

Obstacles to Student Success in Papua New Guinea

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Keravat National High School - June 5 to October 22, 2010.

Introduction

In 1972, when Papua New Guinea was still under Australian administration, my wife and I were science teachers at Keravat National High School. This was the first year that Keravat became a National High School admitting Grade 11 students for the first time. The school was in excellent condition and well run. Science laboratory classrooms were very well equipped and stocked allowing science teachers to easily set up and run the required practical activities. In 1973, our second year in PNG, we were promoted and transferred to Lae. I was posted to Busu High School and Bev to Lae High School where we found science department facilities well maintained and equipped for the required practical work so integral to all science courses.

The New South Wales syllabus was used at that time resulting in standards of educational achievement running parallel to those of that state. The high school science syllabus, being Australian, lacked PNG contexts and examples that would have optimized its relevance to PNG students. This generally acknowledged syllabus weakness across all subject areas was understandable given the large differences in student background between Australia and PNG. We were confident curriculum would be aligned with the social, cultural and environmental background of PNG students over the next few years. As we departed PNG at the end of 1973 we were optimistic that PNG was on track to establish a solid science program and indeed a total educational program appropriate to the needs of its young people and of an internationally acceptable standard. Such a program would continue to allow the top PNG students access to any international post secondary institution they might aspire to attend.

From 1973 to the present we have continued to be involved in education and specifically science education. In addition to our classroom teaching careers in Australia, PNG and Canada we both have had extensive experience in secondary school science curriculum, resource and assessment development. As employees of the Alberta provincial Department of Education in Canada we worked throughout the senior high school curriculum revision years; myself for five years and Bev for nine years. Significant changes to the high school science programs offered in Alberta helped establish its worldwide reputation for excellent student results. Currently we are both retired and living in Canada.

Our recent five month volunteer teaching assignments at Keravat National High School provided us opportunity to observe the education process in action at the same school thirty eight years later. Our hearts were saddened as we realized that students are now experiencing the results of an education system in failure. These students were survivors of an education system rife with government corruption and plagued by inadequate funding, poor English skills of teachers, low curriculum standards, inappropriate assessment practices and a lack of teacher competence and professionalism. Instead of graduating with the knowledge, skills and attitudes needed to become solid, contributing citizens in PNG they were short changed in their educational experience. Our comments reflect our experience teaching at Keravat National High School but such experiences are not simply an isolated case. They represent challenges administrators, teachers and students face in schools across PNG. Discussions with parents, current teachers, employers, ex-Keravat students and teachers, politicians, business people and professionals from many areas of PNG confirmed our perceptions. The various obstacles to education we identify demand local, regional and national attention.

We respectfully submit our identification of obstacles to educational excellence in PNG and provide recommendations for remediation. It is our hope that this analysis might serve as a catalyst for collaborative and cooperative action towards improvement. The Government of Papua New Guinea and specifically the Department of Education must initiate and lead such action but such systemic change ultimately involves all stakeholders in education. We understand that new and generous funding for education has just been announced. That is good news but those funds must be carefully applied and accounted for so that every kina results in tangible benefit to the students of PNG.

Inadequate Funding

The young people of PNG are its greatest resource. Their education is the best investment PNG can make in its future. Well educated students become astute and capable leaders, professionals, business people and citizens; the foundation required for a secure and prosperous society in PNG. Education in PNG has not received the financial support required to function properly leading to the deterioration we witnessed. Sadly, money allocated to education is too often short circuited into the pockets of corrupt politicians and their friends.

Careful planning and budget allocation to bring education up to standard must be paired with fully accountable systems of plan implementation. Surmounting the various obstacles to excellence in education requires swift action to stem the downward spiral of education and to bring it back to an internationally recognized standard. That standard must be maintained to assure a continuous supply of well educated, highly skilled and motivated graduates that are critical to PNG's progress

Lack of Teaching and Learning Resources

Teacher and student access to computers, internet, textbooks, reference materials and audio-visual aids is essential for effective teaching and learning. The Keravat library was sadly lacking in recent and relevant resources for every subject. The books available were old and in poor condition with little if any direct syllabus linkage. The student computer lab had only seven computers with teachers having access to an additional four computers all of which were outdated and slow. No internet access and no hope of establishing such was a huge handicap to teachers and students. In science, as in most other subjects, there were no student textbooks or student workbooks in class sets. Various books left by teachers over the last forty years served as teacher resources. Four sets of about 6 books each from the 60's and 70's became biology student classroom references. Only one copy, a teacher copy, of the prescribed text for chemistry and one for biology was available. No budget was available for resources and none was forthcoming. No funds were available for purchase of consumable or durable items needed to run practical activities. Such items we paid for personally so practical activities could be run. Duplicating services did not operate consistently, particularly near the end of the school year when review work sheets are so critical to learning. Paper and toner cartridges were unavailable due to budget shortfalls and hence duplication of review materials became impossible. The blackboards, worn to the point where we had to repaint them, were often the only resource we had to fall back on. Chronic lack of resources contributes strongly to the lack of teacher motivation and teacher apathy that was so clearly visible at Keravat.

