Title: The Professional Development, Characteristics and Pedagogy of Effective Teachers on Student Learning.
INTRODUCTION TO RESEARCH ON TEACHER EDUCATION

Countries throughout the world have upgraded their teaching corps from secondary normal school graduates, to two and then three year post-secondary degrees, and finally to four year, university tertiary degrees. In many of the OECD countries, significant percentages of the teaching corps have also obtained Master’s degrees or beyond, and almost all require some form of Continuous Professional Development (CPD) throughout the lifetime of their teachers. Indonesia is no exception to this trend, although previous upgrading has not been enforced, and hundreds of thousands of “contract” teachers, particularly in the primary schools, have yet to fulfill even minimum requirements. While a majority of secondary teachers already have the D4/S1 university degree, there are still significant numbers of teachers at the junior and senior secondary schools, who have not yet completed their university degree.

Regrettably, few impact studies have been conducted in the developing world on the effects of upgrading teachers from one level to the next, or through putting in place certification examinations. Policy decisions have generally been made in the absence of hard data, and are based on faith that upgrading and certification will automatically lead to higher achievement. While there is a certain face validity that better prepared and examined teachers will lead to higher student achievement, the results of research that have been conducted, provide a mixed picture.

In an analysis of the 1999 TIMMS data, Xin and colleagues (2004) concluded that “in general teacher credentials have no effect on any type of cognitive skill development as well as on the test score.” Goldhaber and Brewer (2000), however, found strong and consistent evidence that, as compared with students whose teachers are uncertified, students achieve at higher levels in mathematics, when they have teachers who hold standard certification in mathematics and that the same was true to a lesser extent in science. Despite the evidence they controversially concluded that students taught by teachers with “emergency credentials” did no worse than those fully certified. Darling-Hammond and her colleagues (2000), in critiquing that study, found that most of the “emergency teachers” had similar qualifications to those who were fully certified, thus the case against certification policies was not very strong. One should not, however, make a direct comparison of “emergency certificated” teachers, with university degrees in mathematics or scientific subject areas in the OECD, to the hundreds of thousands of “contract” teachers found in Indonesia, many of whom have only a secondary education or less.

Scheerens and Bosker (1997) found that when student achievement, in studies from throughout the world, was measured at a single point in time, and without controlling for differences among students in social background and prior achievement, about 15-20% of the variance lies among schools, another 15-20% lies among classrooms within schools and the remaining 60-70% of variance lies among students. This finding is critical to assure that in any interpretation of research findings, teachers and their credentials and training are not seen as the only variable in the achievement of students.
In a study (2000) of teacher quality and student achievement in the United States, Darling-Hammond concluded that “quantitative analyses indicate that measures of teacher preparation and certification are by far the strongest correlates of student achievement in reading and mathematics.” Her analyses also suggest that policies adopted regarding teacher education, licensing, hiring and professional development may make an important difference in the qualifications and capacities that teachers bring to their work, and that little inquiry into the effects on achievement has been conducted.

Research in the United States on the effects of primary teachers on student achievement provides evidence to support a consistent and positive significant relationship between teacher education coursework and student performance in the classroom as measured on standardized observation instruments, while relationships between classroom performance and subject matter test scores were positive, but insignificant or non-existent (Guyton and Farokhi, 1987). Numerous other research studies could be presented on what are the effects of pedagogical training, subject matter knowledge, subject majors in tertiary education, certification examinations, and other factors on student achievement. It is safe to say, however, that the research presents “mixed” results, but that when training is subject and age specific, it is more likely to lead to higher student achievement.

INTERNATIONAL RESEARCH ON THE TEACHING PROFESSION

A. Demographics of the Teaching Profession

1. Social Class:

Entering the teaching profession has for generations been an upwardly mobile career choice for young people not only in the United States (Lanier and Little, 1986), but in countries throughout the world. Generations of children of farm and factory workers traditionally became teachers in the United States throughout most of the 19th and 20th centuries, although with many professions closed to women, there was always a percentage of women from professional families, who became teachers. In recent decades, perhaps starting with the “escaping” the Vietnam War and with teachers salaries reaching a level where a family could be supported, a broader range of students from various social classes have entered the profession. In the developing world, the profession has generally remained near the bottom of career choices for students graduating from secondary schools, with the exception of a few countries such as Egypt, where the possibilities of making comparatively large salaries through after-school tutoring and other “off-the-books” mechanisms, appears to have drawn from a wider range of social classes. As previously mentioned, because of low salaries and prestige, Indonesian teachers have generally come from the working classes, but it is hoped that with the doubling or tripling of salaries, along with unemployment rates among university graduates, that a students from a broader range of demographic background will be attracted to and remain in the profession.

A demographic that has been true of teaching for generations all over the world is the fact that it is seen as an upwardly mobile career choice for a large percentage of the population. This remains true for much of Latin America, as Cuenca (2004) reports, where teaching, despite its low prestige and salary, is seen as a “step up” from the agricultural or working class families from which many of them come. The “quality” of student attracted to enter teacher training has also been of great concern in most countries throughout the world, with top students being attracted to medicine, law, economics, and other higher paying
professions, with greater societal prestige. In one of the ironies of modern economics, with stagnant economies, many other professionals have found themselves teaching secondary school to supplement their incomes as doctors, lawyers, economists or engineers. This has created a policy difficulty for many countries, as few of these individuals have ever received any training whatsoever on the pedagogy of teaching their subject matter, something that research in the United States is showing to be among the most critical factors in student achievement. Being an engineer does not necessarily make one a good mathematics teacher.

2. Gender and Age:
Like teachers in Latin America (Navarro, 2002), and also true in many or even most parts of the world, teaching in Indonesia is predominantly a female profession, with an aging teaching force, and with promotion or higher salaries closely related to time in the profession. An aging teaching profession is also true of many developed nations, but not to the extent of some of those in parts of Europe, where in Germany and Sweden, over 40% of the teachers are 50 years or older. (Santiago, 2002). Countries with large indigenous populations have comparatively few teachers from “minority” groups represented in the teaching profession, and this appears to be true in Indonesia, although statistics are not available at this time. In this they are not too different from the United States or many European countries, who now find literally millions of minority students in their classrooms, with comparatively few teachers prepared linguistically or culturally to teach them.

B. Intellectual Quality and Placement of Teachers

1. Intellectual Quality:
The intellectual quality of teachers has dominated both discussion and research on teaching for many years. Cuenca (2004) in reporting on teacher training programs in 10 different Latin American countries concluded that with few exceptions, future teachers came from among secondary graduates with lower entrance scores than their peers. Reports from teacher training institutions in Indonesia, indicate that this phenomenon also holds true, but it is hoped that with a doubling and tripling of teacher salaries, and growing unemployment among university graduates, that this will soon attract higher quality students. Intellectual quality, however, cannot be merely the scores on standardized tests or the commonly used university entrance examinations. It must consist of other variables, such as an understanding and appreciation of subject matter, and as importantly, of the pedagogy related to that subject matter. Teaching also consists of a mix of intellectual and personal qualities. North American researchers (Howey and Strom, 1987) include among the most important characteristics the qualities of “being adaptable, questioning, critical, inventive, creative, self-renewing and oriented to moral principles.” Many countries, including Indonesia, have developed profiles of a good teacher, which often include these and other characteristics. Regrettably, teacher training programs throughout the world often stifle creativity, rely on student’s memorization of abstract theories, and seldom exemplify in their own programs these or other important characteristics.

