

CONSTRAINTS TO IMPLEMENTING EDUCATIONAL INNOVATIONS: THE CASE OF MULTIGRADE SCHOOLS

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Abstract – Studies suggest that multigrade schools, i.e. those with classes that are mixed in age and ability, can be a cost-effective means of raising student achievement and expanding access to education in poor countries. Development institutions often recommend them for countries struggling to raise educational quality and coverage in rural areas. However, the literature advocating the adoption of multigrade schools avoids discussing the potential difficulties in implementing the system. This paper analyses the conditions under which implementation might be successful, focusing on the oft-cited case of the Colombian *Escuela Nueva* programme. The authors conclude that capacity-building through in-service training is an important determinant of the way teachers approach their task. However, a great deal of variance in teacher practices is left unexplained. The article suggests that teacher will (that is, motivation and commitment) might explain much of the remaining variation in the adoption of the new pedagogies. The authors explore several conditions under which teacher will could be lacking.

Zusammenfassung – Es gibt Studien, die den Schluß nahelegen, daß Schulen für ärmere Länder, deren Klassen sich aus Schülern verschiedenen Alters mit unterschiedlichen Fähigkeiten zusammensetzen, ein kostengünstiges Mittel sein können, sowohl die Lernergebnisse der Schüler als auch den Zugang zu Bildung zu steigern. Einrichtungen der Entwicklungspolitik empfehlen sie oft für Länder, die sich um höhere Bildungsqualität und bessere Bildungsversorgung in ländlichen Regionen bemühen. Die Literatur, die die Einführung gemischtklassiger Schulen befürwortet, berücksichtigt jedoch nicht die potentiellen Umsetzungsschwierigkeiten. Der Aufsatz untersucht die Bedingungen, unter denen eine erfolgreiche Umsetzung möglich ist, wobei er sich auf die oft zitierte kolumbianische *Escuela Nueva* beruft. Die Autoren kommen zu dem Schluß, daß durch berufsbegleitende Fortbildung entscheidend bestimmt wird, wie Lehrer an ihre Aufgaben herangehen. Jedoch werden dabei viele Unterschiede zwischen Lehrmethoden nicht erklärt. Laut diesem Artikel könnten Motivation und Engagement der Lehrer eine Erklärung für die noch bestehenden Variationen bei der Einführung der neuen Lehrmethoden darstellen. Die Autoren untersuchen verschiedene Bedingungen, die zu einem Mangel an Motivation und Engagement führen könnten.

Résumé – Diverses études suggèrent que les classes à plusieurs niveaux, comme celles qui réunissent plusieurs groupes d'âge et plusieurs capacités, pourraient être un moyen à faible coût d'améliorer dans les pays défavorisés les résultats scolaires en même temps que l'accès à l'éducation. Les organismes de développement les recommandent souvent aux pays qui s'efforcent d'améliorer la qualité de leur éducation et d'atteindre les régions rurales. Cependant, la documentation qui préconise la création d'écoles à classes multi-niveaux omet d'aborder les difficultés potentielles lors de la mise en place du système. Cet article étudie les conditions qui permettent de préparer la réussite de ce projet, en se concentrant sur le cas si souvent cité du programme colombien 'Escuela Nueva'. Les auteurs concluent que la formation de capacités au



moyen de la formation en cours d'emploi détermine sensiblement la façon dont les enseignants considèrent leur tâche. Un grand nombre de différences dans la pratique enseignante demeure cependant inexplicé. Les auteurs avancent que la volonté de l'enseignant (c'est-à-dire sa motivation et son engagement) pourrait en grande partie expliquer les divergences dans l'adoption des nouvelles pédagogies. Ils présentent plusieurs situations dans lesquelles la volonté de l'enseignant est éventuellement insuffisante.

