

Active Learning and Girls Participation in Multigrade Schools: The Philippines Case¹

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This study examined the Philippines Multigrade Demonstration Schools Project supported by UNICEF. The study focused on the elements and processes of this innovative program as they relate to the success of girls in rural primary schools. It was part of a multi-country study on active learning programs in multigrade settings and the relationship of such programs to girls' performance in school.

Active learning is an approach that allows students to take responsibility for their own learning. It may use a variety of methods to create different contexts in which students interact with subject matter. The common goal is the provision of opportunities for learners to integrate new information, concepts or skills into their own mental schema through rephrasing, rehearsing and practice. Activities can include collaborative group work, investigation with materials inside or outside the classroom, and peer teaching, as well as self-guided instruction, lecture and individual seatwork. Most important, to be actively involved, students must engage in such higher-order thinking tasks as analysis, synthesis and evaluation. (Chickering and Gamson, 1987; Bonwell and Eison, 1991).

Active learning has its roots in constructivist approaches to learning. Educational reform in the United States and elsewhere has begun to emphasize the active and meaningful participation of all students. The challenges of academic excellence and educational equity, currently summarized as "No one left behind," have led to a search for the integration of subject matter proficiency and universal participation in the learning environment. In recent years, constructivist or socio-constructivist approaches to learning and human development

(Cobern, 1993; Watts and Bentley, 1987) have guided much of the educational reform to achieve this convergence. The socio-constructivist approach focuses on the ways learners actually generate understanding (Resnick, 1987 and 1989; Newman, et al. 1989). This approach to human development emphasizes three interrelated aspects of learning: a) learning is a process of knowledge *construction*; b) learning is *knowledge-dependent*; and c) learning is intimately connected to the *situation* in which it takes place (Resnick, 1989). Resnick asserts that individuals learn by actively interpreting information as opposed to simply recording it. That learning is knowledge-dependent suggests that it "depends on elaboration and extension of prior knowledge" (Ibid., 1989:2). The third aspect – that learning is tied to the situation – addresses the rediscovery that individuals better retain knowledge when it is embedded in some organizing structure.

In multigrade programs, such concepts have often been translated into a "package" of activities that encourage collaboration among and between students, teachers, and parents. This package, which was originally developed for the New School (*Escuela Nueva*) program in Colombia, involves: a series of in-service training workshops for teachers at which they

reflect on their own experience as students and teachers, develop the materials to be used by students, and form “teacher circles” that meet regularly to help one another with issues in implementing the program; parent involvement activities such as participation in classroom activities as resources for local customs and agricultural pursuits, and as members of the school governing boards; and a series of active learning strategies such as the use of self-instructional guides, learning corners, small group work and peer teaching, as well as flexible promotion and participation in elected school government. Active learning multigrade programs stress the role of the teacher as a facilitator who encourages children to be active, creative, participative and responsible through collaboration in small groups and individual use of a variety of learning contexts. Such learning experiences are seen to lead to both the construction of knowledge through social interaction and democratic attitudes and behaviors such as comradeship, cooperation, solidarity and participation (Arboleda, et al. 1991).

Methodology

The study applied rapid ethnographic appraisal methods for school and classroom research to collect data in a sample of 9 multigrade schools (six with the innovative learning programs and three that either were not part of the program or no longer had multiple grades in a single classroom). The study used the qualitative methods of maps, inventories, structured observations, and in-depth interviews with school directors, teachers, students, and principals to conduct cases studies of a sample of multigrade schools with active learning programs, as well as programs using traditional teaching methods. Available program level data were also collected and compared to case study findings. A team of anthropologists with extensive experience in education research in rural settings carried out the study during September/October 2002.

Context

The Philippines is a country of 70 million people distributed over more than 7,000 islands. Although the country is divided into 79 autonomous provinces with 1500 municipalities and 41,000 villages (*barangays*), all with elected officials, public services such as education remain highly centralized. Thus, there are disparities in education service delivery, with the more isolated rural areas least likely to have public schooling. These are also the areas where poverty is highest. The government of the Philippines is aware that the existence of large concentrations of poverty and low level of education is not only inequitable, but also poses a threat to social stability, investor sentiment, and economic competitiveness. Poverty reduction has been one of the country’s highest priorities for over ten years. Despite government efforts, more than a fourth of the population remains in poverty.