2. Intellectual Comparisons to other Professions:
Recent studies (AACTE, 1992) in the United States have found that if one measures only those students who declare education as their major subject (enter a normal school or university education program), then there is considerable support for the perception that
teaching candidates are below their peers in academic quality. If, however, one looks at who successfully completes all the screens: standardized test scores at secondary school graduation, basic skills tests, academic skills tests, entrance to teacher candidacy, student teaching, graduation tests etc., future teachers are at or above their peers in the universities. To my knowledge, no similar studies have been carried out by Indonesian researchers, but socioeconomic and prestige factors would appear to indicate that such a shift in quality has yet to appear. This is not to say, however, that teachers with poorer academic records are necessarily poorer teachers, but until the profession can draw its fair share of the best and the brightest in any age cohort, it will continue to have difficulties improving its salaries and prestige and significantly improve the academic success of its students.

Zumwalt and Craig (2005) raise some of the critical questions which training institutions, policy makers and Ministries of Education must answer about what the quality profile of a teacher should be.

Should any students in the bottom quartile be permitted to become teachers? Should teacher test cutoffs be raised so that the quality profile of teachers looks better? Should the ability distribution of teachers match the ability profile of all college graduates? Or should it match the distribution of college graduates going into medicine, law, business, journalism, and social work?

3. Equity in Teacher Placement:

Of greater importance than either gender or age, however, is the fact that particularly in poor communities throughout the world, children are too often taught by teachers with only 12 years of formal schooling, compared to 16 years in more developed countries. They are also more likely to be taught by untrained or under trained teachers, known as “empíricos” (Vaillant, 2004) in Latin America, or “contract teachers” in Indonesia. Given the low pay of teachers in most countries and the fact that a high percentage of them are heads of households, it is often difficult for them to even feed their families on their low salaries. In some cases, the salaries are even below the cost of the “basket of food needed to feed a family of four,” and many teachers thus have to teach more than one cycle, run a small store out of their home, or seek additional employment elsewhere. This kind of economic pressure, makes it difficult for teachers to give their full attention to the students they are teaching, and has a negative effect on student achievement in their classrooms. There is strong evidence that the better educated teachers in Indonesia come from cities and remain there, teaching at either the better public schools or in middle and upper class private settings.

C. The Location and Nature of Pre-Service Teacher Training

1. Secondary to Tertiary Teacher Education:

Over the past half century, almost countries throughout the world have upgraded pre-service teacher training from secondary normal schools to superior normal schools or universities for primary teachers and to university level training for secondary teachers. Indonesia is no exception to this trend, although attempts to upgrade to D2, or two years of higher education, some 15 years ago has not yet been achieved for vast numbers of primary teachers throughout the country. What is missing in Indonesia and throughout the world, however, is definitive research, indicating that this “raising of standards” for entry to the profession has
had much effect on improved achievement on the part of students. In fact, with the rapid growth of school enrollments in Indonesia and throughout the world, particularly with “Education for All,” there is strong research evidence that student achievement, has actually fallen in recent decades throughout much of the developing world..

2. Theoretical Nature of Training:

Vaillant (2004), PREAL-BID (2002), and several researchers in Flores Arévalo (2003) agree that one of the major problems facing teacher training in Latin America is the overwhelmingly theoretical nature of much of the instruction, regardless of institution. Figueroa (2004) goes on to state that current teacher training in the region is characterized by lectures by professors describing phenomena to groups of young people seated in front of them in rows or banks of seats. He calls this the “clase magisterial,” a method used since the middle ages. He goes on to call this a type of pedagogy “academicismo,” in which the professor lectures his classes in an individual and solitary mode. He goes on to point out that this traditional methodology forgets the emotions, which the professor and student bring to the classroom. In recent decades, with the replacement of behaviorism with the educational philosophies, psychologies, and pedagogies of constructivism, humanism, multiple intelligences and active learning in most teacher training institutions, one might suppose that this would impact the type of training future teachers receive. Regrettably, both observation and research indicate that the “new” approaches remain little more than theoretical constructs, and that teacher educators seldom “practice what they preach.”

3. Excellence in Secondary Normal Schools:

It is my observation, and that of many of older colleagues, that some of the very best teacher training occurred in the 1950s and 1960s, in the old secondary level Normal Schools. These institutions recognized that their students were young, not well educated, and were going to be working in predominantly poor, rural settings. The training they provided, therefore, tended to be very “hands-on,” with an emphasis on the practical problems these (predominantly) young women would face once out in the schools. Future teachers tended to come from their villages, receive an intensive “boarding school” education, and on graduation return to their villages. With the moves towards upgrading teaching to the superior normal school and university level and the rapid urbanization throughout the world, students now come from all over the country, attend commuter institutions rather than boarding schools, are seldom prepared to work effectively in either a rural or urban setting, are often taught by professors with little or no experience teaching the grade levels for which they are preparing students, are instructed in the formal lecture format so typical of higher education worldwide, and are generally given too much theory and too little practical experience in the schools. Once future teachers have been to the big city, they seldom return to their home villages, and the poor, rural communities are often left with the largely untrained “contract” teachers. The problem also manifests itself in an urban setting, where poorly trained teachers struggle with large classes, disintegrating infrastructure and the high cost of living.

4. Type of Institution:

As teacher education has been upgraded to the tertiary level, it has become increasingly separated from the realities of the classroom, and as it has become increasingly a function of the universities, it has been even farther removed, with ever more theory, research of limited
value, and instructors with little or no experience in the K-12 classrooms. Many of the large public universities throughout the world now have upwards of 100,000 or more students, so that teacher education too often gets little support in the competition for resources.

Pedagogical universities have come into vogue in several countries including Honduras (Salgado, 2005) and Mexico (Campero, 2004), and these are likely to produce better teaching graduates than the large multidisciplinary campuses. The National Pedagogical University of Mexico (UPN) has 76 sites throughout the country and emphasizes: educational practice throughout its training, which includes among its goals; reflection on both theory and practice; group work; the interchange of experiences; tolerance and respect for diversity; development of the identity of an educator; transformation through collective action; collegiality as part of the teaching team. Regrettably, many normal schools in recent years have attempted to become universities, thus too often combining inadequate theory, lack of academic rigor, with limited practice in the schools.

5. Accreditation of Teacher Training Institutions:

Indonesia, like many countries, has seen the massive expansion of private universities, many of whom offer some form of teacher training, along with the growth of virtual universities offering pre- and in-service training programs. Some form of national or regional accreditation system to assure the quality of future teachers is an imperative. Regrettably, accreditation systems throughout the world have too often dealt with quantitative issues concerning numbers of professors, library books, types of students etc., and have not until the past decade or so moved towards qualitative judgments about effective training programs, quality of graduates, follow-up studies, and relationships with the schools.