Resumen – Diversos estudios sugieren que las escuelas multigrado, es decir aquellas con clases mixtas en cuanto a edades y capacidades, pueden ser un modo eficaz – en cuanto a los costos – de mejorar los éxitos de los estudiantes y de ampliar el acceso a la educación en países de escasos recursos. Los institutos de desarrollo frecuentemente las recomiendan a los países que se esfuerzan en mejorar la calidad de la educación y la cobertura en áreas rurales. Sin embargo, la literatura que aboga por la adopción de escuelas multigrado no discute las dificultades potenciales que existen para implementar el sistema. Este trabajo analiza las condiciones bajo las que la implementación podría tener éxito, enfocada en el caso frecuentemente citado del programa colombiano de la Escuela Nueva. Los autores concluyen que la formación de capacidades mediante un entrenamiento que tenga lugar durante el servicio mismo es un factor importante en cuanto al enfoque que los docentes harán de su labor. No obstante, sigue siendo un interrogante el alto grado de divergencias que existen en las prácticas docentes. El artículo sugiere que la voluntad (es decir, la motivación y el compromiso) podría explicar buena parte de las diferencias remanentes en cuanto a la adopción de las nuevas pedagogías. Los autores exploran diversas condiciones bajo las que podría faltar la voluntad del docente.

Резюме - Существуют исследования, в результате которых показано, что школы в наиболее бедных землях, чьи классы комплектуются из школьников различного возраста и способностей, могут быть довольно дешёвым средством повышения не только эффективности обучения, но и доступа к образованию.

Институты, занимающиеся проблемами развивающихся стран, рекомендуют эту модель часто для стран, которые стараются достичь более высокого качества образования и широты охвата населения сельской местности. В литературе, в которой рекомендуется введение смешанных школ, не принимаются, однако, во внимание потенциальные трудности в реализации. В данной статье, приведены результаты исследования условий, при которых возможна успешная реализация, причём даются ссылки на опыт колумбийской “Новой школы”.

Авторы приходят к заключению, что при обучении, которое сопровождает профессиональную деятельность, решающим фактором является подход учителя к своей работе. Однако, нет

достаточно убедительной трактовки различных методов преподавания. Разница методов обусловлена чаще всего мотивацией и персональной заинтересованностью учителей.

Авторы исследуют различные условия, которые могут привести к недостатку мотивации и заинтересованности.

Multigrade schools are a commonly advocated means of providing primary education to children in rural areas of developing countries. Typically schools have one or two teachers with classes that are heterogeneous in both age and ability. Promoters argue that, especially in areas of low population density, multigrade schools can be effective and cost-effective ways of expanding educational access (Thomas and Shaw 1992; Bray 1987) and raising student outcomes (McEwan 1998; Psacharopoulos et al. 1993; Rojas and Castillo 1988). To be successful, teachers and schools must be endowed with inputs such as self-instructional textbooks and training in multigrade instructional techniques.

Among the international development community, these arguments have encountered wide acceptance. Multigrade schools are typically recommended as good educational practice for poor countries with low primary school coverage and quality in rural areas (Thomas and Shaw 1992; Hayes 1993). Advisors often refer to the Colombian experience, where multigrade schools, in the guise of the *Escuela Nueva* program, have been extensively implemented and favorably evaluated (Carnoy and Castro 1996; World Bank 1995; Colbert et al. 1993; Schiefelbein 1992; Lockheed and Verspoor 1991).

The purpose of this paper is not to question such evidence. Rather, it focuses the discussion on issues surrounding the implementation of multigrade schools. The documents cited above assume that multigrade schooling programs are easily transferable to a variety of contexts; indeed, they advocate such a transfer. They do not specify the conditions under which we may reasonably expect the transfer to be successful. When constraints to implementation are noted, they simply refer to the lack of essential inputs, such as teacher training or well-designed self-instructional textbooks. The implementation problem is reduced to one of effective input design and delivery. In this paper, we explore the problem of implementing educational innovations in greater depth.

Existing studies of educational policy implementation in developing countries usually identify one or more variables claimed to be key determinants of successful implementation. Authors examine case studies in order to evaluate the degree to which variables have affected implementation. Common variables can be loosely classified between macro and micro levels. At the macro level, successful implementation is influenced by the capacity of the organization carrying out the reform, the coherence and realism of the policy message, the political environment facing policymakers, resource constraints,

the incentives facing bureaucrats, and the type of planning model utilized (London 1993; Warwick et al. 1992; Craig 1990; Psacharopoulos 1989). Micro-level variables include the perceptions, attitudes, and incentives of teachers, students, and parents, and the 'fit' between local culture and the educational innovation (Craig 1990; Warwick et al. 1992; McGinn 1996; Fuller and Clarke 1994).