Throughout the 1990s, the government has emphasized increasing coverage of primary education. According to the World Bank, participation in primary school increased from 92.7% in the 1995/1996 school year, to 97% in the 1999/2000 school year. As the government emphasized increasing coverage, the quality of education was not necessarily addressed with the same resources and attention. As coverage increased, completion rates decreased. At the primary school level, completion rates went from 72.1% in the 1996/1997 school year to 69.3% in the 1999/2000 school year [World Bank Report, September 2002]. Although worsening economic conditions and social unrest in parts of the country contributed to lower completion rates, the lack of complete primary schooling in a region also denies children the possibility of completing primary school. *Barangays* without a public elementary school have been reduced from 4,234 in 1996/1997 to 1,612 in 2001/2002 (DECS, 2002b). However, the number of primary schools that do not offer all grades re-

mains high. As can be seen in Table 1, incomplete schools make up 29% of all schools in the Philippines. The highest percentages of incomplete schools are in Region VI, where this study took place, Region VIII, and The Autonomous Region of Muslim Mindanao. As many of the incomplete schools are multigrade schools in isolated rural areas, improvements in multigrade schooling is seen as a strategy to allow children to receive a complete primary education.

Background

Although schools with one teacher handling more than one grade have been common in the Philippines since at least the 1920s, the formal Multigrade Program in Philippine Education (MPPE) was launched in 1993. MPPE has the objective of improving access to primary education by providing complete grade levels in all public elementary schools through the organization of multigrade classes. It also

aims to improve quality by increasing teachers' abilities to work with more than one grade simultaneously through training and instructional materials. It legitimized multigrade teaching as a national strategy to improve access to and quality of school in all areas of the country (Miguel and Barsage, 1997). It works in five areas: curriculum and materials development; staff development; physical facilities; community support; and research, monitoring and evaluation. It has developed a guide minimum learning competencies for multigrade classes, a budget of work and lesson plan for multigrade teachers to follow, a handbook for teachers and example lessons, as well as materials to be used at different grade levels within the same classroom and other instructional materials such as a 100-book library, drill cards and other teacher-made materials. Some effort has also gone into preschool training in the form of a handbook for preschool teachers and a workbook for preschool pupils.

TABLE 1. Percentage of Multigrade and Incomplete Schools by Region

<i>GOVERNMENT ELEMENTARY SCHOOLS - School Year 1998-1999</i>						
<i>REGION</i>	<i>All Schools</i>			<i>Multigrade Schools</i>		
	<i>Total</i>	<i>Incomplete</i>	<i>% Incomplete</i>	<i>Total</i>	<i>% of Total</i>	<i>% Incomplete</i>
I	2,267	302	13%	621	27%	35%
II	1,985	591	30%	879	44%	45%
III	2,585	485	19%	449	17%	63%
IV	4,242	614	14%	1,401	33%	36%
V	2,934	432	15%	1,060	36%	43%
VI	3,247	1,678	52%	630	19%	77%
VII	2,790	817	29%	1,159	42%	58%
VIII	3,448	1,648	48%	1,871	54%	67%
IX	2,193	527	24%	673	31%	49%
X	1,556	311	20%	636	41%	28%
XI	2,410	543	23%	707	29%	45%
XII	1,073	392	37%	290	27%	67%
XIII (Caraga)	1,501	444	30%	805	54%	64%
NCR	474	4	1%	–	0%	
CAR	1,278	530	41%	596	47%	61%
ARMM	1,574	971	62%	586	37%	68%
TOTAL	35,557	10,289	29%	12,363	35%	53%

Source: DECS Statistical Bulletin School Year 1998-1999, Research and Statistics Division, Office of Planning Service, June 1999

Many of the curriculum innovations for multigrade schools were developed as part of the Multigrade Demonstration Schools Project (1995-2000) carried out in partnership with UNICEF. The purpose of this project was to show that multigrade teaching can be a viable alternative to single grade classes in areas where the uneven distribution of the pupil population make the establishment of regular monograde schools with a teacher for each of the six primary grades costly and inefficient. The project established demonstration schools in rural areas that historically received little support in terms of educational delivery. Over the course of the project, 24 demonstration schools were established that provided models of effective teaching-learning strategies, school and classroom management processes and community participation in education. The project provided observation tours to Colombia for teachers and administrators to see the *Escuela Nueva* multigrade program in that country and trained teachers through three workshops. The first of these workshops took place over a two-week period in Manila. This workshop was followed by regional and local workshops for each of the participating teachers and local administrators. Schools were provided with supplementary instructional materials for pupils and teachers in the form of handbooks, a small library, and self-instructional guides, and minimum facilities such as a water supply and toilet. Many schools received furniture such as desks that could be easily moved for different activities in the classroom. The demonstration schools served as resource centers for other schools in their areas and the project generated more than 150 expansion schools by 1998.

