier to follow-up on reading skills than writing skills; teaching writing skills is more difficult for the teachers (and students) as it requires more instruction in grammar to better use an enriched set of methods. One could also assume that oral repetition may 'win' over gestural copying (which are the two traditional methods for teaching literacy). A Grade 3 intervention school E teacher said that he particularly focused on reading because of the reading competitions organized by SC.

Both intervention and comparison school teachers also noted that students (both Grades 3 and 6) have difficulty remembering the multiplication tables, easily "forgetting" what they learn in math. While they are able to understand the lesson and to do the exercises properly the day they learn the lesson, many of them still fail the tests and quizzes conducted a few days or weeks later. The teachers were puzzled about this which challenges them in their daily working life. A Grade 6 Intervention School B teacher explained that math requires the teacher to make a strong pedagogical effort, by producing and using teaching materials, and inventing exercises to teach various mathematical algorithms. But according to her observations, most teachers simply follow the textbook. Both intervention and comparison school teachers said that students tend to do their literacy homework more often than their numeracy homework. They added that while some parents can help their child with reading and writing at home, many of them have weaker skills in math, especially as regards children in the upper primary school grades.

It also has to be noted that under the aegis of the Cambodian Education Sector Support Project (CESSP) financed by the World Bank from 2005 onwards, the MoEYS set up a system for evaluating pupils'knowledge in Khmer and mathematics in Grades 3, 6 and 9. These tests, carried out between 2006 and 2009, showed that the pupils' level was very weak, especially in writing and mathematics (Moeys, 2010, p. 67). Recently, reading seems to be a higher priority of the Ministry of Education and development partners, notably with the recent funding of reading benchmark development funded by USAID, World Vision and AusAID, and implemented by KAPE and World Education in September 2015 (end of Year 1).

At the end of the project, intervention school students' learning outcomes appear to reflect the tendency observed in the eight school, and perhaps more generally nationwide, where teachers are usually more comfortable

in teaching reading than writing, and in teaching literacy than numeracy, where students are more comfortable in learning reading.

4.2 About Life Skills

Regarding the way intervention school students apply life skills, the research team did not observe any significant differences with comparison school students (e.g., health and hygiene, conflict resolution, communication, self-regulation, critical thinking and problem solving, as well as ethics and citizenship). This was further confirmed by the results of the Life skills quantitative tests where it was found that intervention school students did not perform better on these tests than their counterparts in comparison schools. The FGDs conducted with Grades 4, 5 and 6 students in both school groups showed that they have about the same understanding of the life skills targeted in the curriculum. The observations conducted in the classrooms, on the playground and at home (i.e., case study students) did not show any difference in behaviors regarding communication among peers, conflict and its resolution, self-regulation, ethics or citizenship, etc. In both groups of schools, students ask permission before leaving the classroom, and greet the teacher when he/she enters the classroom.

Self-regulation behaviors (e.g., persevering in an activity, putting one's hand down if the teacher does not invite the student to speak, not leaving one's seat before the teacher has asked a student to do so, etc.) appear to occur at the same level and frequency. Furthermore, observations and interviews do not show any difference regarding conflicts among students and the ways they resolve them when they occur. In both comparison and intervention schools, boys tend to argue or fight more frequently than girls. In both groups of schools, on many occasions students resort to the children's game known as "hammer and scissors" to resolve a conflict or a disagreement in a fair way. All students appear to know it is bad to fight, and that their parents will feel ashamed if their teachers or school director reprimand them for it.

Table 2 Reading, Writing, Math, and Life Skills of Cohort 1 by School Group, 2014/15–2016/17

Variable	Grade 1, 2014/15		Grade 2, 2015/16				Grade 3 2016/17			
	Post-test (N = 787)		Pre-test (N = 969)		Post-test (N = 718)		Pre-test (N = 794)		Post-test (N = 680)	
	M	SD	M	SD	M	SD	M	SD	M	SD
Reading										
Intervention Group	17.09**	14.09	44.63*	42.15	135.43***	76.97	126.09***	76.26	171.69***	79.89
Comparison Group	13.77	12.34	37.7	37.65	90.22	70.12	91.80	73.01	131.77	86.85
Writing										
Intervention Group	20.25***	14.81	23.18	15.39	49.57***	27.87	31.72**	24.53	45.92***	27.06
Comparison Group	15.15	13.11	21.31	13.02	35.31	23.51	25.97	23.23	34.78	29.16
Math										
Intervention Group	20.88**	12.67	15.85	13.33	21***	14.21	10.07	7.14	22.39***	12.14
Comparison Group	17.76	13.05	14.84	6.4	17.18	10.49	9.23	6.93	17.53	11.42
Life skills										
Intervention Group	53.99	7.48	37.69**	8.56	39.05	9.88	25.75***	7.18	30.34**	7.15
Comparison Group	54.2	6.84	35.83	6.24	37.74	8.94	22.96	6.44	28.43	6.19