This paper explicitly focuses on micro-level variables and how they may affect the implementation of multigrade schools in developing countries. It does so for two reasons. First, micro considerations are relatively neglected in the literature. Second, they are a lynchpin in the final success or failure of an educational program. Macro considerations – such as a propitious political environment, clearly delineated policy message, and abundant resources – are necessary but not sufficient conditions for implementation. In the words of McLaughlin (1987: 174), 'change ultimately is a problem of the smallest unit.' The ability of macro-level actors to pressure compliance at the micro-level is limited, because 'opportunities for co-optation, symbolic response, or non-compliance are multiple in the loosely structured, multi-layered world of schools and education-policy' (p. 173). This is particularly germane in isolated, rural schools which are subject to relatively little supervision (Keith 1989). Thus, teachers play a central role in determining whether and how children are educated, which may or may not be congruent with policymakers' initial plans. This paper illustrates conditions under which the two may diverge.

The paper is organized in the following manner. The second part delineates the key problem of implementation: altering the 'core' of educational practice (Elmore 1996). It then explores to what degree a particular multigrade school program – Colombia's *Escuela Nueva* – has altered core teaching practices through the provision of in-service training. Using a conceptual framework in the spirit of McLaughlin (1987), the following section defines two critical factors which may influence successful implementation at the local level: capacity and will. Though capacity in the form of additional training is found to be an important determinant of changes at the 'core' in Colombia, it does not entirely explain different degrees of program implementation. We suggest that local will, or lack thereof, provides an important additional explanation for the success or failure of educational innovations. The third part examines elements of local will among teachers, and how they may critically affect the successful implementation of multigrade schools. The final part summarizes the main arguments.

The problem of implementation

The central problem of implementing an educational innovation on a large-scale – as multigrade school programs attempt to do – is changing the 'core of educational practice' (Elmore 1996). Elmore defines the 'core' as

'how teachers understand the nature of knowledge and the student's role in learning, and how these ideas about knowledge and learning are manifested in teaching and classwork. The "core" also includes structural arrangements of schools, such as the physical layout of classrooms, student grouping practices, teachers' responsibilities for groups of students, and relations among teachers in their work with students, as well as processes for assessing student learning and communicating it to students, parents, administrators, and other interested parties' (p. 2).

The core of educational practice in rural areas of developing countries is often centered on a rigid format in which teachers lecture, students passively copy from the blackboard, participation is not encouraged, and rote memorization is the norm (Lockheed 1993). Teacher-student relations are often hierarchical and there is minimal discussion among students (Fuller and Clarke 1994). This is likely due to local cultural norms guiding teacher behavior, as well as to the fact that teachers receive limited training and practical experience in the implementation of active pedagogy (Schiefelbein 1992). Despite the necessity of dealing with heterogeneous ages and abilities in one classroom, most rural teachers do not receive special training or materials for multi-grade instruction (Keith 1989). Furthermore, rural schools are often bound by inflexible schedules, despite the variability of agricultural calendars (Colbert et al. 1993).

Implementing multigrade schools along the lines of recent recommendations (Thomas and Shaw 1992; Schiefelbein 1992) implies a revolution at the core. For example, teachers would shift from their traditional role as direct lecturers to that of facilitators who guide students' independent efforts to acquire and construct knowledge. Students would assume new responsibilities for their education and that of their classmates, as cooperative learning, self-instructional textbooks, and peer tutoring became extensively used. The multigrade classroom layout would appear radically different, moving away from the common frontal teaching model to a design that facilitated collaborative inquiry.

Colombia's *Escuela Nueva* is often recommended as a model for other multigrade programs. Implicit in these recommendations is the notion that the program has largely succeeded in altering the core of educational practice in rural Colombia. The program is generally portrayed as a homogeneous entity: one *Escuela Nueva* is assumed to resemble others both in form and function. Moreover, they are juxtaposed with traditional rural schools, which represent the status quo of core practice described above. The following sections examine these assumptions more carefully. First, the ideal form of the *Escuela Nueva* is presented. Second, we explore to what degree, in fact, core teacher practices have been altered.

The Escuela Nueva program

The *Escuela Nueva*¹ usually has one or two teachers per school. Individual student assignments, emphasized in traditional schools, are combined with

work in small groups. Pupils complete academic units at their own pace. If they leave school to help in agricultural activities and later reenter school, they need not start the year anew.