The Multigrade Demonstration School Project was carried out under UNICEF's fourth Country Programme for Children (CPC IV). Under the fifth CPC (1999-2004), UNICEF continues to support multigrade schools within the framework of the Department of Education, Culture and Sports

(DECS)² Child-Friendly School System efforts. This program focuses on better learning opportunities for children through the involvement of families and communities in promoting inclusive gender sensitive learning environments and effective methods. Multigrade schools are also included in the UNICEF Infotech project that provides computers to schools.

Other projects undertaken by the MPPE include the Pupil Learning Enhancement Program (PLEP), the Little Red Schoolhouse Project, the Multigrade Teacher Achiever and the Best Practices by Teachers in Multigrade Schools project. PLEP, which had assistance from the United Nations Development Program (UNDP), ran from 1996-2000. It focused on the development and printing of teaching and learning materials, the training of multigrade teachers and school administrators, and creating partnerships of government, non-government and community based organizations to support improved school quality. The program also had the assistance from Japan for the repair and construction of school facilities in pilot sites and Metrobank for the provision of a 100-book library.

The Little Red Schoolhouse Project, which has assistance from the Coca-Cola Foundation Philippines, is providing adequately equipped three-room school buildings in 50 priority multigrade schools in the country. The project includes construction of school buildings, one toilet facility in each room and a water system, the provision of classroom furniture such as tables and chairs, training of multigrade teachers on innovative techniques, and a workshop on community involvement. The program builds on the materials and approaches developed in the Multigrade Demonstration Project.

The Search for the Multigrade Teacher Achiever is an annual effort of the MPPE that began in 2000. It is an award to the most outstanding Filipino teacher assigned to a multigrade school. It recognizes performance and

dedication of a multigrade teacher working in a disadvantaged school. The Best Multigrade Teaching Practices will be a training video that can be used in workshops and as a self-learning tape by teachers attempting to improve their teaching. It will showcase the strategies used by the Multigrade Teacher Achievers.

Results

This section examines the aggregate results for the sample Demonstration and comparison schools. The common characteristics of the schools in terms of classroom environment, instructional materials and strategies employed and student participation are described. Subsequently, these characteristics are related to the trends in enrollment, completion, and academic performance in the sample schools and the trends found in these schools are compared to overall trends in UNICEF supported schools and non-UNICEF supported schools in the same geographical regions. Available data on sustainability of trends are also presented.

A. Participation

1. Classroom Organization

Fourteen classes in six schools that had been part of the Multigrade Demonstration School Project were observed intensively. In all of those classes, children were organized by grade in rows of desks or desks pushed together as a table. Children were all facing the front of the classroom. In 12 of the 14 classrooms, the teachers allowed students to sit where they desired within the seats assigned to their grade. In one of the remaining classrooms the teacher assigned children to seats in alphabetical order. In the other classroom, the low performing children were seated in the front of the class to allow them more contact with the teacher. In classrooms where children were

allowed to choose their seats children of the same gender were observed to sit together. Although teacher spoke of the advantage for children of having older children in the same class to help those in the lower grade, little formal cross-grade interaction among students, except to ask siblings for pencils or other materials, was observed. Large group activities that combined both grades were observed in all classrooms. However, these activities involved interacting with the teacher rather than with children from the other grade.

All of the Demonstration classrooms had a number of learning corners. There were learning corners for science, mathematics, English and Filipino languages, as well as integrated studies and culture. Learning corners were equipped with subject matter texts, instructional games and locally-made instructional materials. The classrooms were also supplied with a mini-library. Charts on the Philippine school system, nutritional information and class officers were also posted on the walls of the classrooms. Pictures of the Philippine president and, in some classes, religious photos, adorned the front of the classrooms. Display of student work was an important aspect of each classroom.