Recommendations

- Make education a top budget priority. Allocate sufficient funds to raise the standard of education in PNG to an internationally acceptable level upon completion of grade 12.
- Factor in the costs of development/adaptation of a national curriculum, assessment and student and teacher resource package, the upgrade of educational facilities, provision of teaching and learning resources including computers, internet access, textbooks, audio-visual aids and subject specific equipment and supplies, teacher training and professional development programs to bring English skills, assessment development skills and teaching expertise to a level appropriate to deliver a new higher standard syllabus.
- Establish a standard baseline of facilities and resources that educational institutions require to deliver such a syllabus. In high schools computer and internet access and training for all teachers and students and proper course textbooks for each student in each subject are essential.
- Implement a national upgrading program that brings the level of every educational facility up to the defined baseline. Full accountability for upgrade funding with close monitoring and reporting procedures to assure satisfactory completion of all upgrades in a timely manner must be in place. The rampant corruption that has diverted a huge proportion of educational funding for such upgrades in the past must come to an immediate halt.
- Provide consistent and adequate annual funding to maintain the upgraded facilities at or above the baseline level.
- Assure each student has access to functioning and current computers, internet access, adequately stocked library and a text book for each course.
- Assure teachers have access to reliable computers and the internet and are provided with the audio-visual aids, texts and teacher guides required to support their implementation of the syllabus. Science teachers

specifically require budget for maintenance, upgrading and replacement of materials needed for practical activities.

- Increase teacher salaries and the quality of teacher housing to attract strong candidates into the profession.

Poor English Skills

In the 1970's and 80's PNG education was moving strongly toward English because English was the official language of the country. As we returned to PNG in July 2010, we expected the population to be speaking good English assuming that over the last 38 years two generations or more of students would have learned English well during their schooling. We were surprised to find that instead Pidgin continues as the language of choice. As Pidgin was being taught at the primary and elementary school levels and even being used in high school by teachers in the course of daily instruction English skills are sadly lacking throughout the population. Such practices put students facing grade 12 final examinations requiring the skilled use of English at a great disadvantage. These students have great difficulty comprehending examination questions and expressing their answers in proper written English. The national examinations in science, and in fact in all subjects, demand a certain level of English proficiency that our grade 12 students simply did not have. When students lack proficiency in English, even if they understand the prescribed science concepts and their application, they will not be able to read, understand and answer the questions posed. Tragically such poor comprehension of English contributes to poor performance in all grade 12 subjects. This problem must be addressed and remedied or the standard of English speaking and comprehension will continue to deteriorate bringing the whole standard of education in PNG down with it.

Recommendations

- The National Educational Plan just released specifies for grades 1-3 the language of instruction to be that of the community. Although the language of the community is to be used English should be introduced in grades 1-3 as a subject taught on a daily basis. Research on language learning indicates that early introduction and use of a second language is the most effective method for students to become fluent.
- English becomes the exclusive language of instruction from grade 4 onward. Administrators, teachers and students speak English at all times while at school with no Pidgin allowed.
- Assure administrators and teachers currently in schools have a level of English that allows them to function completely and effectively in English.
- For those professional educators lacking proficiency, provide upgrading to boost English skills to the required level.
- Complete fluency in English for all educators becomes the number one priority in teacher training. Graduating teachers must be competent and confident in English, capable of using English exclusively and effectively in their classroom from grades 4 onward or to teach English as a subject in grades 1-3.