Self-instructional learning guides in mathematics, Spanish, science, and social studies direct both group and individual work. These are accompanied by teacher guides. Units in the book include the learning objectives, guided activities to be completed, and free activities which require application of the knowledge gained. Some involve creative exploration and application of regional-specific knowledge. For instance, local recipes, oral traditions, or flora are collected and studied. Materials related to the different curricular areas are gathered in 'learning corners', where other children can benefit from them. Other components of the *Escuela Nueva* are a small library, a student council, and a suggestion box where student input is solicited.

In-service teacher training is divided into three one-week courses conducted throughout the first school year. Courses use a detailed manual organized similarly to student learning guides (Colbert and Mogollon 1987). The first session addresses the aims and methodology of the *Escuela Nueva*, the organization of the building and classroom, developing the learning corners, establishing a student council, and basic methods of group work. Instruction is conducted in much the same way as it is in the functioning *Escuela Nueva*, so that teachers 'learn-by-doing' instead of passively attending lectures. The second workshop takes place two or three months later. It focuses on learning to use effectively the student learning guides, work in a multigrade setting with the system of flexible promotion, and other teaching innovations. The last workshop covers the use of the school library as well as a final review. Training continues through follow-up workshops in 'microcenters'. Centers are located in demonstration schools where the *Escuela Nueva* methodology is thought to be particularly well-implemented. At workshops teachers are free to exchange ideas, doubts, and questions with other teachers and a supervisor in an informal, non-hierarchical setting.

Changes in core practices in Colombia

Two aspects of the implementation of the *Escuela Nueva* program have been relatively overlooked: (1) whether key inputs such as textbooks and teacher training have actually been delivered, and (2) whether core educational practices have been appreciably altered.²

Evidence shows that only two-thirds of schools belonging to the *Escuela Nueva* program possessed the needed library. Just 33 per cent of third graders in Spanish, and 29 percent in mathematics were using the needed self-instructional textbooks; in fifth grade the figures were 46 and 40 per cent.³ More recent data indicate that, in a sample of fifth grade mathematics teachers identifying themselves as *Escuela Nueva* teachers, only 64 per cent had completed all of the three required in-service training courses, supposedly essential for program implementation (Instituto SER de Investigación 1994). Ten per cent

completed two courses, 14 per cent completed one, and 12 per cent had not participated in any in-service training. Thus, evidence indicates that efforts to improve the capacity of teachers, while extensive, are not complete.

Other evidence describes the extent to which core educational practices have been altered. McEwan (1998) cites data on instructional methods used by teachers in *Escuela Nueva* and traditional graded schools. The former, as expected, utilize techniques such as group work, library research, and exploration outside the classroom with greater frequency. Nonetheless, there is considerable variability in application of techniques which could be categorized under the rubric of active pedagogy. Many traditional school teachers use these techniques, while a substantial number of *Escuela Nueva* teachers use them less than would be expected under a complete 'implementation' of the program. Another study using a different sample of schools and teachers found no significant differences in teacher practices between the two school types (McGinn 1996; Loera and McGinn 1992).

Nationwide data on rural schools and teachers in Colombia (Instituto SER de Investigación 1994) allow us to shed further light on how the core of educational practice has been altered by the *Escuela Nueva* program. Of 580 fifth-grade mathematics teachers in a sample of rural schools, 425 identified themselves as belonging to an *Escuela Nueva*.⁴ They provided a variety of self-reported data on their classroom practices. When asked about how often they used particular instructional techniques, they responded zero (never), one (less than once a week), two (one time a week), three (several times a week), or four (almost every day). We shall concentrate on four classroom practices often associated with the *Escuela Nueva* program: (1) individual problem-solving by students; (2) exploration of spaces other than the classroom; (3) work with various objects; and (4) group work. Each teacher's responses to the four practices were summed in order to arrive at an index variable, roughly indicating the frequency with which some types of active pedagogy are employed in the classroom. *Escuela Nueva* and traditional teachers averaged 10.76 and 9.69 on the index, respectively.⁵ Figure 1 presents the distribution of results among both types of teachers. Though *Escuela Nueva* teachers are, in general, more likely to exhibit higher values of the index variable, there is a large degree of variability among them. In other words, many *Escuela Nueva* teachers teach like traditional school teachers, and vice versa.