While all of the grades had textbooks and the self-instructional workbooks developed by UNICEF, these were seldom observed in use. Within the classrooms teachers made use of sheets of paper from flip charts, flash cards, and games. The flip chart pages generally contained exercises or tests to be completed during seatwork, when the teacher was working with the other grade. Flash cards, often placed in paper representations of animals, were used to provide directions for children working in small groups or at their seats. Games were used both for mathematics practice such as counting or multiplication and oral practice such as word identification. The blackboard was used for children to record findings from exercises.

Three of the multigrade classrooms that were used for comparison had a classroom structure

similar to that of the Demonstration schools. This was a result of one of the schools being part of the Little Red Schoolhouse program and the other being a multigrade Demonstration school that had become a monograde school with the exception of one grade. A teacher who had not been formally trained in multigrade methodology taught this class. These classrooms had a number of learning corners similar to those found in Demonstration schools. They also had lightweight desks that could be used in a modular format. Teachers used flash cards, flip charts, and the blackboard as the principal instructional tools. The third comparison school was an incomplete school in Negros Oriental. This school had wooden desks and learning corners consisted of a few posters. Flash cards and the blackboard were the main instructional aides.

Teachers in the Demonstration schools were very positive about the multigrade approach. Twelve of the fourteen teachers interviewed felt that children could be as successful as in monograde class, if the teacher understood the methodology. They pointed out that it gave younger students an opportunity to work with older ones and to build confidence by working alone or in small groups. The two teachers who pointed out disadvantages said that they felt the students would gain by having a teacher who could focus on one class with undivided attention.

The two teachers in the Little Red Schoolhouse program also felt that there was no difference in the education that could be provided for children in multigrade or monograde classes. However, the three teachers in the other two comparison schools all felt that a monograde situation was better for children.

2. Interaction in the Classroom

In Demonstration schools, a relatively high percentage of teacher-student interaction during lessons took place in large group contexts. Table 1 shows the average percentage of interactions between the teacher and students in the contexts of: teacher-directed small group contexts, where the teacher facilitates a small group activity; student-directed small group contexts, where students work collaboratively on an assignment; large group contexts involving all of the students in the class; and seat work, where children worked individually at their desks on assignments. Seventy-five percent of all interactions in the Demonstration schools were in large group contexts. When compared to the schools not in the program, the Demonstration schools also had a relatively high percentage of seatwork. This was a result of teachers making assignments to be done individually by the children of one grade while they worked in a large group context with children of the other grade. Small group work was relatively infrequent, as only 8% of the interactions occurred in this context. This percentage is, however, more than twice as high as the small group work observed in the non-Demonstration school.

Small group interaction between students and teachers in the three comparison schools was limited to one school. This school was implementing the Little Red Schoolhouse program and had used the Demonstration program as a model. The predominant context in comparison schools was that of large group where the teacher addressed all of the children in the class or a particular grade.

TABLE 2. Percentage of Observed Student-Teacher Interactions by Context

<i>Context</i>	<i>Teacher directed small group</i>	<i>Student directed small group</i>	<i>Large group</i>	<i>Seat work</i>
Percent – Escuela Modelo	6	2	75	17
Percent – comparison schools	2	1	92	5

3. Structure of the Interactions

In eight of the 14 Demonstration classrooms where intensive observations were made, girls initiated a higher ratio of interactions than boys. This was true even when observations were adjusted for the number of children of each gender present in the classroom. However, the average frequency of student initiated interactions was similar for boys and girls. This compares to no interactions with the teacher being initiated by girls in the comparison schools. Girls received a higher percentage of the interactions initiated by the teacher than did boys. In 12 of the 14 classrooms girls received a higher percentage of the interactions. They were the recipients of an average of 27% of the teacher-initiated interaction compared to 23% for boys. Across all of the classrooms the differences remained when the percentages were corrected for the number of girls and boys in the classroom.

In the comparison schools, girls did not initiate any interactions with the teacher. Boys initiated fewer interactions on the average than in the Demonstration schools. Girls, on the other hand, received a higher frequency of teacher-initiated interactions than did boys. Girls received 34% of the interactions compared to 27% for boys. However, because of the greater number of girls in the classrooms, these differences disappeared, on the average, when

the data were corrected for the proportion of children of each sex in the classroom.