*$p < .05$, **$p < .01$, ***$p < .001$

Note:

- Total score of post-test Grade 1: Reading = 50, Writing = 50, Math=50, and Life skills = 66.
- Total score of Grade 2 pre-test and post-test: Reading = 270, Writing = 100, Math = 50, Life skills = 50.
- Total score of Grade 3 pre-test and post-test: Reading = 300, Writing = 100, Math = 50, Life skills = 50.

Table 3 Reading, Writing, Math, and Life Skills of Cohort 2 by School Groups, Pre-tests and Post-tests, 2014/15–2016/17

Variable	Grade 4 2014/15				Grade 5 2015/16				Grade 6 2016/17			
	Pre-test (N = 549)		Post-test (N = 468)		Pre-test (N = 535)		Post-test (N = 552)		Pre-test (N = 531)		Post-test (N = 407)	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Reading												
Intervention Group	24.92	12.2	32.39*	14.4	113.51**	97.35	235.07*	92.92	207.01	92.47	249.94**	79.73
Comparison Group	24.02	12.27	29.09	18.31	83.35	100.78	213.01	98.85	210.07	95.07	225.30	96.40
Writing												
Intervention Group	12.61	11.19	20.67	15.42	33.41*	20.37	51.7	26	39.44**	22.74	59.06	21.97
Comparison Group	14.02	12.32	20.39	15.53	40.37	25.8	52.09	25.3	46.44	20.94	58.13	23.59
Math												
Intervention Group	12.44***	9.06	22.24	11.77	6.12*	6.09	19.72	13.96	6.95***	4.04	14.70***	8.28
Comparison Group	15.87	8.84	21.39	9.16	7.92	6.38	19.03	12.46	8.27	3.48	11.87	5.30
Life skills												
Intervention Group	20.84	6.07	25.98**	5.29	23.96	10.61	26.23**	10.69	19.79	10.18	25.77	10.07
Comparison Group	21.09	5.46	27.59	4.88	24.81	7.72	29.79	10.85	19.09	8.59	25.73	10.25

*$p < .05$, **$p < .01$, ***$p < .001$

Note:

- Total score of Grade 4 pre-test and post-test: Reading = 50, Writing = 50, Math = 50, and Life skills = 37.
- Total score of pre-test Grade 5 pre-test and post-test: Reading = 360, Writing = 100, Math = 50, and Life skills = 50.
- Total score of pre-test Grade 6 pre-test and post-test: Reading = 380, Writing = 100, Math = 50, and Life skills = 50.

The FGDs conducted with students in both schools showed that on the playground, girls and boys rarely play with each other. One respondent explained, “We girls play with girls because we are girls and we don’t want to play with boys because some boys are rude. When girls play with girls, there is no argument. When girls play with boys, arguments usually occur, and we curse each other or stop playing. Boys like fighting in the game and sometimes they fight hard and it becomes real fighting”. During almost all the FGDs conducted over the three years of the research, boys and girls spontaneously sat separately from each other.

This being said, the research team still observed that intervention school students are more spontaneously polite towards adults, many have increased their self-confidence in learning activities and interacting with adults. In addition, the better water facilities and school health monitoring in intervention schools help them to demonstrate better hygienic habits (mainly washing their hands) when compared with comparison school students. The fact that students are more spontaneously polite towards adults can be understood from two different points of view: if students behave so, it is because they are asked to do so, which shows that the adults “care” more about the children at school; on the other hand, it also shows that in intervention schools, children are more controlled and submissive. Indeed, it should be noted that in this context, being more polite means greeting adults by bowing while joining hands. However, it is important to note that in the meantime, they show more self-confidence towards adults, they dare to communicate with their teachers and adults of their community more than comparison school students. This suggests that after four years of project implementation, intervention school students are more empowered, but in the framework of a strengthened hierarchical educational structure (strengthened under the influence of an improved QLE GP 4, see below). This is an important conclusion that the research team can provide regarding life skills.