One might suggest that variability among *Escuela Nueva* teachers is mainly due to the failure to adequately train all teachers and thus a problem of poor local capacity. To explore the causes of the variability in teaching practices among *Escuela Nueva* teachers, we specified a simple regression model of the determinants of teaching practices and estimated it with ordinary least squares. In particular, we are interested in the degree to which externally imposed conditions such as in-service training affect core teaching practices, after controlling for some background characteristics of teachers. The first column of Table 1 presents the means and standard deviations of the variables used in the analysis. The dependent variable is the index of active pedagogy already

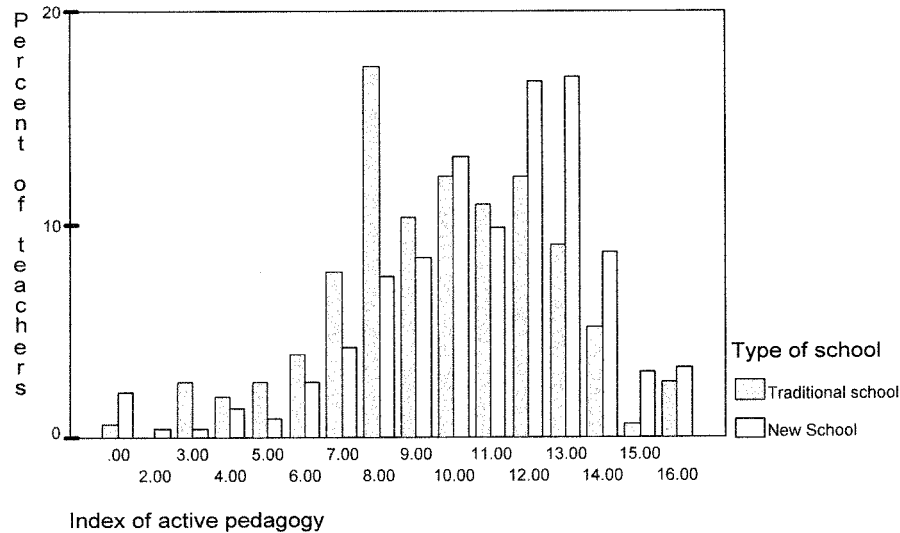


Figure 1. Index of active pedagogy in *Escuela Nueva* and traditional rural schools.

described. Independent variables include the teacher's gender, education, years of teaching experience, and training courses taken in mathematics pedagogy. Such variables may affect a teacher's propensity to adopt certain instructional techniques, even in the absence of special training. Also included are indicators of whether the teacher is from a large city or small city. Finally, dummy variables indicate whether the teacher has participated in each of the three one-week in-service training courses which supposedly endow teachers with the skills necessary to operate a multigrade classroom. The years a teacher has worked in an *Escuela Nueva* are also included, given that on-the-job learning may allow teachers to gradually add instructional techniques to their repertoire.

Results are presented in the second column of Table 1. Female teachers appear more likely to use active pedagogy, all else equal. The effects of formal education and courses taken in mathematics pedagogy are not statistically significant, while additional years of overall teaching experience appear to lessen the use of such instructional techniques. Teachers from small and large cities, relative to those from rural areas, appear more likely to use active pedagogy.⁶ Of the teaching workshops, only the second has a positive and statistically significant effect on the use of active pedagogy.⁷ The second was specifically aimed at encouraging the adoption of new pedagogical techniques, which is consistent with our results. Teachers who participated in this workshop exhibited, on average, an index score that was 1.26 higher, all else equal. This represents a rather strong effect of around 0.4 of a standard deviation.

Thus, evidence indicates that provision of training can affect core teaching practices. Nevertheless, the independent variables as a whole were able to

Table 1. Determinants of use of active pedagogy in a sample of *Escuela Nueva* teachers.

Variable	Mean (standard deviation)	Regression coefficient (absolute value of <i>t</i> -statistic)
Index of active pedagogy (0–16)	10.76 (3.11)	–
Female	0.60	– 0.53 (1.73)
<i>Highest degree</i>		
Post-secondary	0.29	–0.08 (0.19)
Secondary diploma, not in education (Reference category: secondary diploma in education)	0.52	–0.26 (0.65)
Years of teaching experience	11.43 (7.48)	–0.39 (1.77)
Training courses in mathematics pedagogy	0.90 (1.73)	0.11 (1.31)
<i>Lived most of life in</i>		
Large city	0.22	– 0.80 (1.73)
Small city (Reference category: rural area)	0.56	– 1.03 (2.74)
<i>Escuela Nueva</i> workshop (introduction)	0.80	–0.05 (0.11)
<i>Escuela Nueva</i> workshop (use of self-instruction textbooks)	0.74	– 1.26 (2.58)
<i>Escuela Nueva</i> workshop (use of library)	0.73	– 0.24 (0.51)
Years as <i>Escuela Nueva</i> teacher	3.57 (2.97)	0.05 (0.87)
Number of teachers	425	425
Adjusted R^2	–	0.04

Source: Instituto SER de Investigación (1994) and authors' calculations.