4. Quality of Interactions

Oral response was observed to be a key element of the multigrade learning program in the Philippines. Teachers in the Demonstration schools emphasized responding in front of classmates. Students generally responded to requests for information or to direct questions about the subject matter. As shown in Table 4, either commands requesting information or questions occurred in almost 50% of the interactions. Dictation, consisting of rote recitation or repetition, was relatively infrequent in the classrooms, occurring in 21% of interactions. Teachers provided explanation or expansion of the students' responses in about 25% of the cases.

The nature of the interactions was similar in the comparison school classrooms. This is not surprising as two of the three schools had implemented or were implementing programs similar to that of the demonstration schools. There was, however, somewhat greater emphasis on dictation and less explanation than in the Demonstration schools.

Display of student work was another strategy to build confidence. With one exception, all of the school classrooms had student work displayed. In several classes, students showed the observers their displayed work.

TABLE 3. Percentage of Interactions Initiated by Teachers and Students

<i>Initiator</i>	<i>Teacher</i>	<i>Male Student</i>	<i>Female Student</i>
Percent – Demo schools	94	3	3
Percent – comparison schools	98	2	0

TABLE 4. Percentage of Different Speech Acts in Interactions Initiated by Teachers and Students

<i>Type</i>	<i>Question</i>	<i>Explain</i>	<i>Order</i>	<i>Dictate</i>	<i>Feedback</i>
Percent – Demo Schools	46	25	47	13	8
Percent – comparison schools	50	17	45	21	9

In all schools, student leaders, who were appointed by the teacher based on their mastery of particular subject matter, or elected by their classmates, assisted the teacher. The leaders were of two types: “little teachers” and small group leaders. Little teachers generally fulfilled the role of the teacher in leading large group activities when the teacher worked with the students of the other grade in the classroom. The little teacher called on students to recite or to display their results on the blackboards in the front of the class. In small groups, the “leader” generally directed the group activity and at times reported on its results. Most of the teachers used the strategy of giving each member of a small group a role. These roles in different schools included: leader, assistant leader, material collector, recorder, reporter and timekeeper. Teachers emphasized the importance of this participation, as well as verbal response in front of the class as important to building student confidence. They felt that girls were more willing and better prepared to take leadership roles. Observations of small group activities showed that this type of collaborative work promoted participatory behaviors. Students helped one another, took turns and provided feedback to one another. Girls in the Demonstration program stated that being a little teacher taught them to help their classmates.

5. Student Government

Observations in the sample schools showed that building leadership is an important aspect of Philippine education. All of the classrooms had posters showing local and national leaders and many had slogans about being a good leader and a good follower. In addition to the leadership roles played by students as leaders in lessons, leadership skills were fostered through participation in student government. In most schools, this took the form of class or grade officers. Eight to fourteen officers were elected in each grade or class. In most classes, girls predominated among the class officers.

Girls who served as class officers said that their main responsibilities were to be a role model for other children and to help correct those children who misbehaved. Teachers generally selected candidates. They were selected on the basis of their academic performance or behavior. The students in the class voted for class officers from among these candidates.

Only two of the schools had school-level student governments. They were limited to sixth grade students. Again girls predominated among the officers. These students had organized projects, such as school gardens and planting of trees on school grounds. Participation in school government involved students in formalizing ideas about what they could contribute to their school and expressing those ideas in public. The student officers in these schools also spoke of the importance of their position in serving as a role model for other students.

6. Parent Participation

Parents were highly positive toward the Multi-grade Demonstration program. They pointed out that it allowed their children to complete primary school without leaving the community. They mentioned the new materials and in some cases buildings that enhanced the students’ learning. All of the parents praised the dedication of the teachers and made comments such as “Children like to come to school because they are active,” and “Before, it was all dictation and copying, with maybe one book. The teacher did the talking and we just listened.” Girls were seen by all parents as “more active” and “interested in learning” than boys. Student government was consistently mentioned as making the children less shy and more active. Girls were identified as the leaders of student government. In only one of the six sample schools did parents state that monograde classes would be better than multigrade.

Parent committees existed in all schools. Their view of their school varied somewhat by

the functions the parents served. Where parents were involved mainly in school maintenance, they felt that they helped the school only in response to requests from the teachers. It was the teachers who understood the needs of the school and could direct parents on how to be helpful. In the three schools where the parents were involved in the teaching and learning activities of the classroom, either through serving as aides or making materials, there was a different view of parent responsibilities. Parents and teachers stated that they were partners in teaching the children.