In conclusion, intervention school students demonstrate statistically significant differences in reading, but to a lesser extent in writing and math. They do not demonstrate such differences in life skills, though qualitative data show that they are more empowered than comparison school students, in the framework of a strengthened hierarchical structure. No gender-specific impact was identified (in terms of student learning outcomes).

4.3 Comparison of Intervention and Comparison Schools

When compiling indications of improved performance in the various subjects and grades according to school type, the research team found the patterns of improvement shown in Table 4. The table reports every subject and grade the intervention school perform significantly higher (+) and lower than its comparison school (-), or equal (=) when there is no significant difference between the two groups.

In summary, Intervention School A, which has been teaching full time since November 2015 (beginning of Year 2), did not perform significantly higher than Comparison School A for the Cohort 2 (upper grades). Intervention School B did not perform significantly better than Comparison School B (both cohorts). Intervention School D performed significantly higher than Comparison School D in all skills for Cohort 1 and only in reading for Cohort 2. Intervention School E performed significantly higher than Comparison School E in all skills (no Cohort 2 in Comparison School E).

Table 4 Intervention Schools Performances in Comparison with Comparison Schools, by Subject, Grade and School Type

	Learning outcomes			
Type A Schools	**Reading**	**Writing**	**Math**	**Life Skills**
Grade 1	+	+	=	=
Grade 2	+	+	+	=
Grade 3	+	+	+	=
Grade 4	=	=	+	=
Grade 5	=	-	-	=
Grade 6	=	=	=	+
Type B Schools				
Grade 1	-	=	=	=
Grade 2	=	+	+	=
Grade 3	-	-	-	=
Grade 4	-	-	-	-
Grade 5	=	=	+	+
Grade 6	=	=	=	=
Type D Schools				
Grade 1	+	+	+	=
Grade 2	+	+	=	=
Grade 3	+	+	+	+
Grade 4	+	=	+	=
Grade 5	+	=	=	=
Grade 6	+	=	=	=
Type E Schools				
Grade 1	+	+	=	=
Grade 2	=	=	=	+
Grade 3	+	+	+	+

These findings show that Comparison Schools A and B, which have low quality environments, still challenge Intervention Schools A and B at the end of the project. In contrast, Comparison Schools D and E do not challenge Intervention Schools D and E (except the Cohort 2 in Type D for reading, math and life skills). It has to be noted that while Intervention School E is a very low quality and isolated annex school at the beginning of the project, it has demonstrated a remarkable improvement of all QLE GP over the project period.

5. Findings for Research Questions 2 and 3 (QLE Guiding Principles 1 and 2)

The intervention schools have received several trainings on school rules related to child protection. As a result, intervention school teachers have created a “request agreement” with their students. This document shows that SCI and the school agreed to promote quality learning environments by creating a moral document with the children of each classroom. If, in comparison schools, the (unwritten) code of conduct degrades into a merely administrative task in which “nobody cares”, the “request agreement” in intervention schools shows that students are clearly more aware of this document and the fact that they “have a voice”. Nevertheless, the observations, interviews and FGDs suggest that the students were driven to conduct it and that this document remains “adult-centered”; the FGDs and observations also showed that students and teachers do not really pay attention at this document once it is made.

Regarding the prevention of violence and the protection of children, the intervention schools have been trained by SCI in creating a harassment reporting system that is now visible in all schools. However, the fieldwork shows that students do not appear to be using it much and that teachers and directors do not really engage yet in child protection measures when they realize that a child faces domestic violence.

Intervention schools are more effective in applying “positive discipline” measures that forbid corporal punishment. These measures contributed to an effective child protection environment (in both physical and psycho-emotional terms) in intervention school classrooms. These measures are reflected in freer communication between students and teachers and improved student self-confidence in learning, which was not in evidence in comparison schools. These environments coincided with stronger learning outcomes in reading and to a lesser extent in math and writing. Teachers in Type A and E schools appear to be better able to build good classroom communication and learning environments that exemplify principles of child protection than in Type B and D schools who struggle with multiple shift teaching and overcrowded classrooms. Although the research does not show significant differences between Grades 2/3 and Grade 5/6, it was still observed that in Grade 2 classrooms, the teachers face more difficulty relating to classroom management. Grade 2 students are very young, they are easily agitated and do not easily concentrate. Accordingly, teachers may be tempted to resort to physical punishment in order to have a quiet classroom. It should be noted, however, that discrimination attitudes, e.g., by sex, class or religion, were not observed in any of the schools and may not be an issue in rural Cambodian primary schools.