Note: Standard deviations are not reported for dummy variables. A constant was included in the regression.

explain only four per cent of the variation in the dependent variable (see Table 1). Put another way, *Escuela Nueva* teachers vary widely in their application of the recommended instructional techniques, and the provision of training (as well as a range of formal qualifications and personal characteristics) are able to explain only a very small portion of this variation.

Capacity and will in implementation

McLaughlin (1987: 172) observes that 'capacity . . . is something that policy can address. Training can be offered. Dollars can be provided. Consultants can be engaged to furnish missing expertise.' And as *Escuela Nueva* has shown, teacher capacity can be effectively addressed by policy and is important to the implementation of educational innovations. Adequate training,

for example, increases the degree to which teachers alter their core practices. But capacity does not provide a complete explanation of implementation's success or failure. In Colombia, even after teacher background and measures of capacity are accounted for, substantial variance in teaching practices remains. For those interested in transferring the multigrade school model to diverse countries and contexts, the determinants of this variance have important implications for the model's success or failure. For even if the requisite program inputs are developed and capacity is provided, the core of educational practice may remain only slightly altered.

The will to implement multigrade schools may be just as important as the capacity to do so. By will we refer to the motivation and commitment of micro-level actors who participate in the restructuring of core educational practices. Will is not always susceptible to policy intervention, inasmuch as it is constantly affected by 'environmental stability, competing centers of authority, contending priorities or pressures and other aspects of social-political milieu' (McLaughlin 1987: 173; Yin 1981). The following paragraphs explore some of the determinants of teacher will in the particular context of multigrade schools. The discussion is meant to be illustrative, showing the complexity of transferring a policy model from one context to another. It is also meant to encourage further, more systematic, implementation research.

Multigrade teaching is not perceived to be a desirable alternative to single-grade teaching in most developing countries. At best, it is considered an undesirable necessity that must be adopted due to the existence of thinly populated communities (UNESCO 1989). A UNESCO-sponsored report on multigrade education in Asia makes this clear:

In all four countries [India, Korea, the Philippines and Sri Lanka], as perhaps in nearly all the countries in the world, the favoured approach in school organization is one teacher per class. That there should be fewer teachers than classes making it necessary for a single teacher to take responsibility for more than one class during a class period is not the desired pattern of school organization and is regarded as being imposed by circumstances on school systems (UNESCO 1982: 1).

Teachers' aversion to the multigrade environment is not just a phenomenon of developing nations. Miller (1990: 2), writing of developed countries, notes that

a long tradition of graded schools has created powerful expectations for administrators, teachers and parents regarding how schools should be organized. Graded instructional organization is a norm expected of schools which creates a handicap for anyone (whether out of necessity or by theoretical design) seeking to operate a multigraded school.

Mulcahy (1993) cites a study from the Canadian Education Association voicing teachers' negative views on multigrade teaching. Brown and Martin (1989) conducted a small survey of educators in Canada – 18 per cent of which headed multigrade classrooms – and only three per cent indicated a prefer-

ence for multigrade teaching. There are several factors which might explain this generalized lack of will to implement multigrade instruction.

Lack of faith in multigrade pedagogy

Traditional grade level organization is perceived by most teachers as a better educational environment (Miller 1991a). The multigrade class is considered a nuisance that must be tolerated (UNESCO 1982). Teaching children of diverse ages and abilities in the same classroom seems confusing and ineffective. Deprivation and resource scarcity are perceived as the principal reasons that would restrict the one teacher-one grade ratio. Thus, motivation among teachers is low and training for multigrade instruction is resisted.

