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Principles and general objectives of education

In 1994, the National Executive Council assigned four national objectives to the Department of Education as follows:

- to develop an education system which will meet the needs of Papua New Guinea and its people and which will provide for the return of children to the village community, to seek formal employment or to benefit from further education and training;
- to provide basic schooling for all children;
- to help people understand the changes that are occurring in the contemporary society through the provision of non-formal education and literacy programmes;
- to identify the needs for development of manpower in the public and private sectors, and to provide appropriate higher education, development and training programmes.

Education must provide for citizens who:

- will have a strong moral value system which places emphasis on personal integrity, the equality of all members of society, and the importance and relevance of traditional values in modern life;
- are committed in their own personal development, and view education as a continuing lifelong process;
- are invested with productive work ethic and realization of the value of both rural and urban community development activities in the context of national development;
- are prepared for the realities of life in most communities; and
- are capable of providing a basis for effective further training for human resources needs.

The Philosophy of Education of 1986 acknowledges the national goals and directive principles in the National Constitution of 1975, and it is based on integral human development: *integral* in the sense that all aspects of the person are important; *human* in the sense that social relationships are basic; and *development* in the sense that every individual has the potential to grow in knowledge, wisdom, understanding, skill and goodness. Education should equip the individual with knowledge, skills and attitudes for effective communication, numeracy, resource development, and social and spiritual development. The purpose of education is to enable individuals to live more useful and productive lives, participate in decision-making at all levels, relate responsibly to others, and develop spiritually.

The vision embedded in the National Education Plan 2005-2014, is integral human development achieved through an affordable education system that appreciates Christian and traditional values, and that prepares literate, skilled and healthy citizens

by concentrating on the growth and development of each individual's personal viability and character formation, while ensuring all can contribute to the peace and prosperity of the nation. (DoE, 2004).

Laws and other basic regulations concerning education

The main laws regulating the education system are: the **Education (Amendment) Act** of 1995, which established the new structure of the education system; the **Teaching Service (Amendment) Act** of 1995; the **Higher Education Act of 1983** (Consolidated to No. 45 of 2000), which provides for the establishment of the Commission for Higher Education and the Office of Higher Education; and the **Organic Law on Provincial and Local-level Governments** of 1995.

In addition, the **National Training Council Act** of 1991 established the National Training Council (NTC) which has wide powers including the development of training, the coordination of training institutions, the relevance and standards of training as well as access to training. The **Apprenticeship and Trade Testing Act** of 1986 provides for the training of apprentices and other skilled workers.

The Organic Law has had considerable implications for the education sector. It represents a major effort by the national government to redirect the focus of government towards districts and local communities. This underlies provision of services by all government departments, non-state education providers and donor agencies. The Organic Law determines the legal context, and the nature and scope of the powers, roles and responsibilities of the national Minister, the Department of Education, and other national bodies such as the National Education Board, the Teaching Service Commission and the Office for Higher Education. It also determines the nature and scope of the powers, roles and responsibilities of provincial and local-level governments (LLGs), and districts administrations. Schools receive funding and support from multiple channels: national, provincial, district and LLG levels, as well as from the private sector and the community through school fees.

There are no legal provisions regarding free or compulsory education, or any rigid age limits set. In principle, the (elementary) preparatory year is for children aged 6. Free and compulsory education is a very long-term goal of the Government. A number of Provincial Education Plans have included a recommended age of entry to elementary schools. The overarching goal of Universal Basic Education is that all children of school age must enrol in school, complete nine years of basic education and should have learnt skills, knowledge and values covered in the basic education curriculum. (DoE-NEC, 2009).

Administration and management of the education system

At the central level, the National Department of Education is responsible for school education and the preparation and implementation of education plans, including policy on core functions relating to curriculum, standards (inspections, guidance and examinations), teacher education, staff development and in-service training, and special education. The Secretary for Education coordinates the implementation of



education policies and ensures their implementation in the provinces and local-level Governments.

The mission of the **Department of Education** (DoE), as defined by the National Executive Council, is fivefold: to facilitate and promote the integral development of every individual; to develop and encourage an education system which satisfies the requirements of Papua New Guinea and its people; to establish, preserve and improve standards of education throughout Papua New Guinea; to make the benefits of such education available as widely as possible to all of the people; and to make education accessible to the poor and physically, mentally and socially handicapped as well as to those who are educationally disadvantaged. In addition, as determined by the Gender Equity in Education Policy (2003), DoE has also to improve educational opportunities for women and girls. (DoE, 2004).

The Department was restructured in April 1999 and at that time it comprised ten Divisions: Inspection and Guidance; **Curriculum Development and Assessment**; Technical and Vocational Education and Training (TVET); Teacher Education and Staff Development; General Education Services; National Capital District (NCD) Education Services; General Administration and Personnel; Finance and Budgeting; Policy, Research and Communications; and Planning, Facilitating and Monitoring.

The **Teaching Service Commission** is responsible for the appointment, salaries and conditions of employment of teachers. The **Ministry of Higher Education, Research, Science and Technology** oversees the sector and works with the **Commission for Higher Education** and the **Office of Higher Education**.

TVET provision is under several government bodies and agencies, e.g. the Department of Education (TVET Division); the **National Training Council**; the **National Apprenticeship and Trade Testing Board** (NATTB); and the Office of Higher Education. The NATTB is responsible for the facilitation of occupational standards for formal trades, non-trades and the informal sector, and the apprenticeship and traineeship programmes.

The **National Research Institute** (NRI) was established and mandated by the NRI Act 1993 (as amended) to conduct research and policy analysis in legal, political, economic, education, social and environmental, and population issues to influence public policy. The Institute is an independent government statutory authority and focuses on generating research information and providing expert advice on a range of policy considerations to its stakeholders, which include: the national government, provincial governments, donor agencies, the private sector, and civil society.

Provincial governments, through the **Provincial Division of Education**, are responsible for: planning for the establishment of elementary schools; planning for the flow of pupils for the lower to the upper primary level; budgeting for teacher emoluments, capital works, maintenance, rehabilitation of facilities and other operational costs at the secondary level; implementing approved teacher-training courses; appointing teachers and ensuring the cost-effective deployment of teachers; preparing provincial education plans. There are 20 provinces in the country.



Local-level Governments (LLG) and **District administrations** are responsible for: developing and producing curriculum materials for elementary education; providing support to communities for the development of elementary schools; contributing towards the construction and maintenance of school classrooms and facilities; assisting and facilitating cluster- and district-based staff development activities; assisting and developing central primary schools as resource centres for the cluster of elementary and feeder elementary schools; planning for the establishment of elementary and primary schools. There are about 284 LLGs and 89 districts in the country. Over 800 distinct languages are spoken in the country. Melanesian Pidgin is spoken widely throughout the country as a *lingua franca*, as is *Hiri-motu*, spoken in some parts of the south coast area. English, however, is the main language of instruction and is used in the administrative and commercial sectors. Community languages are used in the three-year elementary education programme.