Syllabuses Fall Short of International Standards

PNG currently offers a syllabus offering a considerably lower standard of science education to students than it did in 1972. The current standard falls far short of science education standards in Australia, New Zealand, UK, Canada and the USA. In 1972 standards were equivalent to those of New South Wales, Australia and were acceptable internationally. Now content and outcomes of the grade eleven and twelve PNG chemistry and biology programs fall approximately two years behind those of our home province of Alberta in Canada. A good portion of the grade eleven chemistry syllabus covers grade nine Alberta concepts while many grade twelve PNG outcomes compare to grade ten outcomes in Alberta. If a similar comparison was made to the curricula of any the aforementioned countries PNG standards would be found lacking. Such a "watered down" syllabus poses problems for PNG graduates seeking entrance to post secondary institutions overseas. They cannot compete successfully because of the low level of achievement the PNG school leavers' certificate represents. PNG graduates face outright denial of entry or one year or more years of upgrading before admission to a first year program becomes possible.

In 2010 the grade 11 and 12 syllabuses for biology and chemistry did not clearly specify the breadth and depth of coverage for some concepts. Each year national exam questions appear that do not align directly with the syllabus. Consequently teachers find themselves guessing what material beyond the syllabus might appear and to what depth and breadth particular concepts will be tested. These yearly surprise questions that test non-syllabus material result

in that material becoming an unofficial “add-ons” that in effect expand the syllabus. Teachers now must cover the “add ons” as such material could well appear on future examinations. The “add-on” practice is unfair to students and teachers and continually erodes the validity of the syllabus.

Recommendations

- Develop high school syllabus and assessment standards requiring student performance levels equivalent to those in Australia, UK, New Zealand, Canada and the USA.
Given the current state of education in PNG this is an expensive and labour intensive task requiring strong leadership and expertise in curriculum, resource and assessment development. Bringing education up to standard in PNG is an urgent matter best addressed by forging a strong educational development partnership with an educational jurisdiction that can offer a comprehensive educational package of international standard to PNG.
- For each program adopt the syllabus, teacher and student resources and assessment instruments from an educational jurisdiction with strong international recognition for educational excellence and standards. Use such a package as the skeleton for development of a PNG appropriate package. In such an adaption extreme care must be exercised to assure that no required concept or skill requirements are lost in the process. It is the context in which such requirements are taught that will need modification so the new program is culturally appropriate for PNG students. Such contexts have to be incorporated, tried, revised and improved upon on an ongoing basis through consultation with PNG educators. An existing curriculum, resource and assessment package with proven standards can be tailored to meet PNG needs without huge expense or the risk of falling short of the standard that is posed by starting from scratch or with an already substandard syllabus. The academic integrity of such an “adopted and adapted” package must be retained to assure the resulting standard is acceptable for entrance to international post secondary institutions
- Establish syllabus review committees of excellent teachers and post secondary instructors in each area of science. These committees focus on incorporation and continuous improvement of PNG contexts that make syllabus concepts and skills more relevant and understandable for students. With concept and skill objectives remaining relatively static from year to year, the PNG appropriate contexts continually evolve. New contexts emerge as teachers become familiar with the syllabus and the use of culturally appropriate contexts. Additions, deletions and modifications to such contexts are provided to educators annually. It is likely that such contexts will differ from area to area in PNG and that area specific contexts may eventually emerge.
- A separate document, a teacher resource manual of sorts, including sample lesson plans and practical activities incorporating the specified culturally appropriate contexts could be developed and made available to teachers. Such a document can be updated each year through consultation with the field of science educators and the syllabus committee.
- Syllabuses must clearly prescribe what will be tested in the final examinations and the examinations must not test beyond the syllabus content or depth.
- Establish special status schools for students aspiring to post secondary education upon graduation. National boarding schools drawing students from across the country are a good option for promotion of peace and understanding between the different areas of PNG. These schools must be well equipped and staffed by teachers with the competence and confidence to deliver the syllabus including the required practical work.
- Recruit skilled expatriate teachers for the national schools to team teach with local teachers for the first few years to establish a solid base of excellent local teachers. Such partnering allows local teachers time and opportunity to become skilled at content delivery incorporating practical work effectively. Retired expatriate teachers are a good pool of talent to draw upon. If proper housing and working conditions were available it is entirely possible volunteers could fill such positions. Orientation and on-going facilitation and support for such professional development partnering would be beneficial to both ex-pats and their teacher partners.

Assessment

Mark Boosting

At Keravat National High School it was school policy that each school term teachers submitted student marks in all subjects which were adjusted so predetermined percentages of students fell into each of the A, B, C, D and E grading categories. This was done with no regard to the actual marks students attained for their classroom performance. As a consequence, marks awarded to each student at the end of each term did not reflect their true knowledge and understanding of the course content. Students demonstrated far less competence than their awarded term mark would imply.

Local teachers, accustomed to and unconcerned with the regular boosting of students' marks, never question it. Teachers know the Department of Education uses the same practice when determining students' final grade 12 marks.