When *Escuela Nueva* was initially implemented in Colombia, it was assumed that the multigrade classroom organization ran counter to conventional wisdom. Thus, teacher participation was deliberately controlled. Specialized training was only offered to educators who expressed interest in participating. Teachers who were not enthusiastic about the program after receiving training were excluded from further participation (McGinn 1996). When the program was nationally expanded, selectivity was curtailed, but some evidence indicates that belief in the program had taken root. A 1987 survey reported that 89.3 per cent of teachers preferred *Escuela Nueva* over traditional rural schools, despite the fact that only 45 per cent had voluntarily affiliated themselves to the program (Rojas and Castillo 1988). Through either word-of-mouth among teachers, or participative training which somehow convinced teachers of the merits of *Escuela Nueva*, the program was able to partially overcome teachers' lack of faith in multigrade pedagogy.

Professional and social isolation

Multigrade schooling takes place largely in remote rural schools. Teachers in this setting usually face assignment to more subjects, more grade levels and more extracurricular activities; lower budgets and salaries; and inadequate materials (Barker 1986; Dove 1982). The inaccessibility of supervisory offices hinders the distribution of textbooks and other resources, as well as limits the opportunities for district administrative support and teacher merit reviews. This also translates into fewer chances of promotion, professional development or interaction with peers.

Environmental conditions can be inhospitable. Local housing and health facilities may be poor and weather conditions extreme (Lahren 1983; UNESCO 1982; ILO 1991; McEwan 1999). Teachers may be at times unfamiliar with local languages or value systems (UNESCO 1989). They may experience difficulty in integrating with and being accepted by the local community; in some extreme instances, they may also experience outright hostility. Many Colombian teachers, for example, taught children whose parents were involved in political strife (Loera and McGinn 1992).

These factors make it difficult to recruit and retain multigrade teachers, and undermines the motivation and commitment of teachers to their jobs. Many educators last only one or two years in rural schools (Scott 1984). High teacher turnover undermines the stability of schools and exposes children to inexperienced mentors year after year (Lahren 1983). In the Philippines and Sri Lanka, teacher absenteeism in multigrade schools is greater than in other schools as teachers tend to take all the leave to which they are entitled in order to travel to their home towns or other more attractive places (UNESCO 1982).

Despite teacher incentives – including housing subsidies and isolation salaries – districts cannot always fill teaching positions (Scott 1984). Teacher recruitment and posting in isolated locales demands organized central level support (Thomas and Shaw 1992). In some countries, the state intervenes through compulsory assignment to rural areas. However, this strategy does not circumvent teacher retention and attrition problems. It may, in fact, result in an unmotivated teaching staff prone to frequent absences (Murnane 1993). Specialized teacher training in conjunction with recruitment from local villages and greater community involvement may be among the most effective solutions (Dove 1982).

Multigrade teaching is more demanding

Multigrade teaching may require more work than single-grade instruction. Demands on teacher resources, both cognitive and emotional, are greater (Miller 1991b). Curriculum design and organization requires attentive preparation and greater coordination (Miller 1991a). This is particularly the case if teachers do not have access to specialized materials, such as self-instructional textbooks, to support their preparation. Motivating students and maintaining their concentration is harder. Teachers are responsible for more subjects and cannot repeat lessons from year to year. Multigrade schools are usually understaffed so they must fulfill a variety of other roles involving administration, transportation or community organization (Scott 1984).

On the other hand, the multigrade classroom can be an exciting and challenging place for many teachers (Mulcahy 1993). There are greater opportunities for innovation and experimentation. As teachers remain in the same class from year to year, they can develop deeper relationships with their students. This also allows for greater continuity in planning from one year to another. In the words of one multigrade teacher:

I think the biggest benefit is that you get to work with the child over two or three years, and when the child comes back you can pretty much pick up where you left off. You can set very long-term goals for children; you don't have to say by the end of the year I've got to get them here. You take a longer and broader vision with the child, and I think in that way you are not as superficial (Marshak 1995: 14).

With proper training, teachers become more effective, and as they become more effective, educators find greater fulfillment in teaching and grow a

stronger commitment to multigrade education. It is possible that effective capacity-building can have the desirable effect of reinforcing the will of teachers.

'Ownership' in multigrade teaching

Multigrade teaching programs, as other policy 'models', are often viewed as a homogeneous package of inputs that, when properly delivered, are effective in raising achievement or producing other desirable outcomes. Deviating from the prescribed inputs implies that the program will be less effective. But if teachers are merely treated as a manipulable input to the schooling process – if they do not have a sense of 'ownership' in the educational innovation – it is unlikely they will possess sufficient motivation and commitment to the program.