6. Heterogeneity of Programs:

North American and European countries, while still exhibiting a wide range of diversity, have been moving towards nearly exclusive university/higher education based training, combined with research on teaching and a role continuing or in-service education. They have also been experimenting with 5 year programs and programs for adults coming to teaching from other occupations; extended observation, aiding, practice teaching and internships in the schools; strengthening of initial certification and re-certification or continuous professional development (CPD) requirements; the greater use of mentor and master teachers; and the elaboration of standards for teachers.

It is difficult to describe one pre-service model in the world today, as Vaillant (2004) suggests that heterogeneity and diversification are its dominant characteristics. Institutions of almost any type can be found: secondary and tertiary normal schools; municipal, provincial, and national institutions; technical school; pedagogical universities, and general public and private universities. There is also little agreement on the amount of time needed to prepare teachers, with a range of 2-5 years. Vaillant agrees with the PREAL conclusion in several of its reports, that far too many teachers are being poorly prepared and that the profession needs a major overhaul. While there is a temptation to “let a thousand flowers bloom,” regrettably there are not a lot of quality experiments being conducted on how best to prepare teachers for the many challenging school settings in which teacher graduates will find themselves.
D. The Curriculum of Teacher Training

1. Curricular Debate:

For much of the past fifty years, the debate within teacher education has been between those advocating greater subject-matter of “content knowledge” on the one hand, and those advocating teaching, pedagogical, or “learning-related knowledge” on the other. Traditionally, learning related knowledge has to do with classroom management, pedagogy, and evaluation. While the research has tended to show the greater relationship of learning related knowledge to student achievement than content knowledge, the debate continues. More recent research, however, (Marcelo, 2002) has shown the perhaps even greater importance of “pedagogical content knowledge”, that is, specific and specialized knowledge about a particular discipline. By pedagogical content knowledge, I mean the skills and knowledge of how to teach young children to read, write and understand, not just decode words. It means understanding mathematics at a deep enough level to teach young people not just arithmetical skills, but also the application of those skills in the real world. Foreign languages are not just a matter of reading or decoding the language, but are useful communication skills. Scientific knowledge is not the memorization of facts, but the ability to use science in everyday life.

2. Academic Major:

One question facing teacher training, regardless of setting, is whether students should “major” in an academic discipline such as mathematics, foreign language, national language and literature, the social sciences, the natural sciences, or other disciplines offered within universities. There is, as yet, limited evidence one way or another supporting this, although much of North America has moved this direction, even for primary school teachers. It is likely important, however, to move this direction due to the face validity it has for policy makers and the public. It assists professional educators in their attempts to escape the charge of a lack of intellectual rigor in departments of pedagogy, and makes it easier to compare graduates of these “academic” departments entering or not entering teaching.

3. Subject Matter Knowledge:

An important question in researching pre-service teacher education programs is the teacher’s knowledge of subject matter as it relates to their effectiveness. In North America there have been a large number of studies addressing the connection between the amount of college (university) level subject matter study and either teacher performance or K-12 pupil achievement. Floden and Meniketti (2005) conclude that only in secondary school mathematics is there a clear connection between the amount of subject matter study by the teacher and pupil achievement. In all other teaching areas the effect is mixed, with some studies showing a positive correlation, some no effect, and one even showing a negative effect of primary school teachers having a graduate degree in mathematics. In an attempt to look at actual knowledge of subject matter, rather than just having taken mathematics courses, researchers (Borko, et.al., 1992) have found that while teachers may have mastered basic skills in school subjects, they lacked a deeper understanding of the concepts they would later teach. This was also found in science, language arts, literature and other subject areas. There is, to my knowledge, no similar research that has been conducted in Indonesia to attempt to measure the effects of either having taken course work or actual knowledge of specific subject matter, as it relates to student achievement. All of this is not to say that
university level course work has little or no effect on teacher’s success as measured by student achievement, but it is to say the moving teacher training to the university level is not likely, in an of itself to have an automatic positive effect on student achievement.

4. Educational Foundations Courses:

Many teacher education programs throughout the world consist of “Foundations” courses, in such fields as the philosophy, sociology, psychology, and history of education. North American research has been unable to document positive effects on student learning of these “theory” courses, except where special modules on methods were explicitly part of the courses (Floden and Meniketti, 2005). Cuenca (2004) points to the theoretical nature of much of what is found in teacher programs throughout the Latin American region. While most teacher training programs in North America include only 1-3 foundational theory courses in a teacher preparation program, Latin American programs tend to have 3-6 different ones spread throughout their programs. Given the near unanimous critique of too much theory in teacher education programs throughout the world, and the inability of researchers to document any significant student academic achievement gains through the study of theory, this would appear to be an important area of consideration for change and improvement. This is not to say, however, that the study of theory, particularly the constructivist psychology of Piaget, the social constructivism of Vygotsky, or the pedagogies of Sócrates, Pestalozzi, Dewey or Freire, (Avalos, 2004), is without benefit, but that the study of these important theorists, without any understanding of how to put them into practice in the practice is not likely to improve teaching or the learning of students. It is critical that teachers be competent both in their knowledge and in their ability to put that knowledge into action in the classroom.

5. Methods Courses:

A critical part of teacher training in the United States has been, for many years, general and special methods classes to prepare teachers for teaching at a particular grade level or teaching a specific subject matter at the primary or secondary level. Methods classes are often tied to assigned work in the community or schools, working with students one-to-one, in small groups or whole classes, or conducting small research studies, while observing in the schools. There has generally been the tacit assumption that the methods courses, school observations, university instructors and supervisors, and classroom teachers are all on the same page (Clift and Brady, 2005). Regrettably, this has seldom been true in the U.S., Latin America, or Indonesia for that matter. In many countries, while both the old secondary normal schools, and those now at the tertiary level, continue to offer methods classes, many universities do little in the way of pedagogical training, particularly for teachers at the secondary level. A major breakdown worldwide has been the separation between the “autonomous” universities, and the Ministry of Education run school systems. Regrettably, there is strong evidence that while future teachers learn to focus on new pedagogies in their methods classes, that these are often abandoned, when the have to confront classroom management concerns in the actual classroom (Grossman, Valencia and Hamel, 1997). The research appears to indicate that it is difficult to translate university-based recommendations into actual teaching practice, and while methods courses appear to result in improved confidence on the part of students, there is little evidence of future teachers adopting a conceptual change model of teaching (Settlage, 2000).
6. Pedagogical Theory and Practice:

Grossman (2005) defines pedagogy as all interactions among faculty, students and content during class time, including case-studies, simulations, role plays and video cases, community immersion, technology, inquiry, and microteaching, and all tasks or assignments such as such as student journals, case reports, portfolios and practitioner research. This expansive definition indicates the complexity involved in a university-based teacher education program. Regrettably, most observers and researchers of teacher education indicate that its programs are still characterized by an overwhelming dependence on theory, presented in a formal class lecture model. While many teacher education programs include microteaching as part of their curriculum, few have used the wide range of pedagogical practices listed above. Winitzky and Arends (1991) analyzed five instructional approaches: direct instruction, presentation with advanced organizers, concept teaching, cooperative learning and classroom management. They found no significant differences in the groups, and that microteaching and clinical discussion were equally effecting at both knowledge promotion and skill acquisition.