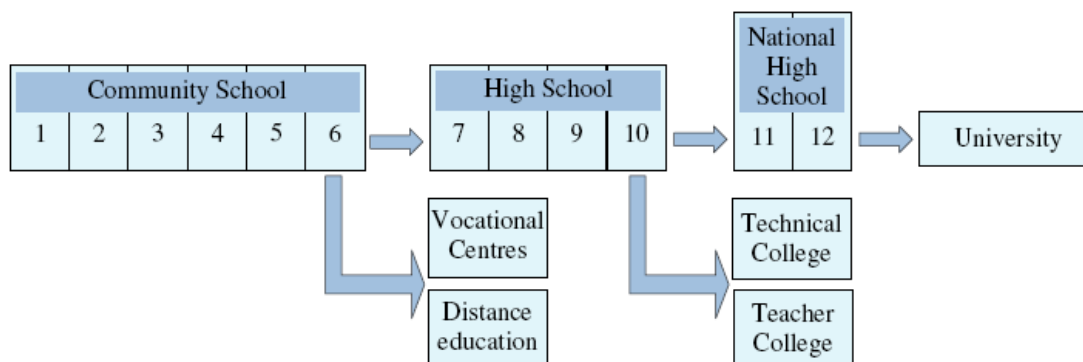
The **community (ward)** is responsible for: providing suitable land for the establishment of elementary schools, and constructing and maintaining school buildings; forming a **Board of Management (BOM)** in order to assist provincial and district planners and co-ordinate with primary school headteachers in the clustering of elementary schools; nominating elementary school teachers; developing and implementing annual plans for elementary and primary schools; forming a **Board of Governors (BOG)** that is required to organize the maintenance of secondary school classrooms and facilities; ensuring that LLG plans and budgets are consistent with provincial plans.

Inspectors are responsible for school-level supervision and teacher assessment at the elementary, primary and secondary levels. They monitor curriculum implementation for the approval of student certification, offer advice for institutional support and teachers' professional development, and carry out teacher appraisal for registration and promotion purposes. Guidance officers work in the secondary/high school system and support teachers in their counselling duties. They also assist in primary schools with counselling services.

The **National Literacy and Awareness Council (NLAC)** deliberates on policies and strategies for the development of literacy programmes. The National Literacy and Awareness Secretariat acts as the executive arm of the NLAC.

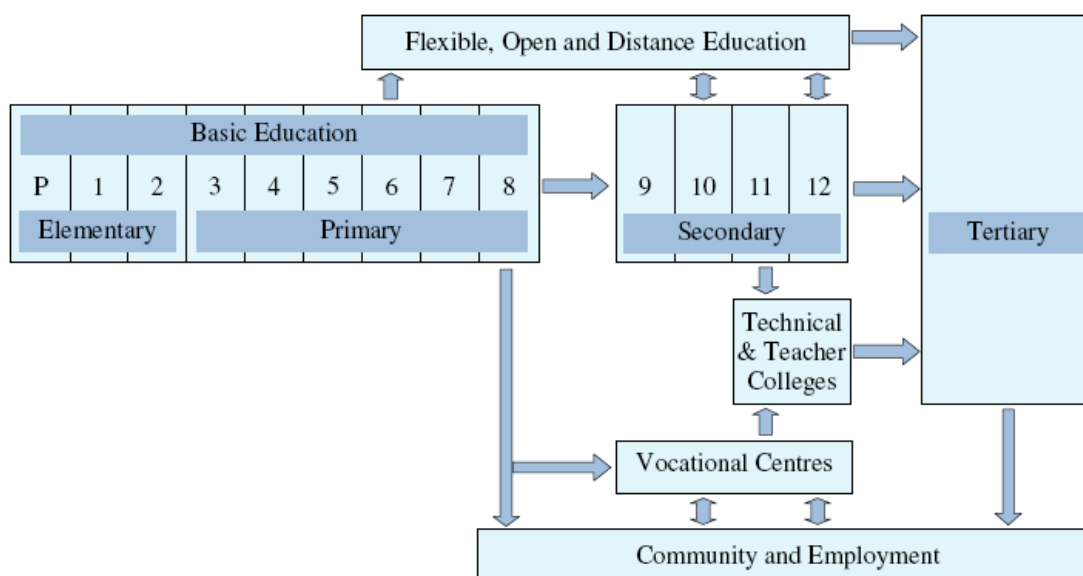
Structure and organization of the education system

Papua New Guinea: old structure of the education system



Source: Department of Education, 2009.

Papua New Guinea: new structure of the education system



Source: Department of Education, 2009.

Pre-school education

Preschool education (including elementary education) is not compulsory. The full-time programme involves one preparatory year—known as *Prep* or EP—followed by two years of elementary education, often referred to as Elementary 1 (E1) and Elementary 2 (E2) to distinguish them from grades 1 and 2 in the community schools. In principle, children should be 6 years old to enrol in EP and 7 years old to enrol in E1 (in 2006/07, 6-year-olds represented only 14.9% of the total enrolment in EP). Elementary education is considered as the first stage of the nine-year basic education programme.



Primary education

Primary education is the second stage of basic education and is not compulsory. According to the Education (Amendment) Act of 1995, the programme lasts six years, covering grades 3 to 8. Primary education is divided into lower (grades 3 to 5) and upper primary (grades 6 to 8). Pupils used to sit two examinations: the Primary Education Certificate Examination (PECE) at the end of grade 6, and the Certificate of Basic Education (COBE) examination at the end of grade 8. In principle the PECE has been phased out. The new structure has been progressively implemented since 1993 and the reforms were planned to be fully operational by the year 2004. The transition to the new system remains incomplete. (DoE-NEC, 2009).

Secondary education

According to the Education (Amendment) Act of 1995, secondary education lasts four years and is divided into two cycles: lower (grades 9 and 10) and upper secondary (grades 11 and 12). Students sit two examinations: the School Certificate Examination at the end of grade 10, and the Higher School Certificate Examination at the end of grade 12. Traditionally, vocational education has been a provincial responsibility. Admission to the vocational training centres is in principle for pupils who have successfully completed the basic education programme (grade 8). Technical colleges offer one-year Pre-employment Technical Training (PETT) courses to students who have completed lower secondary education. These courses are being replaced by a two-year Technical Training Certificate (TTC) programme. The Papua New Guinea Education Institute offers a three-year course for grade 10 graduates leading to the Certificate of Elementary Teaching.