The groups of parents interviewed in comparison schools felt that their children would learn better in monograde classes. These parents carried out school maintenance and beautification functions that were common in all schools. They did not serve as teacher aides and did not articulate any programmatic elements that contributed to their children's success in school.

In all schools, parents felt that girls were more interested in learning than boys. They had similar aspirations for boys and girls, hoping that all of their children would complete college. However, when asked about jobs for college graduates, all parents felt that the limited opportunities in the rural areas where they lived would require educated children to find work in large cities or in other countries.

B. Student Performance

Student performance was examined in terms of enrollment, completion, academic and non-academic performance. Available information on sustainability of program results is also discussed. Two sets of results are presented. One set of results compares all schools in the Multigrade Demonstration program for which data are available to expansion multigrade schools created through the program, as well as other multigrade schools. The second set of results compares the sample schools to the comparison schools that were visited during the study.

1. Enrollment

Access is not considered a problem in the Philippines, except in isolated locations where no elementary schools exist. This is especially true for girls, who usually have higher gross enrollment ratios than boys. However, enrollment data were examined to identify trends in areas served by rural multigrade schools. Department of Education data on enrollment in the three provinces visited: Antique, Guimaras, and Negros Oriental were used to examine trends in Demonstration schools, other schools with UNICEF support and other multigrade schools. Tables 5a, 5b, and 5c show that average enrollment for all Demonstration schools increased for both boys and girls. However, there was a decline in enrollment in the last year for which national data were available. Boys had consistently higher enrollment than girls and suffered less of a decline in the 2000/2001 than girls. Pilot schools had a more consistent decline in enrollment. This decline began in the 1997/1998 school year and continued in each year for which data were available. Non-UNICEF-supported multigrade schools had a pattern similar to Demonstration schools. Average enrollment rose for three years, but declined in 1999/2000. The decline was severe enough to create an overall average decrease in enrollment for the four-year period.

Table 6 shows the enrollment trends for the sample schools that were visited during the research. These data, which were extracted from school enrollment records, show a somewhat different trend. As can be seen, the enrollment of boys was higher than that of girls in Demonstration project schools over the entire six years for which data were available. Both boys and girls showed increases in enrollment in every year. However, girls had higher overall enrollment increases in four out of five years.

The three multigrade schools in the comparison sample had an enrollment pattern similar to the Demonstration schools from 1995/1996 through 1998/1999. The enrollment of

Years	<i>Demonstration Schools</i>					
	<i>Boys</i>			<i>Girls</i>		
	<i>Mean</i>	<i>Annual %</i>	<i>Total %</i>	<i>Mean</i>	<i>Annual %</i>	<i>Total %</i>
96/97	49.3			47.7		
97/98	57.7	16.9%	16.9%	51.3	7.7%	7.7%
98/99	61.0	5.8%	23.6%	57.4	11.8%	20.4%
99/00	60.4	-0.9%	22.5%	48.3	-15.9%	1.3%

Years	<i>UNICEF Pilot Schools</i>					
	<i>Boys</i>			<i>Girls</i>		
	<i>Mean</i>	<i>Annual %</i>	<i>Total %</i>	<i>Mean</i>	<i>Annual %</i>	<i>Total %</i>
96/97	167.6			164.4		
97/98	165.9	-1.0%	-1.0%	166.4	1.2%	1.2%
98/99	149.1	-10.1%	-11.0%	154.4	-7.2%	-6.1%
99/00	142.7	-4.3%	-14.9%	140.9	-8.8%	-14.3%

Years	<i>Other Multigrade Schools</i>					
	<i>Boys</i>			<i>Girls</i>		
	<i>Mean</i>	<i>Annual %</i>	<i>Total %</i>	<i>Mean</i>	<i>Annual %</i>	<i>Total %</i>
96/97	52.1			50.7		
97/98	56.1	7.7%	7.7%	56.2	10.9%	10.9%
98/99	59.1	5.3%	13.3%	61.2	8.9%	20.8%
99/00	53.4	-9.6%	2.5%	50.3	-17.8%	-0.8%