7. Technology:

Throughout the past half century, various forms of technology have been touted as the “answer” for both student learning in the schools and in teacher education. Slide projectors, film loops, radio, television, overhead projects, videotapes, videodiscs, computers, internet learning, and many others, too numerous to mention, have been tried. Regrettably, billions of dollars have been spent on technologies, too many of which have been discarded and fill the closets of schools throughout the world. This is not to say that each of the technologies has not been shown to be of value in many cases, but history does offer the warning, that with severely limited funds, both schools and teacher training institutions in developing countries must make important choices about when and where to introduce which technologies. With the traditional dependence upon expensive textbooks and other written instructional materials, that too often have to be expensively copied by students at the nearest “copy shop,” the internet, particularly with websites in many languages, is fast becoming a major source of information. Whether this important technology will change how teacher education is delivered remains to be seen. Virtual universities with teacher pre- and in-service training programs are springing up all over the world. It will be critical for nations or regional groupings to assure maintenance of not just quality, but the very necessary experiential involvement of teachers trained by these methods, with the actual school realities. It is also critical to attempt to provide some level of equality between poor and rich schools, without which, the poor can only fall further behind.

8. Academic Degrees:

Part of the accepted wisdom in much of the world is that a degree (B.A., Lic., M.A. or Ph.D.) in a subject matter field is sufficient training to become a teacher of that subject matter. While there is no evidence indicating that persons with more education are poorer teachers than those with less formal training in their discipline, there is also little evidence that knowledge of subject matter by itself, as indicated by degrees, is directly related to student achievement. North America’s perhaps leading researcher on teacher quality has concluded in much of her research (Darling-Hammond, 2000) that pupil learning “depends substantially on what teachers know and can do.” (p.11). Again, this is an indication that knowledge of
subject matter alone is insufficient, but must be tied closely to the teaching of that subject matter in an age and subject-matter appropriate manner.

9. Secondary Teachers:

As Moreno (2004) states in his World Bank report, the training of secondary teachers is particularly problematic, as their identity is not constructed around teaching, but around the discipline of their specialization. They tend to be the hardest to attract to teaching, the most expensive to educate and the most difficult to retain in schools. Male teachers in high demand areas such as mathematics, science and technology have high attrition rates in almost every country in the world. The demand for their skills by the private sector or even government positions is high, and it is hard to blame them for seeking better paid positions. While primary teachers generally have closer contact with their peers in the school, and in many countries, often have parents or community members assisting or observing their classrooms, secondary teaching tends to be characterized by greater solitariness and isolation, compared to almost every other profession or job. Both the architecture and the social organization of schooling contribute to this isolation. Partially because of this isolation, changing secondary teacher’s pedagogy is a difficult task. To change the role of teacher from transmitter or distributor of knowledge to one who creates and directs complex learning environments, will involve not only new forms of teacher training, but also new, more flexible school structures. Shulman (1998) calls this the creation of a “community of practice” where individual experience can be converted into a group one.

10. Competency-Based Curriculum:

With the move of many countries towards a competency-based curriculum, particularly at the secondary level, with the emphasis on working in teams, creativity, problem-solving, conflict resolution, and living with complexity and ambiguity, secondary teachers find themselves caught between their training in the traditional disciplines and pressures to adopt new pedagogies to help their students achieve the competencies. Unless secondary teachers themselves have these new competencies as a result of their teacher training, it is unlikely that they will be able to design instruction that will lead their students to attain them. The Ministries of Education in many countries of the world have adopted the language of a competency-based curriculum, including profiles, standards, benchmarks, rubrics and many other aspects of the movement. Research has yet to be conducted to show definitively that this massive movement has had much effect on either how teachers teach or whether student’s learning is improved.

E. Other Components of Teacher Education

1. Portfolios:

A comparatively recent change in assessment practice of students in teacher education has been the use of portfolios, which the student is give the opportunity to reflect on their own progress. Portfolios can contains student observations of classrooms, student research papers, lesson plans, reflections on teaching, student handouts or almost anything else which a teacher might do. While many teacher education programs worldwide, and even whole states in the United States have adopted them, Loughran and Corrigan (1995) found that one-third of students had no clear idea of the purpose of the portfolio, a third saw it as an assessment tool, and the final third saw it in terms of an employment tool. Students have also found it
frustrating to try to represent their learning through a portfolio. My colleagues at the University of Colorado (Borko et al., 1997) found that the portfolio is used for reflection, exploration, evaluation and as a link of theory and practice. Portfolios are under discussion in Indonesia, particularly as they relate to Recognition of Prior Learning (RPL), so that teachers with many years experience would not have to return to universities for 2-4 years of full-time study, in order to be fully certified and obtain the S1, Bachelor’s degree.

2. Practitioner/Action Research:

Practitioner research is now being included in many teacher training programs, and is also included under the name of action research or teacher research. There are a variety of perspectives on practitioner research, but it generally includes that which is intentional, collaborative and democratic in its outcomes. (Price, 2001). Future teachers involved in action research may look for concerns about moral and political issues, seek to develop a conceptual change orientation to the teaching of a given subject matter, look for a great understanding about student thinking, level of satisfaction with courses or practical experiences, student learning or a host of other important questions. There is little documentation on the effects of practitioner or action research, but it is important to offer the caution that pre-service and practicing teachers often find it difficult to find the time to engage in research activities, and that it is often problematic for student teachers to negotiate research agendas with their cooperating teachers in the schools. In many regions, much of the so-called action research conducted by teachers has tended to be of an attitudinal nature, and seldom tied to pedagogies, assessments or academic knowledge related to student achievement. Indonesia hopes to include action research as one of the evidences of prior learning, in addition to providing teachers with the skills to diagnose and deal with learning difficulties in their schools and classrooms.

F. Teachers in the Profession

1. Time in Position and Incentives:

Morduchowics (2003) points out in his work that teachers are generally rewarded for time spent in the profession or for in-service training received, but that to greatly improve their salaries, they have to leave the profession. After 15 years, teachers around the world can improve their salaries only from 20-40%, seldom enough to cover the inflation in basic commodities. In countries such as Nicaragua, with among the lowest teaching salaries in the region and the world, trained teachers often don’t even enter the profession, but chose immediately to go into the private sector. Because national economic crises, many Ministries of Education have too few or no new positions available for teachers. Few experiments have been held anywhere in the world in which teachers are paid according to evaluations of their success as teachers (Aguererrondo, 2002) and given the low salaries, poor working conditions, and low prestige of the profession, it is unlikely that many teacher’s unions will permit this to occur in the near future. Craig, Kraft, and duPlessis (1998), concluded in their book on teacher education for the World Bank and USAID, that teachers (unionized or otherwise) are an absolutely critical stakeholder in setting public policies and in the improvement of the profession, and that governments ignore them at their own risk. Merit pay can easily become the “Third Rail,” of educational reform if not carefully negotiated.
2. Teacher Attributes, Classroom Pedagogy and Student Achievement

The analysis by Fuller and Clarke (1994) of literally hundreds of studies in the developing world, found certain factors to be more likely to have an effect on student achievement than others. The amount of teaching experience did not prove to be a critical factor in most studies, and salary level correlated with experience, also proved to be of little importance. In-service training, years of schooling and attendance at tertiary education were sometimes found to have a positive and significant relationship with student achievement, but it is disconcerting to note that many studies could find no significant difference. Subject matter knowledge or language proficiency was found in four studies to be significant, and these have since been shown to be important in studies. The table below on teacher attributes and classroom pedagogy points to some critically important points that are perhaps obvious, but which appear to strongly effect student achievement. It can be read as follows. There were 18 studies reviewed on the effects on the teacher’s length of schooling at the primary level and 8 studies at the secondary level. Of these studies, 9 primary and 5 secondary studies found that the total number of years of schooling the teacher possessed was a significant factor in student achievement, once again showing the mixed nature of findings in such complex studies.