McGinn (1996) notes that in the initial stages of the design and implementation of the *Escuela Nueva* program (in fact, before it was even referred to by that name), teachers were intimately involved in the process of curriculum design. He uses the word 'organic' to refer to the iterative, grass-roots process of program design:

the methods that were tried were not deduced from the theory but rather the theory was induced from the innovations of individual teachers and the *Escuela Nueva* inventors in Colombia, working together, observing and reflecting on their actions. The actions were theirs. The process was 'organic,' a lived experience (McGinn 1996: 23).

While acknowledging that teacher involvement improved the quality of program inputs, it also seems likely that the mere act of involving them in key aspects of the program design created a sense of ownership and reinforced their will to successfully implement the program.

The program was later 'frozen' as the package of inputs described in part 2, thus setting the stage for a nationwide scaling-up of the program. But creating the conditions for local capacity-building on a nationwide scale may have also removed much of the potential to build teacher will on the same scale, because the large-scale program was, perhaps inevitably, not able to provide all teachers with a deep sense of ownership. Nevertheless, a partially implemented *Escuela Nueva* has still proven more effective than traditional rural schools (McEwan 1998).

Conclusions

Multigrade schools are a popular alternative for improving rural education in developing countries, and not without reason. Studies suggest they can be effective and cost-effective means of raising student outcomes and expanding educational access in poor countries and regions. Nonetheless, much of the

discussion advocating the model's transfer to other contexts has either skirted issues of implementation, or reduced the problem to one of providing capacity, perhaps through teacher training. Other studies of educational program implementation, cited in the introduction, have often focused on macro-level variables, such as resource constraints and the political context of implementation.

We have argued that, firstly, the presence of suitable macro-level conditions is a necessary but not sufficient condition for a successful implementation. Thus, a careful consideration of issues like capacity and will is required. Secondly, capacity is important but cannot be emphasized to the neglect of local will.

Implementing a program of multigrade schools represents a substantial alteration of core educational practices in rural areas of developing countries. In examining the Colombian *Escuela Nueva* program, we showed that local capacity is important in altering educational practice – proxied by the adoption of certain elements of active pedagogy. However, capacity was unable to provide a complete explanation for the wide variation in teaching practices we observed. This is particularly telling, because the Colombian program is argued to be one of the *most* successful multigrade schooling programs; indeed, it serves as a model for other countries. We asserted that local will might explain much of the remaining variation in the adoption of core practices or, in other words, a successful program implementation. Though no empirical test was feasible, we explored conditions under which teachers may lack the commitment and motivation to participate in implementation.

Our main conclusion, then, is that local will is important to the successful implementation of multigrade schooling programs and, indeed, to education programs in general. This begs at least two questions. First, what sense does the concept of 'best practice' have if conditions of local will vary across contexts? At a minimum, more care needs to be taken in qualifying results by specifying the conditions of local will under which such practices would, in fact, be 'best'. If this is not done, facile recommendations for one country based on another's success will not, in all probability, be very useful. Second, can local will be affected by policy? Part 3 alluded to at least a few answers: greater incentives for rural teachers for example, or capacity-building which is more participatory. This remains, however, an important topic for additional research.

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Notes

1. This relies on Schiefelbein (1992) and Colbert et al. (1993).
2. Sources which do address these issues include McGinn (1996), Aristizabal (1991), and McEwan (1998).
3. McEwan (1998), based on data from Instituto SER de Investigación (1993). The sample covered three departments in the Pacific region of Colombia.
4. The data used in the paper's empirical analyses are from Instituto SER de Investigación (1994). The study sampled private and public schools, in urban and rural areas, from the universe of schools in Colombia. Within each school, researchers sampled one course each of third-grade Spanish, third-grade mathematics, fifth-grade Spanish, and fifth-grade mathematics. This paper uses the sub-sample of rural, fifth-grade mathematics teachers. Teachers assigned to each classroom answered questionnaires, from which the data for this paper were drawn.
5. The difference was statistically significant at one per cent.
6. This could indicate that teachers from rural areas were less exposed to active pedagogy during their own education, which affected their subsequent teaching practices. However, it seems more likely that these dummy variables are proxying the quality of teachers' education or their ability, so results should be interpreted cautiously.
7. Some evidence indicates the quality of the in-service training workshops has been variable across regions and time periods (Aristizabal 1991). Since no variable is included which controls for the quality of workshops, their effects on teaching practices may be understated.

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