Higher education

Post-secondary and higher education is provided at the University of Papua New Guinea (UPNG), the University of Technology, and a number of colleges and specialized training institutes. Primary teacher training colleges offer a three-year diploma course for grade 12 graduates. At the UPNG, courses leading to the award of a bachelor's degree normally take four years of study (five years in the case of medicine). A bachelor's degree with honours takes an additional year. The University of Technology awards a Bachelor of Technology degree after three to five years of study. Two-year certificate and three-year diploma programmes are also offered in a number of fields. The UNPG-Goroka (formerly the Goroka Teachers' College) offer a four-year course leading to the Bachelor of Education degree. A one-year postgraduate diploma in education is also offered.

The 2011 school year started on 7 February and is expected to end on 9 December. It consists of 40 weeks divided into four terms, including: one week devoted to the Certificate of Basic Education examinations (end of grade 8); two weeks for the School Certificate examinations (grade 7); two weeks for the Higher School Certificate examinations (grade 12); and five days off for national public holidays. In elementary and primary schools, the prescribed minimum amount of time to be spent on teaching and learning should be 1,650 minutes per week. (DoE-NEC, 2009).

The educational process

Section 27 of the Education (Amendment) Act of 1995 stipulated that the Minister of Education shall, after considering the advice given to him by Boards of Studies appointed by him for the purpose, and after consultation with Provincial Governments, determine the curriculum in all schools within the National Education System including: (a) curriculum content; (b) curriculum standards and examinations; (c) minimum age of entry; (d) number of hours of instruction on the curriculum; and (e) number of days teaching each year. The Minister shall declare by notice in the National Gazette those subjects of the community school curriculum which shall be nationally prescribed. A Provincial Government may pass a law empowering it to determine: (a) curriculum content; (b) curriculum standards and examinations; (c) number of hours of instruction; and (d) language of instruction, for any subject of the community school curriculum not declared to be nationally prescribed. A provincial law may make provision for the determination of all curriculum and associated matters in vocational centres, technical schools and village self-help schools.

The Education Sector Review of 1991 pointed out that the curriculum was largely irrelevant and did not meet the needs of local communities. Within the framework of the National Education Plan (NEP) released in 1995 and updated in 1999, a Curriculum Reform Implementation Project, funded through the Australian Agency for International Development (AusAID) programme, was initiated to strengthen the review of the curriculum. The new curriculum for lower and upper primary education was approved in October 1999 and its application started on an experimental basis.

A new outcomes-based curriculum (OBC) for basic education was introduced in 2005 that sets out clear learning outcomes for all subject areas by grade. Teachers are given the opportunity to organize their learning activities to achieve the prescribed learning outcomes. This curriculum requires a different, and more interactive, way of teaching though and not all teachers have yet acquired the skills and knowledge required. The quality of learning will, ultimately, be measured using a Curriculum Standard Monitoring Test. This has been successfully piloted for two years and the DoE has introduced the test nationwide at grades 5 and 7, the first of which were conducted in December 2008. (DoE-NEC, 2009).

The OBC identifies what students will demonstrate as a consequence of following the national syllabuses developed for the elementary preparatory year to grade 12. Each subject syllabus identifies a set of outcomes for each grade that students are expected to achieve. Each outcome is accompanied by a list of indicators that identify examples of the knowledge, skills, attitudes and values that students will need to demonstrate in order to achieve the learning outcome. Teachers will use the outcomes and indicators to write learning objectives when planning programmes and lessons. These objectives will identify the learning steps to be completed in order to achieve the learning outcomes.

The overall aim of the National Curriculum for Papua New Guinea acknowledges the national goals and directive principles enshrined in the National Constitution based on integral human development. This means that the curriculum

must aim to promote socialisation, participation, liberation and equality. Accordingly, the National Curriculum will help all students to become happy, healthy and useful members of their society. The curriculum will help students to develop mentally, socially, emotionally and spiritually so they can live fulfilling lives. It will encourage them to think sensibly for themselves and to respect the thoughts of others. It will also encourage students to develop as individual members of a community. They will learn to communicate with other people through written and spoken language, through mathematics, and through other ways such as pictures, music and movement. They will learn how to help develop and sustain Papua New Guinea's natural environment and its physical and human resources, for the benefit of all. The curriculum will prepare students who are more flexible for a changing world. It will prepare all students, not just a few. Papua New Guinea needs students who are effective communicators and numerate, and who are aware socially and spiritually. The country also wants students to be wise guardians of its resources and needs decision-makers and critical thinkers with competent problem solving skills. (DoE, 2003).

The National Curriculum principles are based on significant cultural, social and educational values and beliefs such as: (i) bilingual education: education in vernaculars and English; (ii) citizenship: roles, rights and responsibilities in society; (iii) law and order: good governance; and (iv) lifelong learning: applied learning. The National Curriculum is inclusive and designed to meet the needs of all students irrespective of their abilities, gender, geographic locations, cultural and language backgrounds, or their socio-economic backgrounds. The National Curriculum must be implemented by teachers in ways that are inclusive of all students at all levels of schooling. Much more can be achieved if parents, community leaders, churches and schools co-operate and communicate with each other. The National Curriculum should be relevant to the social, spiritual, and resource development needs of a community. This can be achieved by integrating teaching and learning situations that reflect the knowledge, skills, attitudes and spiritual values needed for integral human development. A relevant national curriculum will prepare students for productive community living; integrate academic and practical education, and will provide ways to paid and unpaid employment. (*Ibid.*).

The National Curriculum makes explicit the learning outcomes for each subject at each grade level and will help teachers to plan their teaching programs for multi-grade classes. A thematic approach is appropriate to use with multi-grade classes and requires the curriculum to be rearranged. Students of different grades can work side-by-side on similar themes, such as water, a feast, animals, and leadership. They will be learning at different levels of skills and understanding. Thematic teaching integrates subjects and reflects more closely the way students think. Integration is maximized when students appreciate the relationship between the body of knowledge introduced by a teacher, the application of that knowledge in everyday life and its underlying values. Whole language teaching is an important aspect of thematic approaches to teaching. The National Curriculum is organized into subjects at each level of schooling. It is, however, recognized, particularly at elementary and lower primary levels that generalist teachers will implement the curriculum using thematic and integrated approaches. These teachers will need to identify and organize the curriculum contents into themes that they have chosen for or with their classes. This means taking the syllabus documents for different subjects and reorganizing them to suit their chosen themes. A learning outcomes approach as used in the

National Curriculum should enable this to occur. It is essential that teachers ensure all learning outcomes are covered and the achievement of them is monitored. (*Ibid.*).