**Teacher and Pedagogical Attributes Affecting Student Achievement**

(Adapted from Fuller and Clarke, 1994)

<table>
<thead>
<tr>
<th>Factors Studied</th>
<th>Number of Significant Effects with Total Number of Analyses</th>
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<tbody>
<tr>
<td><strong>Teacher Attributes</strong></td>
<td>Primary</td>
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<td>1. Teacher’s length of education</td>
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<td>Tertiary or teacher college</td>
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<td>2. In-service teacher training</td>
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<td>3. Teacher gender (female)</td>
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<tr>
<td>4. Teacher subject knowledge or language proficiency</td>
<td>4:4</td>
</tr>
<tr>
<td>5. Teacher experience</td>
<td>13:23</td>
</tr>
<tr>
<td>6. Teacher salary level</td>
<td>4:11</td>
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<tr>
<td>7. Teacher social class</td>
<td>7:10</td>
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<tr>
<td><strong>Classroom pedagogy and organization</strong></td>
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<tr>
<td>8. Instructional time</td>
<td>15:17</td>
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<tr>
<td>9. Active, complex pedagogy</td>
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<td>In-class written exercises</td>
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<tr>
<td>10. Frequent monitoring of pupil performance</td>
<td>3:4</td>
</tr>
<tr>
<td>11. Class preparation time</td>
<td>5:8</td>
</tr>
<tr>
<td>12. Frequency of homework</td>
<td>9:11</td>
</tr>
<tr>
<td>13. Teacher efficacy</td>
<td>1:1</td>
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<tr>
<td>14. Cooperative-learning task structure</td>
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</tbody>
</table>

These studies from all over the developing world indicate how difficult it is to isolate one variable in doing social science research in the school and classroom, but they do provide insights into a range of teacher attributes and classroom pedagogies that appear to affect student learning.

My own research (Kraft, 1996), strongly confirmed several of the factors which hinder progress in student achievement in Latin America: On instructional time, I found that children often received little more than 2 hours of instruction per day, and only 250 hours per year, due to late daily starts, regular holidays (often 1-2 days a week), no substitutes when
teachers were sick, letting school out early, long recess periods, and continuous interruptions of the school day for announcements, roll taking and other activities. Although most teachers had received workshops on continuous student monitoring, in many classrooms academic monitoring only occurred at the end of the month or quarter, not on the hourly, daily basis needed in good early primary classrooms. Due to national pressures, teachers tended to “cover” the curriculum, whether there was any evidence that the students were learning the material or not. Teachers at neither the primary nor secondary level were given time during the school day to prepare their lessons, and most teachers taught 2 or even 3 shifts (turnos), often in two or more different schools. Even when homework was assigned, teachers had little time or incentive to grade any homework which may have been given. Unlike the New Unitary Schools of Guatemala which I observed in (1998), teachers in the schools I studied, seldom received any credit for their writing of teacher’s guides, textbooks, or student workbooks, and were generally seen as powerless and without any honor or prestige in the society.

3. In-Service Teacher Training:

Perhaps even more important than a reform of pre-service teacher education is that of reforming the in-service system. Since many of the topics covered in the previous section under pre-service programs also apply to in-service, I will not go into as much detail here, but rather concentrate on a few key issues. A critical reason for a concentration on in-service education is the fact that, despite rapid growth in school populations, the majority of teachers now in the schools throughout the developing world, will continue to be a large majority of teachers for at least the next one to two decades.

4. Continuous Professional Development:

Avalos (2004) in her important paper on the keys to forming good teachers, points to the need for teachers to “construct” a conceptual base in order to develop an appropriate repertoire of teaching behaviors. She rightly points out that while this process begins during pre-service training, teachers remain with a level of insecurity during their first 2-3 years of teaching, and that the process of becoming an expert teacher continues on throughout one’s professional life. She goes on to refer to the need for an induction period. During this time new teachers are assigned mentors, observe classes, participate in ongoing training, and prepare portfolios as part of their formative evaluation. While still in use in most of the world, “cascade” models of in-service training have left much to be desired. By the time of the third iteration of a particular training, the quality of the workshops tends to fall off dramatically. In fact, there is no evidence that short, one-time trainings, with no follow-up do anything to improve teaching or student learning. Teachers-Training-Teachers (TTT) models have proven much more successful, particularly when “teacher circles” are formed and meet on a regular basis within schools or between neighboring schools. Much of the success of the old secondary Normal Schools and more recently of the New School movement in Latin America (Craig, et.al, 1998), has been their encouraging teachers of a grade level within a larger school, or multi-grade teachers in nearby schools, to meet every 2-4 weeks to share challenging teaching-learning issues, discuss pedagogical methods, design new instructional materials, and teach and learn from each other. Well trained clinical supervisors or school directors (not traditional inspectors) can facilitate this process.
G. The Teaching Profession-Exemplary Programs:

One of the most interesting examples of a developing nation with high student achievement and dedicated teachers is that of Cuba. In addition to the equality of opportunity offered in the society, it is likely that the major reason Cuban children succeed so well on tests, compared to the rest of the region, are the teachers themselves. Gasperini (2000) highlights a range of issues involving teachers beyond their comparatively high status in the society. Another factor is the lifelong training in which all teachers are involved, with the emphasis of that training being to improve classroom practice, not the memorization of theory, so dominant in much of the rest of the world. Pre- and in-service education are both school-based, rather than normal school or university-based. Teacher trainers must have 6-7 years of experience at the level at which he or she intends to prepare teachers, unlike the large number of trainers in other countries, who have taught secondary school and are training primary teachers, or university professors who have never set foot in a K-12 classroom.