Both in comparison and intervention schools, and because of the MOEYS/CFS health and hygiene promotion campaigns that have been conducted for many years, students clearly know that boiled, filtered or clean water prevents disease, contamination, stomach aches and diarrhea; that a clean environment prevents diseases (FGD, interviews). They also know this information from TV shows, parents, teachers and books. This being said, the research shows that intervention schools have a healthier environment than in the comparison schools, mainly because of the student council’s cleaning shift system, operational water systems and the availability of healthier

food. Nevertheless, many boys still appear not to use the bathroom when they urinate and many children still do not drink clean water. While it could not be definitively concluded that healthier environments are empirically linked to better learning outcomes, it seems logical to assume that a lower incidence of stomach ache and other short-term illnesses could help children to concentrate more during learning activities.

In conclusion, there are no significant differences between intervention and comparison schools in terms of compliance with QLE Guiding Principles 1 and 2 (child protection) when considering these principles in very broad terms. Furthermore, several sub-standards did not appear to be an issue in the context of the eight schools, such as “learning environment discrimination free”, “school is accessible”, “safe learning and safe play areas”, “school disaster management plan”. However, differences are more apparent when defining QLE Guiding Principle 1 in terms of the “positive discipline” between students and teachers and QLE Guiding Principle 2 in terms of “health and hygiene” issues.

6. Findings for Research Question 4 (QLE Guiding Principle 3)

Based on the qualitative data, such as key informant interviews, focus group discussions, and observations, a majority of teachers in intervention schools implemented key behavioral elements that define QLE Guiding Principle 3. This includes regular lesson planning, group learning, the use of study games, other teaching material and research activities, and continuous assessment. This is in contrast to teachers in comparison schools where such behaviors were noticeably less in evidence. Intervention school teachers clearly resort to an enriched set of teaching methods.

Quantitative analysis also found some positive correlations between QLE GP 3 and improved learning outcomes. However, this was not true across the board but only in a limited number of cases, such as Grades 3 and 6.

While there were definitely significant behavioral changes among teachers in interventions schools relating to QLE Guiding Principle 3, which occurred less frequently in comparison schools, it could not be established conclusively that there is a causal relationship between these behavioral changes and improved learning outcomes. However, it seems to be intuitively correct to assume that improved teaching practices do support improved learning outcomes. QLE Guiding Principle 3 allows students to enjoy learning, make learning activities less monotonous (thanks to different teaching methods) and because students enjoy learning they concentrate more and perform better.

7. Findings for Research Question 5 (QLE Guiding Principle 4)

The participation of the School Support Committee (SSC), the community and parents in intervention schools is clearly better than in comparison schools. The greater involvement of the community in education appears to put pressure on teachers to teach more diligently (e.g., coming on time, teaching according to the schedule, etc.) than was true of comparison school teachers; that is, they are “monitored” by their own community. This “community-based monitoring” makes teachers and students focus more on learning situations. The implementation of “I’m Learning!” underlines the importance of the school and makes it a public affair in which parents are more interested in the school than usual. This situation compels directors and teachers to put their reputation at risk more than usual. This could explain why students demonstrate better learning outcomes than do comparison school students, and are more spontaneously polite towards adults: they are reminded to be polite. The students care more about their own study as the community involvement makes their study “more important”.

However, while Intervention Schools A and E show the best community-based monitoring, Intervention school A is still challenged by Comparison school A in terms of learning outcomes (for the upper grades), even though Comparison school A has poorer community-based monitoring. This contradicts the hypothesis of a relationship between QLE Guiding Principle 4 and student learning outcomes. In addition, it has to be noted that Intervention School A created a good relationship with the community and was among the best schools of the province before the "I'm Learning!" project (in terms of school leadership and notoriety). It also has to be remembered that since November 2015 (beginning of Year 2), Intervention School A has been teaching its students full time, unlike Intervention Schools B, D and E. But still, it is nevertheless challenged by Comparison School A (for the upper grades) in terms of learning outcomes.

Comparison school B, which has very poor community involvement, performed better than Intervention School B at the end of the project. This finding also poses a problem regarding a supposed potential relationship between the QLE GP 4 and student learning outcomes. In Intervention Schools D and E, however, students perform much better in reading for Type D and all skills for Type E than was true of Comparison Schools D and E, which have a dramatically poor QLE GP 4 rating. Thus, only two schools out of four validated the hypothesis that strong community engagement as defined under QLE GP 4 will have a positive impact on learning outcomes.