The National Curriculum is organized into five learning areas: culture and community; language; mathematics; personal development; and science. A learning area is a group of subjects with compatible knowledge, skills, and attitudes. All subjects from elementary to upper secondary are assigned to one of these learning areas. Some subjects draw upon knowledge, skills and attitudes from more than one learning area (e.g. environmental studies), but they have been placed in the learning area whose content is judged most similar. The table below shows the overall organization of learning areas and subjects for each level of schooling:

National Curriculum for Papua New Guinea: overall organization of learning areas and subjects

Learning area	Elementary	Lower Primary	Upper Primary	Lower Secondary	Upper Secondary
Culture and Community	Culture and Community Includes aspects of the following: Arts Community Living Environment Health Physical Education Design and Technology	Arts Community Living	Arts Social Science Making a Living	Arts Social Science Business Studies Applied Social Science Agriculture Design and Technology including modules such as home economics, practical skills, computing, rural technology, tourism, hospitality or each developed as full courses	Art Music Drama Applied Social Science Economics Politics/Civics Geography History Business studies Urban technology Applied technology Informational technology Rural technology Computing
Language	Vernacular Language	Vernacular Language English	English Vernacular Language	English including library Hiri Motu Tok Pisin Vernacular and other languages	Language and literature including library Japanese Bahasa Mandarin Chinese Hiri Motu Tok Pisin
Mathematics	Cultural Mathematics	Mathematics	Mathematics	Mathematics	Mathematics Extension (Maths A) Mathematics Core (Maths B) Life maths
Personal Development	Aspects of Personal Development are covered under Culture and Community	Health Physical education	Personal Development including health, PE, guidance and religious education.	Personal Development to include health, PE, guidance and religious education	Personal Development including civics
Science	Aspects of Science are covered under Culture and Community	Environmental Studies	Science	Science Environmental science Applied Science	Biology Chemistry Physics Applied Science

Source: Department of Education, 2003.

At elementary, lower primary and upper primary levels of schooling, some learning areas may also be a subject such as 'personal development'. However, most learning areas expand into separate subjects at higher levels of schooling. For instance, at the elementary level 'culture and community' is one subject with a



number of strands. At lower primary, this learning area contains two subjects, 'community living' and 'arts'. In lower secondary, this learning area contains six subjects: arts, social science, business studies, applied social science, agriculture, and design and technology including modules such as home economics, practical skills, computing, rural technology, tourism, and hospitality. At the elementary level, the curriculum content of the learning areas is based on local community input and needs. Teachers, trainers and trainees in consultation with the community will develop the curriculum content. This will enable students to achieve the learning outcomes specified in the national elementary syllabuses taking into consideration the unique context of each local community. At all levels of schooling the curriculum content should, as far as possible, reflect the particular needs and aspirations of a community. (DoE, 2003).

The process of assessment and reporting in schools should be continuous and based on the learning outcomes defined in the national subject syllabuses. The national syllabuses for all subjects identify learning outcomes that are relevant to individuals in their communities as well as nationally and internationally. These learning outcomes are written in terms that enable them to be demonstrated, assessed or measured. The learning outcomes will: help teachers assess and report students' achievements in relation to the learning outcome statements; allow student achievement of the outcomes to be described in consistent ways; help teachers to monitor student learning; and help teachers plan their future teaching programmes. Assessment and reporting procedures should provide systematic and continuous ways of collecting information about students' learning. Up to grade 7, assessment is school based and internal. From grades 8 to 12, teachers use a combination of internal and external assessment. Both internal and external assessments at elementary, primary and secondary level should reflect students' achievement of the learning outcomes described in the syllabuses. Assessment and reporting processes should be carried out consistently at the various levels of schooling in all provinces. The National Policy for Assessment and Reporting will ensure that schools continuously assess student achievements throughout their schooling. Assessment and reporting should be: compatible with the curriculum approaches at each level of schooling; integral to teaching activities; aligned with learning outcomes; and appropriate for different subjects. (*Ibid.*).

The Education Plan 2005-2014 stipulates that the basic education curriculum will be reviewed on a regular basis to ensure gender sensitivity and updated materials supplied to schools. School communities will be supported to develop locally relevant curriculum materials and programs based on the reformed curriculum. They will also be supported by the provision of basic literacy and numeracy courses. Oversight for these will be undertaken by the National Literacy and Awareness Secretariat and through institutions such as the vocational centres. In the post primary sector, the secondary curriculum will be revised to build on the reformed basic education curriculum. This will be completed by 2006. There will be much greater cooperation between curriculum developers in the vocational and secondary sectors to ensure that there is a greater skills component in the reformed secondary curriculum. A standards monitoring instrument has been developed for primary schools and will be modified to help the Department monitor standards at the secondary level. The vocational curriculum will be reviewed to reflect the need for one year courses. Technical and vocational courses will be modularized and accreditation will be available where



appropriate under a National Qualifications Framework. Linkages between local communities, private providers and secondary, vocational and technical schools will be encouraged and strengthened. This process will be completed by 2008. Teacher education will be reviewed on an ongoing basis and improved to ensure teachers are trained to teach the reformed curriculum. A national standards framework for teacher training will be established to provide quality and consistency across the teachers colleges. In-service training of teachers on an ongoing basis will support curriculum reform initiatives. (DoE, 2004).

However, “extensive consultations throughout the country indicated that there is an overwhelming dissatisfaction with the newly introduced OBC. Parents and teachers have revealed that the quality of learning and teaching has been greatly compromised by OBC. Students from grade 6 through to tertiary education level have difficulty in expressing themselves in the English language. The consultations observed that Elementary 1 and Elementary 2 teachers are under qualified. It was also revealed that teachers are currently overworked because of the demands imposed on them by the teaching methodology prescribed by OBC. It is imperative that OBC is immediately replaced with a curriculum that offers a balanced education, using English as the medium of instruction, starting in Elementary 1, as soon as possible.” (NSPT, 2009).

Pre-primary and elementary education

In the past, the provision of early childhood education has been left to the private sector. Although relatively small in number, programmes have been run by the international school system since the 1970s—and by non-governmental organizations since the 1980s—in the form of a one-year *tok ples priskul* programme. *Tok ples* schools ‘originally offered mainly initial literacy in the vernacular [language], but the curriculum of most of them was broadened to include numeracy and health skills. (Hoi & Wari, 1995, p.766).