While many countries in the world proclaim that they encourage local adaptations of curriculum, they too often have a nationally standardized curriculum, to which teachers are held accountable. Many countries have developed Redes de Capacitación or Círculos de Maestros, and in the cases of the Escuela Nueva and related experiments in the region, these appear to function well. The Cuban emphasis on teamwork, exchanges of experience, discussion of teaching methods, and adapting curricula to local needs appears to be deeply embedded within the Cuban educational system, and not just within a few experimental programs, as tends to be true of much of the rest of Latin America or the world. Gasperini, (2000, p. 5-6) concludes that the Cuban education system is”

…characterized by sustained and high levels of investment in education; consistent policy environment and political will in support of education for all; quality basic education, including early childhood education and student health initiatives, literacy adult and non-formal education programs; universal primary access to primary and secondary school; ….highly professional, well-trained teachers of high status; ongoing professional development of teachers; low-cost instructional materials of high quality; creativity on the part of local educators in adapting and developing instructional materials; system-wide evaluation solidarity within schools and classrooms; competition among schools and classrooms; significant community participation in school management; compensatory schemes for disadvantaged and rural children; clear connections between school and work and an emphasis on education for social cohesion.

H. School Variables and Working Conditions

1. School Quality:

There is research evidence, from many countries in the world, that while certain teacher variables can and do make an important difference in student achievement, that there is also a correlation between student success in the classroom and the quality of the school that children attend. This is of particular importance throughout most of the developing world, where the children of middle and upper class families almost exclusively attend private schools. These institutions, particularly expensive ones, generally have better educated teachers, better equipped facilities, and students with better educated and wealthier parents. It is also true that many lower-middle class, working families, withdraw their children from
public schools, almost immediately upon saving enough money to do so. In Latin America, the Catholic Church also enters into the equation through its provision of low cost, high quality religious schools such as Fé y Alegria, in addition to higher cost, high quality schools run by many of its religious orders. Given the disparities of wealth and opportunity, the large majority of children in the world are left to attend underfunded, poorly equipped schools, with teachers, whose salaries are often insufficient to provide even the basic “basket of food” to feed their families.

2. Working Conditions:

While working conditions are a concern to teachers throughout the world, many teachers, particularly in the poor rural and urban areas of world, face almost impossible situations. Class sizes in the cities are too often 50-90 young people in the secondary schools, with primary grades of 50 or more, making teaching in a creative, active, reflective manner nearly impossible. Broken desks, chairs and windows, outdated laboratories and lack of experimental equipment or replaceable chemicals, locked libraries with outdated books, no funds for paper, pencils, or magic markers, limited sanitary facilities, small or non-existent sports fields, infrequent electricity, lack of appropriate school heating or cooling, and limited or no maintenance budgets, afflict public schools throughout the region. Many teachers are forced to teach multi-grade classes of up to 50 or more students, with little or no training in how to do so, while most Normal School and University teacher training programs contain little more than one course on teaching in multi-grade classrooms, despite the proven success of some models, such as that of the Escuela Nueva of Colombia (Schiefelbein, 1991) and the Escuela Nueva Unitaria in Guatemala (Kraft, 1997).

3. School and Management Factors:

Fuller and Clarke’s (1994) study pointed to several school and management factors that appear to have a significant effect on student achievement throughout the developing world. Since most countries in the region spend comparatively little per pupil, the effects of school spending on student achievement remain mixed. School inputs such as textbooks (at least one per two students) supplementary readers, exercise books and school libraries have been found in many studies to have a positive effect. This is in keeping with the findings of numerous studies in Latin America, Africa and other “phonetic” language countries, that while children appear quite capable of “decoding” phonetic texts, millions of children and young people (estimates vary from 30-70%) do not comprehend what they are reading.

3. Training of Trainers:

One of the difficulties facing many countries in the region is the lack of a Trainer of Trainers system, to provide specialized advanced degrees in for future teachers in tertiary normal schools, pedagogical universities, or departments of education within universities. While in North America, there are numerous advanced degree programs in almost every area of education, these are lacking in much of the rest of the world. A Masters or Ph.D. in a discipline might prepare a person to teach or do research at a university, but may have little or nothing to do with the pedagogy of teaching reading, science, mathematics or the social sciences.
4. Training in Special Education:

While working on a recent project in a Latin American country, I asked how many special needs children there were in the country, and was given the number of 285. With over 1.5 million children in school in a very poor country and with the fact that in the United States, the estimates of special needs children range from 8-12% of the population, it was obvious that this particular country defined special needs as only those children with major physical handicapping conditions, generally the blind, hearing impaired, and children in wheel chairs. Since a large percentage of that nation’s children are undernourished and a majority of children do not complete grade 6 in primary school, it is obvious that there are tens of thousands of children yet unidentified as in need of special assistance in the schools. Several Latin American countries, including Costa Rica and Chile, have done an excellent job in identifying students with special needs, and many countries have set up special schools for those with major physical or mental handicaps. While most of the region has adopted a “mainstreaming,” approach, in which special needs children are placed in regular classrooms, it is also true that few teachers feel sufficiently trained to identify learning disabilities, provide assistance to children with special needs, or find sufficient instructional materials or professional assistance of specialists. On top of these issues, many Latin American teachers are faced with large classes, where finding the time to meet special needs of individual children is even more problematic.

5. Bilingual/Bicultural Programs:

While many countries with large indigenous or other minority populations give lip-service today to preserving and promoting cultures and languages, most of the world, has a poor track record when it comes to education for its cultural and linguistic minority. Insufficient numbers of indigenous or minority teachers are being prepared, and many teacher education programs contain little in the way of course work or experiences to train teachers for working in these communities. One of the most successful programs in the world today is the Breakthrough to Literacy program started in South Africa, but now forming the basis for reading and writing and both mother tongue and the national languages for countries all over Africa. Sampa (2005) report gains of over 700% in one year in mother tongue reading and writing, and evidence that children in grade one children in the new Primary Reading Programme are surpassing grade five children in both mother tongue and national language. It is hoped that the Centers for Excellence in Teacher Training programs now being developed in countries throughout the world will have similar success in promoting programs to improve comprehension among children from both national and minority language speaking homes.

IV. Continuing Tensions in Teacher Education Internationally

Much more could be said about teacher training in both Indonesia and internationally, but we conclude this brief analysis with a comparative table that indicates the tensions that have and likely will continue to exist in the field. Teacher Education is not a precise science, but we have learned some critical things about what seems to work better, and what appear to be appropriate mitigation measures.