Quantitative analyses undertaken in this study did find a positive correlation between QLE GP 4 and student learning outcomes in all subjects for Grade 3, and a positive correlation between QLE GP 4 and student learning outcomes in math in Grade 6 (for all eight schools). Although quantitative data analyses do provide some validation for a link between community support and learning outcomes, this relationship was not robust and was evident mainly for math scores only (and surprisingly not for reading) and then only for certain grades (i.e., Grade 6). Thus, the research team is unable to draw any firm conclusions from these findings and would advise caution in imputing any causal relationships.

In conclusion, the research team sought to highlight a link between what was defined as "community-based monitoring" and learning outcomes. That is, it was believed that the high expectations of students and teachers generated by community-based monitoring could lead to better student learning outcomes. However, it seems that other factors, such as full-time teaching, single shifts, and non-crowded classrooms, are more crucial to influencing learning outcomes than is community involvement.

8. Conclusion: Community-based Monitoring and Better Connection to Educational Praxis

"I'm Learning!" makes a real difference in reading. This finding reflects the tendency observed in the eight school, where teachers are usually more comfortable in teaching reading than writing, and in teaching literacy than numeracy. These findings also reflect a programmatic focus on reading skills at the expense of numeracy. Indeed, in the framework of "I'm Learning!", SCI emphasized literacy (especially reading) more than numeracy: study games for literacy, reading benchmark for lesson frameworks and tests, reading competitions. It appears that Intervention Schools A and B are still challenged by Comparison Schools A and B at the end of the project. This means that it is not possible to demonstrate clear linkages between learning outcomes and implementation of QLE GP 1, 2, 3, and 4. However, three main improvements as a result of implementing the holistic QLE framework of "I'm Learning!" relate to improved student learning outcomes, namely community-based monitoring (QLE GP 4), positive discipline (QLE GP 1) and teaching methods (QLE GP 3).

The research shows that the implementation of "I'm Learning!" underlines the importance of the school and makes it a public affair in which parents are more interested in the school than usual. The greater involvement of the community in education appears to put pressure on teachers to teach more diligently (e.g., coming on time, teaching according to the schedule, etc.) than was true of comparison school teachers; that is, they are "monitored" by their own community. With regards to QLE GP 4, this "community-based monitoring" makes teachers and students focus more on learning situations, which contribute to better student learning outcomes. Furthermore, weekly and monthly tests (considered to be linked with QLE GP 3) seem to be a good way to build an internal monitoring system. As a result, "community-based monitoring" creates new school norms that stand in stark contrast to more hierarchical forms of traditional management used by district and provincial level officials. Eventually, community-based monitoring pushes teachers to focus on learning situations and students to concentrate more on their learning activities.

The enriched set of teaching methods promoted by the "I'm Learning!" framework under QLE GP 3 builds on new norms of higher accountability and motivation. Indeed, by resorting to working groups, study games, teaching materials and Inquiry-Based Learning activities, teachers in intervention schools were found to provide more dynamic and varied daily learning activities. Furthermore, they provide these more dynamic learning experiences within the framework of what is known as "positive discipline" (QLE GP 1). Positive discipline invites students to feel free to communicate with their teacher and be more self-confident. As a result, learning activities appear to be more enjoyable and less monotonous for students. Community-based monitoring, positive discipline, and enriched teaching methods could contribute to enhanced learning outcomes to the extent that it increases the time students give to learning during their four hours of daily instruction. It provides better connection between the students and educational praxis.

For the purposes of this study, QLE Guiding Principle 2 has been more narrowly defined to refer primarily to health and hygiene issues. Research findings suggest that intervention schools have a healthier environment than the comparison schools mainly because they are better organized to clean the environment (student councils) and utilize clean water systems. However, it was not possible to prove empirically that intervention school students are in better health than comparison school students or demonstrate a direct relationship between QLE Guiding Principle 2 and student learning outcomes. Nevertheless, the absence of stomach aches and other acute ailments could ensure that children are not distracted from learning.

It appeared that Types B and D schools struggle more than Types A and E, largely because they have many two-shift teachers and overcrowded classrooms. Researchers suggest that high Pupil Teacher Ratios and an exhausting schedule for teachers who need to teach two four-hour shifts mean that implementation of the various interventions described above have not been optimal due to these extraneous factors. Thus, researchers would recommend the need to ensure some pre-conditions (e.g., PTRs of less than 30 and single shift teaching) in order to achieve optimal results from the implementation of the QLE framework.

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