Tok ples priskuls attracted large numbers of children. It was partly their success that led the Department of Education to introduce a three-year elementary school programme into the public school system in 1993. The three-year elementary education programme became part of the national education system with the amendment of the Education Act in 1995. The duration of a school day is four hours and the curriculum is adapted to the characteristics of the local environment. In terms of the National Education Plan 2005-2014, at 6 years of age all children begin their basic education in an elementary school in a language that they speak. For the next three years they develop the basis for sound literacy and numeracy skills, family and community values including discipline, personal health care, and respect for others. (DoE, 2004).

According to the National Curriculum Statement for Papua New Guinea, The aims of the elementary curriculum are to:

- enable pupils to continue developing an understanding of, respect for and identification with local cultural values and traditions;
- prepare pupils for entry into grade 3 in primary school;



- teach an integrated community-centred curriculum in a language that the pupils already speak with an introduction to oral English in the last part of elementary grade 2 (E2);
- equip pupils with knowledge, skills and attitudes for effective communication, resource development, social development and spiritual development to achieve integral human development;
- value skills education, building upon the skills and knowledge the students already have in their own language and culture, eventually transferring these skills into English;
- effectively engage communities in the life and activities of the school to ensure relevance, ownership of courses, and access by schools to community resources;
- provide a foundation for pupils' schooling in their vernacular (language);
- provide a firm foundation for lifelong education;
- encourage teachers to be creative and use the community and improvise with materials that are around them. (DoE, 2003).

The strength of early childhood education is its position within the community. The planning and organizational foundations focus strongly on the local community, which is actively involved in the selection process of teachers and in the development of the curriculum. Elementary schools are built by villagers using local materials and established by the districts and provinces, with the support of technical officers from the Department of Education. Communities informally monitor the activities of the school, the children and the teachers on a daily basis, while parents assist with field trips and voluntarily help out in the classroom. Furthermore, instruction is given in the mother tongue of the child and is aimed at developing literacy and numeracy skills appropriate to the elementary level. Elementary schools are organized around the primary schools that will accept their children into grade 3. These are known as clusters of schools.

Elementary schools differ from the established primary and secondary schools. The organization, management and matters relating to teachers require other kinds of solutions than simply applying existing practices, which have proven to have limited success. In addition, elementary schools are conceived as autonomous institutions, which are not a part of primary schools. They have their own headmaster, board and management. This is a further strength of the sector and an additional reason for resolving issues through means that are relevant to the community and educators.

Elementary school teachers are rather specialized. They are heavily involved in the development of the elementary curriculum which is made up of three components: mathematics, culture and community. The culture and community components take up 60% of the elementary curriculum time allocation and require understanding of the culture and the ability to use vernacular languages fluently to participate in village ceremonies and everyday community life, work co-operatively with others and express the aesthetics and morals of community life through stories, arts and crafts.

A vernacular language chosen by the community is the language of instruction. Orthographies have been developed in about 400 language groups. The reformed curriculum has replaced the Elementary Scope and Sequence with approved



new syllabuses and teacher guides for culture and community, cultural mathematics and language. Three teacher guides and an implementation support booklet for head teachers support these syllabuses. The reformed curriculum is inclusive and has taken account of the gender policy. The community calendar is an essential focus for the curriculum and teachers develop programmes with their school communities to ensure relevance. Elementary teachers use self-paced, in-service units that give them background knowledge and strategies to support their teaching.

An inspections system has been established with inspectors in each province. Ratings of teachers are carried out regionally and the communities are already involved in the teacher appraisal process. The trainers in each province support the work of the inspectors. (DoE, 2004).

The effectiveness of the elementary programme is difficult to assess. Early work in the 1980s, in relation to the *tok ples* programmes in the North Solomon's province, suggests that children who become literate in their vernacular language did better in the Primary Education Certificate Examination at the end of grade 6 than those who did not attend *priskul*. The elementary programme is a recent event and children are beginning to move into bridging English classes. Elementary schools should have little difficulty taking over the good work of the *tok ples priskul* movement.

In 1999, total enrolment in elementary schools was estimated at 130,191 children. In 1998, there were 2,696 teachers at the elementary level (of whom 1,137 were female) and the average pupil-teacher ratio at the national level was 29.4:1. (Department of Education, March 2000). According to estimates of the UNESCO Institute for Statistics, in 2003 there were 95,637 children enrolled in the preparatory year and the total number of teachers was 2,712. The gross enrolment ratio was estimated at 59%.

According to the Department of Education, in 2006/07 there were 2,851 government elementary schools with a total enrolment of 175,439 children; an additional 2,622 elementary schools with 155,274 children enrolled were administered by churches. As regards the (elementary preparatory) year, 6-year-olds represented 14.9% of the total enrolment; the percentage was 7.7% for 5-year-olds, 23.1% for 7-year-olds, 19.9% for 8-year-olds, 14.3% for 9-year-olds, and 20.1% for 10-year-olds and above. (DoE-NEC, 2009).

Primary education

The education reform programme focuses on access, equity, and quality in the provision of nine years of basic education from the preparatory year to grade 8. The previous education system had a 6–4–2 structure, with community schools offering grades 1-6 and secondary schools offering grades 7-10; upper secondary education (grades 11 and 12) was only offered by national high schools. In the new structure (3–6–2–2), the former grades 1 and 2 have been relocated to the elementary schools and grades 7 and 8 have been moved from high schools into the primary school structure, opening up the capacity of secondary schools to enrol students in grades 9-12 without having to increase the infrastructure.



The six-year primary education programme now covers grades 3 to 8. It is hoped that this will help to overcome the problem of high drop-out rates, particularly of girls after grade 6. In terms of the National Education Plan 2005-2014, at 9 years of age children continue their basic education in a primary school. After six years of primary education that begins with a bilingual programme, children have the skills to live happily and productively, contribute to their traditional communities and use English to understand basic social, scientific, technological, and personal concepts and value learning after grade 8. (DoE, 2004).

According to the National Curriculum Statement for Papua New Guinea, The aims of the primary curriculum are to:

- help students develop basic knowledge, skills and attitudes that they need for effective communication, resource development, social development and spiritual development;
- provide students with the knowledge, skills and attitudes that will enable them to continue to learn after grade 8;
- encourage students to regard learning as a lifelong education process;
- maintain communication in vernacular for students;
- assist students transfer their study skills and knowledge learned in vernacular to English;
- help students to communicate effectively in both written and oral English in all subjects and participate in a wider national and international community in English;
- help students express greater appreciation of their own culture and language;
- help students to acquire a set of basic life skills including humility and practical applications that they can use in their daily lives no matter where they live;
- encourage students to develop confidence, self esteem and a respect for others in order to pursue those opportunities that will improve their standard of living and their families;
- assist students to develop and demonstrate the ability to participate better in community affairs;
- enable students to be responsible citizens who are able to gain the necessary qualities and skills, in order to live happily and productively in the communities in which they choose to live and serve;
- help students to acquire greater skills and content in all subjects;
- enable students to understand and explain basic concepts about the world in which they live;
- ensure students become mathematically and scientifically literate in both the physical and social sciences in ways that are relevant to daily life;
- encourage teachers to use local resources that deal with important local and national issues;
- encourage teachers to be creative and improvise with materials that are around them. (DoE, 2003).