<table>
<thead>
<tr>
<th>Tension, Risks, Concerns</th>
<th>Mitigation Measures</th>
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<tbody>
<tr>
<td>Low teaching salaries make it difficult to attract higher quality teacher candidates.</td>
<td>Nations with sufficient wealth can double or triple salaries. Poor nations must, at least,</td>
</tr>
<tr>
<td><strong>Problem</strong></td>
<td><strong>Solution</strong></td>
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<tr>
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<tr>
<td>Many secondary graduation or university entrance examinations lack validity and reliability in selecting students for the teaching profession.</td>
<td>Provide a salary sufficient to support family of four.</td>
</tr>
<tr>
<td>Future teachers from poor families have difficulty affording teacher training colleges or universities.</td>
<td>Multiple measures, including academic qualifications, experiences working with children, observation in schools, and interviews should be part of the process.</td>
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<tr>
<td>It is hard to attract teachers from urban settings to go to remote, rural areas.</td>
<td>Scholarships for future teachers from poor families can attract quality teachers, particularly to rural and isolated communities.</td>
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<tr>
<td>Secondary education level teacher training has been upgraded to 2-3 year diplomas or 4 year university degrees, not always available.</td>
<td>Through distance education, credit for in-service work, and recognition of prior learning, teachers can be upgraded.</td>
</tr>
<tr>
<td>Young women in traditional societies are not permitted to leave home to attend Teacher Training Colleges (TTC)s or Universities.</td>
<td>Mobile Teacher Training Unit (MTTU) can go to the villages and distance learning can overcome this cultural barrier.</td>
</tr>
<tr>
<td>General teaching pedagogy tends to dominate many traditional teacher training programs.</td>
<td>As nations move from secondary level to tertiary diplomas or degrees, a proper balance must be struck between general pedagogy, subject and age specific pedagogy and academic course work.</td>
</tr>
<tr>
<td>Teacher education accreditation standards either don’t exist or are not enforced</td>
<td>Many nations are now putting Teacher Education standards in place, but the key remains their enforcement.</td>
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<tr>
<td>Teacher Education accreditation standards are not closely related to subject-matter standards.</td>
<td>Subject matter standards by grade level should be developed prior to or in conjunction with accreditation and teacher standards.</td>
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<tr>
<td>Field experiences during pre-service teacher training are often limited or non-existent.</td>
<td>Education courses involve school-based practical work and/or research, in designated professional development or laboratory schools.</td>
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<tr>
<td>Future teachers receive limited student teaching time, occasionally as short as one week, often with little supervision.</td>
<td>A minimum of 12-16 weeks of student teaching is required of all teachers, supervised by university and/or school personnel.</td>
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<tr>
<td>The first years of a teacher’s career are critical to their long-term success.</td>
<td>Many nations are now including an induction year and a 2-3 year probationary period.</td>
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<tr>
<td>The academic background and training of teachers, particularly those at the elementary level is low.</td>
<td>Academic course work can be strengthened both during pre-service programs and as part of continuing education of teachers.</td>
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<tr>
<td>There is a lack of screening devices to assure that teachers have at least mastered the subject matter they are teaching.</td>
<td>Academic and pedagogical examinations can be put in place to assure the intellectual quality of teachers.</td>
</tr>
<tr>
<td>When teachers are part of the civil service, they often receive “permanent” status on initial employment.</td>
<td>The teaching service should be separated from the general civil service and an induction year or 2-3 year probationary period should be part</td>
</tr>
<tr>
<td>University based education instructors often have little or no experience teaching in the schools.</td>
<td>Require that all members of education faculties have experience teaching the subject and age level for which they are preparing teachers.</td>
</tr>
<tr>
<td>University course work for teachers tends to be theoretical in nature.</td>
<td>Education courses, in particular, and academic courses for teachers, should contain field-based observation, assisting, tutoring, teaching or research experiences.</td>
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<tr>
<td>New teachers have little or no assistance in their early years of teaching.</td>
<td>Principals and supervisors can be trained in clinical supervision to assist teachers.</td>
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<td>National curricular standards may conflict with local autonomy now found in many countries.</td>
<td>National standards can be written to include some local variation in teacher or student standards.</td>
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<td>The emphasis on active learning may negatively affect student achievement.</td>
<td>Assure that it is not “activity for the sake of activity,” but is tied closely to student achievement.</td>
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<tr>
<td>“Cultural Press” on the part of students and teachers appears to be one of the major causes in high student achievement.</td>
<td>All teachers are trained to have high expectations of students, and teachers are monitored to assure high standards.</td>
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<tr>
<td>Classroom instruction remains teacher centered and rote learning oriented.</td>
<td>Instructional materials and continuous professional development are needed to promote higher order thinking skills, creativity, and personal decision-making.</td>
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<td>Summative (often high stakes) assessments still dominate many educational systems, whether weekly, monthly, semester or end of year.</td>
<td>Continuous assessment can be tied into pre-service training, instructional materials and continuous professional development.</td>
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<tr>
<td>Supervision and monitoring are often conducted in a pro-forma, checklist manner.</td>
<td>Clinical supervision, conducted by well-trained supervisors, concentrating on academic achievement, can replace often meaningless checklists.</td>
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<tr>
<td>Few incentives are in place to promote continuous professional development of teachers, and courses too often are bureaucratic in nature.</td>
<td>Regular continuous professional development courses and activities can be required, and can concentrate on factors shown to improve teaching and learning.</td>
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<tr>
<td>Centralized bureaucratic training often dominates, and teachers and principals are seldom involved in continuous professional development.</td>
<td>Teachers Training Teachers (TTT) is the most powerful change model, and involves regular, small group interchanges of ideas.</td>
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<tr>
<td>Time in the profession is often the only financial incentive for teachers.</td>
<td>Professional upgrading, achievement of students in classroom, awards, publication of instructional materials and other incentives can lead to higher salaries.</td>
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<tr>
<td>The removal of failing teachers is extremely difficult.</td>
<td>Through union negotiated contracts, clear procedures for removing inadequate teachers and be put in place.</td>
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</table>
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Figure 1. Effect of Teachers on Student Performance

The effect of teachers accumulates: 4th graders of all abilities who have 3 years of effective teachers in a row for the 5th, 6th, and 7th grade will pass a 7th-grade math test.

Graph adapted from page 9 of “The Real Value of Teachers: Using New Information About Teacher Effectiveness to Close the Achievement Gap” by Kevin Carey, in *Thinking K–16*, 3(2). Copyright © 2004 The Education Trust.
This study began as an update of promising practices in teacher education programs that have been particularly successful in enhancing student learning in their own context. Along the way of undertaking case studies in Bangladesh, Botswana, Guatemala, Namibia, and Pakistan, and collecting other research on promising practices, we expanded the study to include several related topics, including the impact of teacher education on children’s learning; effective teaching; trends in teacher development from around the world; recruitment and retention of teachers; incentives and evaluation, supervision, and management, including cost-related issues.

The intervention and program ideas suggested in this report are intended to provide the project manager or planning official with a range of alternatives and guiding questions to discuss with various in-country stakeholders. Questions of what is feasible in the short and mid-term, and what plans should be worked towards over the next ten to fifteen years for longer-term plans need to be part of this discussion. Some of the suggested ideas are drawn from the case studies. We do not suggest that these programs are ideal in every way, but they do provide practical guidelines to shape good practice elsewhere. Other suggested ideas come from additional research literature. The following are select key findings and recommendations.

**Teacher Education Can Make a Difference to Student Achievement**

Teacher education programs can make a difference to student achievement depending on the type of education program and support that is put in place. Specific factors such as the years of teacher training (initial and inservice), the teacher’s verbal fluency, subject matter knowledge, having books and materials and knowing how to use them, teacher expectation of pupil performance, time spent on classroom preparation, and frequent monitoring of student progress are all key factors identified in some key research studies that have a positive bearing on the quality of teachers’ performance and, consequently, student achievement. Many of these factors were confirmed by the case studies.