Years	<i>Demonstration Schools</i>				<i>Comparison Schools</i>			
	<i>Male Enrollments</i>		<i>Female Enrollments</i>		<i>Male Enrollments</i>		<i>Female Enrollments</i>	
	<i>Total</i>	<i>% Increase</i>	<i>Total</i>	<i>% Increase</i>	<i>Total</i>	<i>% Increase</i>	<i>Total</i>	<i>% Increase</i>
95/96	147	100.0%	123	100.0%	113		116	
96/97	159	8.0%	159	29.0%	119	5.3%	133	14.6%
97/98	181	13.8%	164	3.1%	na		na	
98/99	198	9.4%	194	18.2%	156	31.1%	168	26.3%
Total		34.6%		57.7%		38.0%		44.8%
99/00	231*		221		147	-5.8%	174	3.5%
00/01	244*	5.6%	238	7.6%	121	-17.7%	123	-29.3%

Source: Central School Records

*Data available for five schools rather than three schools

both boys and girls increase but the percentage increase for girls was greater. In this case, girls enrolled in slightly higher numbers than boys. The percentage increase in this period was 3.4% higher for boys in the comparison schools than in the Demonstration schools. On the other hand, the percentage increase in the enrollment of girls in Demonstration schools was 12.9% higher than that of girls in the comparison multigrade schools. In the last two years for which data were available, there was a drop in enrollment in comparison schools, similar to the trends found in the national data. In Demonstration schools, the yearly increase in enrollment for both boys and girls continued in the same two years.

2. Completion

Completion was examined in two ways. Apparent cohort methodology was used with the 1998/1999 and 1999/2000 data for Antique, Guimaras, and Negros Oriental to esti-

mate the percentage of the 1998/1999 cohort that would make normal progress to sixth grade. Table 7 presents the results of this analysis by school type and gender. As can be seen, the Demonstration schools had a higher percentage of girls reaching sixth grade than either the UNICEF pilot schools or other multigrade schools. This rate of 71.3 was slightly lower than that for monograde schools at 72.2. Higher completion might be expected in these schools as they include urban schools, which traditionally have higher completion rates. The UNICEF pilot schools also had higher completion rates for girls than other multigrade schools. Rates for boys, however, were lower in both Demonstration and pilot schools than in other multigrade and all remaining schools.

The school level data on completion show a similar trend to that estimated from national data. Tables 7 and 8 show the percentage of individual students in a cohort who could be traced through school records. As can be seen in Table 7, sixth grade completion was some-

Grade	Demonstration		Pilot		Other Multigrade		Other	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
1	100	100	100	100	100	100	100	100
2	82.7	83.6	81.9	97.3	75.8	82.1	81.8	88.1
3	67.7	76.0	68.6	95.4	64.2	71.2	70.2	85.6
4	69.0	67.2	54.0	94.2	52.1	63.4	61.5	80.2
5	56.8	69.6	63.2	76.0	63.9	60.9	60.8	75.6
6	50.4	71.3	49.9	69.1	56.7	60.3	54.1	72.2

	Sample Demonstration Schools					
	92/93-97/98	93/94-98/99	94/95-99/00	95/96-00/01	96/97-01/02	98/99-02/03*
Girls	64%	57%	30%	33%	49%	52%
Boys	33%	36%	20%	04%	31%	33%
Total	48%	43%	24%	21%	40%	42%

Source: Central School Records

*Based on enrollment in sixth grade

what lower in Demonstration schools than the rates estimated from national data for this study or than national survival rates. There was a decrease for both boys and girls in 1994/1995 and 1995/1996 cohorts probably reflecting the onset of economic downturn in the Philippines during this period. Girls consistently had higher completion rates than boys. In the two-school comparison sample (Table 9), data were available for only two cohorts. Girls showed an increase in completion for those years as do girls in the Demonstration schools. The percentage increase was, however, slightly lower. For boys, higher completion rates were found in the comparison schools in the two years for which data were available. These rates

were higher than those for boys in any cohort in the Demonstration schools.