Reform targets for the primary education sector have been: a bridging programme into English in grades 3 and 4; the establishment of grades 7 and 8 in



primary schools; the development of teaching subjects in grades 6-8; a renewed emphasis on social, cultural, spiritual, moral and vocational education; a community orientation which emphasizes the skills that children need in order to contribute to the development of their own communities.

Community schools in the process of reform are designated as primary schools. Sometimes the term 'top-up' has been used. A 'top-up' school is a school that added higher grades to its structure. For example, a 'top-up' community school is a grades 1-6 community school which changes to a primary school by adding grades 7 and 8. Eventually this school passes grades 1 and 2 to nearby elementary schools thus becoming a primary school covering grades 3-8. During the transition period there will be other variations (i.e. lower primary schools covering grades 3-5), as provinces and districts will work out clusters to suit their situation.

The new curriculum for lower and upper primary education was approved in October 1999 and its application started on an experimental basis. Programmes are to be mainly thematic in lower primary and subject-based in upper primary.

A total of seven new outcomes-based lower primary syllabuses have been developed by the Curriculum Development and Assessment Division, e.g. language; arts; mathematics; environmental studies; health; physical education; and community living. The syllabuses which have been printed and distributed to all community and primary schools. They have been implemented in schools since the beginning of 2006. As regards upper primary, seven new outcomes-based syllabuses have been approved and distributed to schools (arts; language; science; social science; making a living; mathematics; and personal development).

The tables below show the suggested time allocation for each subject:

Lower primary education: suggested time allocation (in minutes per week)

Subject	Suggested weekly time allocation in each grade		
	III	IV	V
<u>Nationally prescribed subjects:</u>			
Language	570	450	405
Mathematics	210	210	210
Environmental studies	180	210	210
Health education	90	90	90
Physical education	105	135	150
Community living	150	180	210
Arts and crafts	150	150	150
<u>Other school time:</u>			
Religious instruction	60	60	60
Block time	60	90	90
Total minutes per week	1,575	1,575	1,575

Source: Department of Education, 2000.


Upper primary education: suggested time allocation (in minutes per week)

Subject	Suggested weekly time allocation in each grade		
	VI	VII	VIII
<u>Nationally prescribed subjects:</u>			
Language	180	180	180
Mathematics	180	180	180
Life skills	360	360	360
Personal development/Physical education	240	240	240
Science	180	180	180
Social science	180	180	180
Arts	180	180	180
Other school time:			
Religious instruction	60	60	60
Local courses	90	90	90
Total minutes per week:	1,650	1,650	1,650

Source: Department of Education, 2000.

Grades 7 and 8 students follow the same curriculum that has been adjusted to suit the new situation they are in. Grade 8 examinations have reduced the amount of instructional time. There are core and optional subjects for schools to choose from, as shown in the table below:

Grades 7 and 8 transition subjects: suggested time allocation (in minutes per week)

Core subjects	Options
English (240 min.)	<i>One of these:</i>
Library skills (40 min.)	
Mathematics (200 min.)	Agriculture (120–160 min.)
Science (200 min.)	Commerce (120–160 min.)
Technology (240 min.)	Religious instruction (120–160 min.)
Guidance (40 min.)	
	<i>Two from these:</i>
	Agriculture (80–160 min.)
	Commerce (80–160 min.)
	Expressive arts (80–160 min.)
	Physical education (80–160 min.)
	Religious instruction (80–160 min.)
	Additional English or library skills (80–160 min.)

Source: Department of Education, 2000.

Repetition is not allowed at any stage of the system except for exceptional reasons—usually health. Drop-out rates are considerably high. National examinations are administered by the Measurement Services Unit of the Curriculum Development Division. There are two examinations that pupils used to sit: the Primary Education Certificate Examination (PECE) at the end of grade 6, and the Certificate of Basic Education (COBE) examination at the end of grade 8.

The PECE, introduced in 1982, was meant for community-school pupils and was mainly used to select pupils for grade 7. This examination consisted of three papers: written expression, basic skills, and combined subjects. In principle the PECE has been phased out as a result of the introduction of grades 7 and 8 in primary schools. The COBE examination was approved in 1995. It is a skill-based examination and it is mainly used to select pupils for grade 9. This examination consists of four papers: written expression; literacy skills; numeracy skills; and general skills.

In 1997, the average transition rate to grade 7 was 67.8% (37.5% in 1987) and the transition rate to grade 9 was 79%. In 1998, total primary school enrolment (grades 1-8) amounted to 568,164 pupils. There were 16,082 teachers (of whom 6,018 were female) and the average pupil-teacher ratio at the national level was 34.9:1. (Department of Education, March 2000).



“Gender equality in education remains a challenge for the country. In 2003, girls occupied between 44% and 46% of school places across all provinces in the basic education cycle, dropping to an average of 40% by grade 10 and 35% by grades 11 and 12. Female teachers accounted for 41% percent of staff, and female students accounted for about 42% of places at teacher training colleges. Between 1996 and 2003, the proportion of females in general education enrolments did not change significantly, and although the proportion of female teachers in basic education increased from 35 to 41 percent, it only increased marginally from 34 to 35 percent at the secondary level.” (ADB, AusAID & World Bank, 2007).

According to the Department of Education, in 2006 there were 1,629 government primary schools with a total enrolment of 324,189 pupils; an additional 1,726 primary schools were administered by churches and the total enrolment was 318,920 pupils. In 2006/07, the gross enrolment ratio was estimated at 78.3% for grades 1-6, at 71.4% for preparatory year to grade 8, and at 62.8% for grades 3-8. The net enrolment ratio was estimated at 44.6% for grades 1-6 (43.4% for girls), at 52.9% preparatory year to grade 8 (51.4% for girls), and at 68.9% for grades 3-8 (66.1% for girls). An estimated 674,169 children aged 6-14 years were out of school. (DoE-NEC, 2009). Only 53% of children who enrolled in grade 1 in 1998 completed grade 6 in 2003. (DoE, 2004).

In 2007, there were 20,340 primary school teachers (grades 1-7/8), of whom 9,264 were women, and the average pupil/teacher ratio was 33.2:1. (DoE, May 2008).