**Teachers Need to Be Actively Involved in the Change Process**

When teachers are actively involved and empowered in the reform of their own schools, curriculum, pedagogy, and classrooms, even those with minimal levels of formal education and training are capable of dramatically changing their teaching behavior, the classroom environment, and improving the achievement of their students.
Conversely, when teachers are ignored, or when reforms come from above or are not connected to the daily realities of the classroom and local environment, even the most expensive and well designed interventions are almost guaranteed to fail. Our review of the literature and case studies confirm that when teachers are involved in making decisions about changes that affect them, enjoy being around children, have the skills to impart appropriate knowledge and manage their classrooms, and understand their role in the broader community, they usually are highly motivated and their students' achievement tends to rise.

**Teacher Development Is About Ongoing Professional Growth and Support**

From the time teachers begin any initial preparation or teaching, provision needs to be made for ongoing development of their subject matter knowledge; concrete skills to teach, observe, assess, and reflect; incentives; and career growth. There also needs to be linkages with other teachers and supervisors to help them solve problems and support each other through discussion, modeling and coaching, and involvement with other aspects of school and educational change. Isolation and lack of communication between all players needs to be reduced. Ministries of education and regional office staff have a responsibility to provide sufficient teaching and learning materials to support the curriculum, adequate facilities, and ongoing support for the issues that teachers face.

**Teacher Development Is a Process Along a Continuum of Learning**

Teacher development is a process, not an event. It involves change over time and is achieved in stages. The stages are related to teachers' experience gained in instructional and management practice over their career. The stages are also related to the degree of services and support a country's level of economic and political development allows it to provide.

Strategies must begin at the teacher level and be aimed at helping each teacher facilitate change in the classroom. Just as the success of each school is the key to overall quality improvement in the education system, the success of teacher development within the school must be aimed at the success of each teacher to help children learn.

**Alternative Teacher Education Programs Should Be Considered**

There are a variety of ways to prepare and support teachers in a variety of environments. Initial preparation of teachers varies greatly across
countries. Where they exist, programs have worked well when they have ranged from fifteen days as in the BRAC schools in Bangladesh, twenty-five days in the rural community schools in Egypt, two-year programs in Botswana, three years in Namibia, to the five-year programs as found in some U.S. institutions. Success depends on how the courses are structured and what support accompanies them. Practical training, based on the realities of the classroom and ongoing on-the-job support, is the critical factor in any successful teacher education program. Teachers who have shorter initial programs tend to require more concentrated follow-up while on the job. Where there is an issue with getting females trained in restricted social regions, mobile teacher training has proved helpful. Distance education, when carefully designed for large numbers of students, appears to be significantly less expensive than traditional residential programs in producing "certified" teachers. Alternative programs such as shorter school-based programs with ongoing mentoring and support should be considered, particularly in education systems with shortages of trained teachers.

**It Is Important to Create Conditions that Lead to Sustainability**

Sustainability of a teacher development program is strengthened where there is long-term involvement by stakeholders, sufficient institutional capacity, appropriate incentives and rewards, political stability and commitment, and effective phasing out of outside donor resources.

**Recommendations**

Fundamental changes in the following three areas are required if the quality of teachers and teaching is to be significantly improved. Some key recommendations identified from the study are:

1. **System Support**
   - Establish commitment in the form of vision, policies, plans, and actions for long-term professional development of teachers. Some crisis management may be needed in the short term.
   - Delegate to the school the authority, flexibility, and responsibility to develop relevant programs and school schedules to establish this long-term professional development commitment.
   - Define the rights and responsibilities of the various administrative groups within the education system to clarify issues of needed legislation, infrastructure, functions, and communication.
   - Require school supervisors to inform teachers and head teachers of promising teaching practices, and assist staff in trying these out.
   - Assist schools to provide necessary teaching resources to achieve instructional goals.
- Allow freedom of professional association and some form of collective bargaining consistent with labor legislation; involve representatives of these associations in reform discussions, and establish arbitration procedures.

- Develop human resource development strategies that are long-term and ongoing, depend heavily on school-based inservice programs, and link training and upgrading to a career-path structure.

- Hire committed teachers and provide adequate training and support to enable them to do their job. It is preferable to hire teachers with at least nine years of general education (the number is not key, just the need for more general education) and with some teaching training.

- Provide a range of incentives for different stages of teachers’ careers to attract suitable candidates to teaching, establish job satisfaction, and improve instructional practice. Incentives can be direct monetary benefits (e.g., teacher salary, allowances, and fringe benefits), indirect monetary benefits (e.g., professional training, teacher guides, textbooks, instructional supervision, subsidized housing, food, and transportation), or nonmonetary benefits (e.g., professional status in the community, location of teaching position, and recognition of performance). They must match the needs of teachers if they are to be true incentives. Thus, different incentives are important at different stages of a teacher’s career.

2. *Ongoing Professional Development—The Early Years*

- Provide focused instruction for new teachers. Beginning teachers need initial preparation in their subject matter, fluency in the language of instruction, knowledge of how to use instructional materials, and some basic classroom management and reflection skills. Most of these skills are best learned through on-the-job practice with coaching, which can be done through a traditional preservice program with substantial supervised practice teaching, or with close supervision and ongoing inservice training while on the job.

- Consider a range of alternative teacher preparation programs suitable to or adapted to local needs and constraints. Programs such as shorter school-based initiatives with ongoing mentoring and support should be considered, particularly in education systems with a great shortage of trained teachers.

- Establish an appropriate system of standards accreditation to match the preparation program so that all teachers can work towards both high standards and the same professional status.

- Require teacher education faculty to be active in classroom and school research, model good practices in their own teaching,
impair clear subject pedagogies, have a clear concept of how adults and children learn, and take time to reflect with students about teaching practice.

- Establish induction programs. These are essential to guide and support beginning teachers in their first few years of teaching, help develop sound teaching practices, and retain teachers.

3. Ongoing Professional Development—The Years After Initial Preparation

- Broaden the concept of inservice programs and support to mean a growth continuum of ongoing, participatory learning that is closely tied to the realities of classroom needs.

- Focus inservice programs on specific training for subject knowledge, pedagogy, and classroom management that is appropriate to the teacher’s current needs. Ongoing guidance and support, the sharing of ideas and concerns among teachers, the support of the head teacher, and obtaining sufficient release time to participate in training are some of the key elements these programs should focus on.

- Extend the evaluation of teacher education programs beyond informing facilitators and administrators of the modes of presentation, relevance, adequacy of facilities and instructors, etc. The evaluation must also investigate whether attitudes and practices of participants have actually changed for the better and whether these changes are manifest in classroom and school practices.

- Aim classroom supervision by inspectorate supervisors, head teachers, and peers at improving teacher performance in the classroom. An effective teacher is able to discern from among alternatives what enhances student learning and what does not, and works to that end of raising student achievement. Teacher performance evaluations should help teachers make a better learning environment for students.
The Professional Development, Characteristics and Pedagogy of Effective Teachers on Student Learning.

Abstract of Presentation by Dr. Richard Kraft

The presentation attempts to look at the research on a range of topics concerning attracting and retaining good candidates for pre-service teacher education, the type of training they are given; the role of theory and practice; and screens about who enters the teaching profession. In addition, it looks at successful in-service training or Continuous Professional Development and their effects on student learning. Details on much of the background of the presentation can be found in the two documents included in the materials sent to the conference participants. The presentation itself will concentrate on several successful models from throughout the world.