3. Academic Performance

Test data for available years were examined for trends in student academic performance in the Multigrade Demonstration schools. Scores are presented in terms of the aggregate average scores on the different subjects covered by the National Elementary Aptitude Test (NEAT). As can be seen in Table 10, the Demonstration schools had higher mean scores than the other groups in 1999. However, results were similar for all groups of schools in that year. In 2000, the Demonstration schools made

**TABLE 9. Comparison Sample
Sixth Completion Rates by Year and Gender**

<i>Sample Comparison Schools</i>						
	<i>92/93-97/98</i>	<i>93/94-98/99</i>	<i>94/95-99/00</i>	<i>95/96-00/01</i>	<i>96/97-01/02</i>	<i>97/98-02/03</i>
Girls	nd	nd	nd	33%	43%	nd
Boys	nd	nd	nd	47%	41%	nd
Total	nd	nd	nd	41%	42%	nd

TABLE 10. Student Academic Performance by School Type and Year

<i>TYPE</i>		<i>MEAN99</i>	<i>MEAN00</i>
demonstration schools	Mean	38.98	48.03
	N	7	7
	Std. Deviation	6.77	8.40
comparison schools	Mean	38.55	39.62
	N	1	2
	Std. Deviation	.	3.09
UNICEF pilot schools	Mean	38.75	41.86
	N	10	10
	Std. Deviation	5.56	6.88
Others	Mean	38.18	45.70
	N	827	845
	Std. Deviation	8.01	11.79
Total	Mean	38.19	45.67
	N	845	864
	Std. Deviation	7.97	11.71

gains that were higher than those made by all other schools in the three provinces. The UNICEF pilot schools also made gains when compared to the multigrade schools that formed the comparison sample for the study. However, these gains were less than those for the population of schools as a whole. It was not possible to disaggregate scores by gender.

4. Sustainability/Cost Effectiveness

The institutionalization of multigrade schooling through the establishment of a division of multigrade education with the Department of Education speaks to the importance of this strategy in the Philippines. A recent study (University of Philippines, 2002) looked at cost-effectiveness in relation to student achievement in five subjects and to students' attitude toward schooling. It used average teacher salary, Building Furniture and Equipment, instructional materials, and maintenance operating expenses to calculate an average cost per student for Multigrade Funded, Multigrade Regular, and Monograde programs. The study found that Multigrade Funded programs, including those supported by UNICEF were more cost effective than the other types of programs on average and by grade MF = P 5,901.44; MReg = P 8,820.90; Mono = P 6,360.03. The study recommended extension of UNICEF and UNDP assistance. These findings as well as those noted in this study of the spread of expansion of the Demonstration school approach to other schools and the generally positive view of the program by the teachers and parents participating in the program support the viability of the program for meeting the needs of isolated rural areas.

Discussion

The Demonstration multigrade program has been effective in changing the classroom environment in multigrade schools. There are a variety of materials for the children to use as

well as modular furniture that allows for flexible classroom organization. There has been a broadening of the learning situations for the presentation of subject matter (small groups and large groups, seatwork) when compared to classrooms where teachers did not participate in the UNICEF program. Small group activities and seatwork have allowed girls to work together and an emphasis on verbal recitation has helped build confidence in both boys and girls. Teachers also encourage children's participation by presentation of subject matter using examples from the local environment. Leadership opportunities in the form of taking the teacher's place to lead lessons and participation in student government further build students' confidence. These leadership opportunities are pursued actively by girls.

Despite the changes brought about by school and classroom organization, teacher-directed work in lessons is predominant in most classrooms. The designers of the program expected behavioral changes to take longer than physical ones. Movement to a child-center approach to learning was listed as an ongoing objective in project documents (DECS/UNICEF, 1998).

The changes in school structure are viewed in a highly positive manner by parents and teachers. They appear committed to the multigrade school both for the teaching strategies employed and for the provision of complete primary schooling to their children. Parents who have actually participated in the teaching-learning dynamics have an especially positive view of the school and their partnership with the teachers to improve their children's education. The Demonstration program appears to have had an effect on student performance. Enrollments show a net increase, even as overall primary school enrollments appear to have declined in the region under study. Academic achievement was also higher in Demonstration schools than other schools in the region in general, and a study commissioned by the Department of Education suggested

that the program is cost-effective when compared to other multigrade and monograde schools. However, the positive effects of the program on boys is open to question, given that our study found their participation to differ little from that of boys in non-program schools and the internal efficiency of the program for boys is low.

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Endnotes

1. This study was funded in part under USAID contract #LAG-C-00-99-00042-00 awarded to Juárez and Associates, Inc. The conclusions are obviously the authors' own and do not reflect the position of USAID nor the United States government.

2. Since 2001, this name has been changed to Department of Education (DepEd).