Secondary education

Secondary education lasts four years and is divided into two cycles: lower (grades 9 and 10) and upper secondary (grades 11 and 12). Students sit two examinations: the School Certificate Examination at the end of grade 10, and the Higher School Certificate Examination at the end of grade 12. In terms of the National Education Plan 2005-2014, students in grades 9 to 12 achieve their individual potential to lead productive lives as members of the local, national and international community and partake of further quality education and training, having undertaken a broad range of subject and work related activities that can be used in everyday life. (DoE, 2004).

According to the National Curriculum Statement for Papua New Guinea, The aims of the secondary curriculum are to:

- develop in students healthy self concepts and accountable autonomy that will enable them to identify and respond to the value systems of their culture while being appreciative of and respectful of those different from their own;
- help students be aware of major agricultural and food resource needs and be able to develop and apply appropriate technologies in support of local and national needs;
- assist students to know how to adapt directly and appropriately new technologies and knowledge to their environment and their own social and economic needs;
- encourage students to be creative, innovative and rational thinkers in their response to problems;



- enable students to understand the basic concepts about the world in which they live;
- help students achieve high levels of literacy in English and in other languages;
- enable students to be scientifically and mathematically literate;
- encourage students to have a good sense of social awareness and be able to respond to social issues;
- help students to have effective communication skills and utilise the full potential of information and communications technologies;
- encourage students to consider health and leisure as an important part of life;
- assist students to understand the requirements of further academic education and also help students to discover their own interests and strengths;
- encourage students to achieve excellence in all subjects without favouring one area over another;
- help students to identify potential career paths and what to expect in working life as well as provide a foundation for tertiary studies;
- assist students to learn how to learn and think for themselves and to view learning as a lifelong endeavor;
- enable students to be responsible citizens who are able to gain the necessary qualities and skills, in order to live happily and productively in the communities in which they choose to live and serve;
- encourage students to apply what they are learning to life and work-related situations for the common good;
- help students to develop a culture of enterprise and wealth creation for the benefit of themselves and society as a whole. (DoE, 2003).

The secondary school curriculum has remained largely unchanged since the 1980s. A number of schools have initiated school-based curriculum development in both the lower and upper secondary school grades. The Department of Education has established a process to approve such curricula. (DoE, 2004). The secondary curriculum has been reviewed recently. The Board of Studies has approved the new lower secondary syllabuses as trial draft documents. The draft syllabuses were trialed in schools in 2006 and the feedback from teachers used to finalize the syllabuses for implementation in 2007.

The table below shows the teaching subjects at the lower secondary level:

Lower secondary education: weekly lesson timetable

Subject	Number of weekly teaching periods in each grade	
	IX	X
<u>Core subjects:</u>		
English	8	8
Mathematics	5	5
Science	5	5
Social science	5	5
<u>Practical subjects:</u>		
Home economics	3-4	3-4
Practical skills	3-4	3-4
Technology	3-4	3-4
Agriculture	3-4	3-4
Commerce	3-4	3-4
<u>Other:</u>		
Religious education	3-4	3-4
Expressive arts	3-4	3-4
Physical education	2	2
Library	1-4	1-4
Guidance	1	1

Note: Up to a maximum of forty periods per week (each teaching period lasts 40 minutes).

Upper secondary education was formerly only offered by four national high schools. The new education structure provides for the conversion of selected provincial high schools into secondary schools covering grades 9-12. A reformed upper secondary curriculum was being developed in 2008. This followed an upper secondary curriculum review that was carried out in 2007. It is anticipated that the upper secondary curriculum will also allow schools a greater flexibility than in the past. (DoE, May 2008).

In 1999, total enrolment at the secondary level amounted to 79,601 students (secondary and provincial high schools; national high schools). In 1998, there were 2,900 teachers at this level and the average student/teacher ratio was 25.5:1. In 1997, the transition rate to grade 11 was 20% (9.6% in 1990). (Department of Education, March 2000).

In 2007, total enrolment at the secondary level amounted to 87,195 students (including 4,170 students in grades 7 and 8), of whom 44% were girls.

Traditionally, vocational education has been a provincial responsibility. Admission to the vocational training centres is in principle for pupils who have successfully completed the basic education programme (grade 8 graduates). Technical colleges offer one-year Pre-employment Technical Training (PETT) courses to students who have completed lower secondary education. These courses are being replaced by a two-year Technical Training Certificate (TTC) programme. The Papua New Guinea Education Institute offers a three-year course for grade 10 graduates leading to the Certificate of Elementary Teaching.



There are a number of different types of vocational centres operating in the country. These range from large institutions to small centres catering to just a few students. A number of vocational secondary schools have been established but these have proved difficult to implement in a cost and educationally effective manner. Vocational education has only seen gradual growth in enrolment during recent years, and any rises in enrolment are often related to the level of subsidy. The number of students in vocational centres rose by 43% between 1995 and 2003. Of those enrolled, 60% were in Year 1, 30% in Year 2 and the remainder in Year 3 or beyond. There has been little significant increase in female enrolment, which was only 26% of the total enrolment in 2003. There is no set length of course and not all students enter in Year 1. Students entering vocational centres are largely grade 8 graduates, but there are also those who have graduated from grades 6 and 10. Enrolments in relevant short courses, e.g. those lasting one day to four weeks designed for the community, are very low. There are increasing numbers of private providers, largely in the urban areas, who are offering programmes that are attractive to many students. (DoE, 2004).

In 1999, there were 15,573 students enrolled in vocational centres, 1,949 students in technical colleges, and 1,731 students in primary teacher training colleges. (Department of Education, March 2000).

Assessing learning achievement nationwide

A considerable amount of time and effort has been put into developing a Curriculum Standards Monitoring Test for grades 5 and 7. It has been supported by both the Curriculum Reform Implementation Project and, subsequently, the Education Capacity Building Programme. The pilot programme was first carried out in 2005 and the results were made available in 2008. (DoE, May 2008).

The 2006 grade 8 Certificate of Basic Education exam results were used as a proxy to measure quality of learning at the time. This examination tested the common knowledge and skills in both existing examination specifications and also the outcomes derived from the reformed curriculum (introduced in 2005). This was done because not all schools at that time had implemented the outcomes-based curriculum.

Except for written expression, the 2006 grade 8 students' performance in literacy, numeracy, and general skills, was well below 40%, which raises the questions whether the curriculum has been well taught or whether the test is in line with the curriculum. (DoE-NEC, 2009).

“Although there is considerable anecdotal evidence suggesting that the quality of education is declining, there is little reliable assessment of learning outcomes. It is reasonable to expect that as more children enter school and automatically progress to Grade 8, there is likely to be a greater proportion of students at the lower end of the intellectual ability distribution than was the case when there were significant “push-outs” at the end of Grade 6. Apart from the paucity of materials and textbooks, other factors would appear to be detracting from the quality of learning. These include delayed preparation and distribution of materials to support the new syllabuses, student absenteeism, late opening of schools and teacher absenteeism, limited monitoring of teacher performance by head teachers and inspectors, limited in-service support for teachers, and less-than-adequate facilities. Assessment of learning

outcomes remains a weakness, both at the system level and for individual students in the classroom. The only national measures of learning outcomes are the Grades 8, 10, and 12 examinations, which are, of course, not necessarily a reliable assessment of achievement levels over time.” (ADB, AusAID & World Bank, 2007).

Teaching staff

The lack of qualified teachers is a matter of concern. In 1998, the Teaching Service Commission approved 26,649 teaching positions but only 21,100 were filled. These figures vary from province to province, but all areas are faced with the problem of unfilled positions.

Of the 3,182 early childhood teachers employed by the Department of Education in 1998, all have had training. The first trained elementary teachers have graduated at the end of 1999 (some 1,000 teachers) and received a Certificate of Elementary Teaching (CET) from the Papua New Guinea Education Institute (PNGEI). The mixed-mode training programme leads to the CET after three years; entrants can be grade 10 graduates.

The training of primary teachers has been upgraded. All primary and community teachers have at least a two-year certificate in teaching from a recognized teacher training institution. In 1993, the primary teaching qualification was extended to a three-year diploma qualification, and the completion of grade 12 is the minimum entry requirement for admission into a teacher training college. The majority of new teachers are grade 12 graduates who continue their studies at the tertiary level for at least three years. The PNGEI offers a Diploma in Education Primary (in-service) course, a mixed-mode course designed to upgrade teachers to the diploma level and to prepare them for teaching at the upper primary level. School-based in-service teacher training is encouraged at all levels. Many teachers follow courses offered by university centres across the country and administered by the Institute of Continuing and Distance Education, University of Papua New Guinea.

Pre-service training for secondary teachers lasts four years and the entry requirement is grade 12. The content of the programme leading to the Bachelor of Education degree has been upgraded. Students are expected to participate in in-service activities (although they may not be widely available) as the curriculum is expanding. Teachers will be increasingly asked to develop a school-based curriculum appropriate to the needs of students and to the local contexts.

The social status of teaching staff is low and there are few incentives for young people to enter the profession or for those within the system to stay. Teachers are expected to undertake heavy workloads for the same salary as public servants, who usually have fewer responsibilities and no comparable tertiary qualifications. Allowances are provided for those working in remote areas. The Rural Remote Disadvantaged School Allowance, for instance, was set at K200 per year in 1983 to attract teachers to isolated schools. This was a breakthrough at the time but, in 1999, the allowance remains at the same level. Similarly, housing allowances provide little compensation. An extensive review of salaries and working conditions showed evidence of the gap between teachers' salaries compared to other occupations. The



increasing workload calls for substantial increases in salaries and allowances in order to attract and retain teachers within the profession. An agreement has been signed between teachers and the government; it foresees several measures aimed at encouraging teachers to move to remote regions. Multigrade teaching is becoming more and more institutionalized and a multigrade teaching allowance has been introduced.

Working and employment conditions for teaching staff are set by the Teaching Service Commission. There is an increasing sensitivity regarding gender issues and an understanding of the need to encourage more women to reach higher levels of the teaching service and, more importantly, to play a greater role in administration and decision-making.

The Department of Education has sought to increase class sizes as a reform objective in order to reduce the cost of education. Reform targets indicate that student/teacher ratios across the country are set at 30:1 in elementary schools, 40:1 in primary and lower secondary schools and 30:1 at the upper secondary school level. National averages hide the many variations in student/teacher ratios between and within provinces. Student/teacher ratios range from the 20:1 in Manus to 40:1 or more in the National Capital District. Teacher deployment is a significant problem and provinces need to move teachers from over-staffed to understaffed schools.

Given the high proportion of the education budget allocated for salaries and allowances of teaching and non-teaching staff, policies and practices relating to deployment are critical factors in implementing cost-effectiveness and in reducing unit costs. The implementation of efficient deployment strategies will facilitate the achievement of reform goals by minimizing the provision of additional resources, other than for the elementary sector. More efficient staff deployment practices will delay the demand for additional resources, particularly for teachers and infrastructure, which natural population increases alone could be expected to bring.

There are a few training opportunities for school principals and head teachers, although courses have been developed in the past. It is expected that this will be one of the main areas of attention in future years. The Institutional Strengthening Project (completed in 1999) and the Regional Management and Planning Advisors component of the Education Development Project have attempted to improve the capacity of administrators and planners at all levels.

The work of teachers has changed as a result of the reform process. The demands of the curriculum in terms of relevant content, the resources required, teaching approaches and levels of training are impacting on the teacher education curriculum. The curriculum and pedagogy practiced at the Primary Teachers Colleges will continually be reviewed to take into account these and other issues, such as outcomes-based curriculum, inclusive teaching practice and cultural relevance, to ensure consistency with the reform curriculum. Due consideration will be given to issues related to gender and children with special needs. Professional development programs for primary school teachers will be conducted at regional and provincial levels by the Department of Education and the provincial divisions. Teachers will be encouraged to have a greater input in decisions regarding the implementation of curriculum at the school level. In particular, teachers will be encouraged to solve



common problems through the establishment of professional learning teams in schools. Provision of information about HIV and AIDS will be made available to all participants at professional development workshops. Current programmes and the role of the Papua New Guinea Education Institute will be reviewed and strengthened with a view to putting in place a more flexible delivery mechanism for teacher in-service programs. Teacher education programmes will concentrate on the preparation of all teachers to teach the new primary school curriculum and to deal with the acknowledged problems being faced in grade 3 and beyond. This will include multi-grade teaching and bridging at grade 3. Teachers will be provided with opportunities to increase their proficiency in dealing with learning areas concerned with children with special needs. There will also be an increasing emphasis on school leadership training for all head teachers and Boards of Management, including school, financial and asset management training. (DoE, 2004).

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Web resources

Department of Education: <http://www.education.gov.pg/> [In English. Last checked: May 2011.]

National Research Institute: <http://www.nri.org.pg/> [In English. Last checked: May 2011.]

Office of Higher Education: <http://www.ohe.gov.pg/> [In English. Last checked: May 2011.]

Papua New Guinea Education Institute: <http://www.pngei.ac.pg/> [In English. Last checked: May 2011.]

University of Papua New Guinea: <http://www.upng.ac.pg/> [In English. Last checked: May 2011.]

For updated links, consult the Web page of the International Bureau of Education of UNESCO: <http://www.ibe.unesco.org/links.htm>