Marks on the national examinations are adjusted so the final reported marks reach normal acceptable standards and fall neatly into the prescribed letter grades with no regard to actual student performance. Using the 2009 national biology scores as an example, the lower cut off point for an "A" was 47% when an "A" standing should have 80% to 85% as a lower cut off point. Students who scored 47% in biology, meaning have mastered less than 50% of the syllabus requirements, were awarded an "A". The mark for such students was boosted 35% or so to an 80-85% level. Regular boosts of 30% or more occur for other subjects as well. Thus PNG graduates pursuing post-secondary studies, even those graduating with an "A", are saddled with a huge handicap. An "A" level grade 12 school leaver may have mastered only 50% or less of an already low standard syllabus. As school leavers proceed to post secondary institutions their knowledge and skill level is far below what their mark indicates or what is required for success. What do colleges, universities and technical schools do with students who have such low levels of competency? How does PNG hope to educate and train the leaders and professionals it needs when such assessment practices paint a false picture of what students actually know and can do?

Final Examinationsa

The 2010 final examinations in Biology and Chemistry along with those from years previous had the following problems:

- Questions that test material not included in the syllabus. The final examinations ever expand what teachers must cover as the examinations test material not found in the syllabus.
- Questions that test to a depth or breath not specified explicitly in the syllabus.
- Failure to consider the students poor command of English. Long question lead-ins with high level English vocabulary are used when clear and concise English would suffice. The complex working of some questions caused us difficulty in determining exactly what was being asked even though English is our first language and we have degrees in Biology. Students found mock final exams and finals too long and too difficult resulting in many students not attempting all questions.
- Final examinations do not reflect a fair balance of questions from the various units in grade 11 and grade 12. Each year particular units receive more emphasis than others and some units are shortchanged.
- Questions that require students to make assumptions in order to answer them appear. Making one set of assumptions leads you to one answer, making another set of assumptions leads you another equally correct answer.
- Poor proof reading and editing leading to spelling mistakes, no answer or two answers to some questions, data sheets errors and questions having to be corrected by students just as they begin the examination.
- Questions not carefully checked or field tested to assure they are valid and accurately discriminate between strong and weak students.
- Answer keys are not always correct or can be too prescriptive in the short answer section where, in some cases, several more acceptable answers are possible.
- Questions from previous examinations are periodically recycled. Such recycling leads to teachers reviewing past examinations as their primary teaching technique. This replaces practical activities and other solid classroom science learning that needs to take place.
- Examination development lacking in consultation and collaboration with teachers and post secondary science educators. We have been told that only one person, a university biology professor, writes the biology examination in isolation with no input from the biology education community in PNG.

- Examination security compromised.
Students and teachers told us that final examination questions have been bought and sold and even appeared on the internet before such final examinations were written. These allegations may or may not be true but steps that absolutely guarantee examination security must be in place to preserve the integrity of the examination process.

Practical Work Marks Invalid

The syllabus and the experimental context of many final examination questions failed to motivate science teachers to incorporate practical activities and the assessment of such into their classroom practice. Although a mark for practical work worth 20% of a student's mark was submitted each term that mark was created by shifting some assignment scores into the 20% column earmarked for practical assessment. Teachers were unconcerned about the lack of practical work and the fact that they were submitting a mark for something the student never had opportunity to do and hence had never been assessed on. No school administrative or Department of Education monitoring or assistance was evident to assure that a practical component was actually being offered and properly assessed. In addition no budget for equipment and supply maintenance and replacement was available.

Teachers Lacked Assessment Expertise

Our partner teachers relied heavily on the copy, cut and paste technique to prepare unit and term examinations. They pulled questions from a huge collection of assessment instruments dating back many years. If they had to modify questions or write an original question they had difficulty doing so in proper English. Their poor English skills resulted in vague or inaccurate questions that were difficult to understand and questions that did not ask what was intended. Some questions on unit and term exams were incorrectly keyed, rewarding students for the incorrect response and penalizing those who got the correct answer. Students using such exams for review carry such errors forward and suffer the consequences when they write their final examination. Analysis to determine if an examination was properly constructed or to determine what areas needed classroom review seemed a new concept to our partner teachers who were reluctant to give time and attention to such matters.

Recommendations

- The previously mentioned cost effective and efficient way for PNG to annually administer valid international standard grade 12 examinations is to adopt and adapt a complete syllabus, resource and assessment package of acceptable standard. For example a strong partnership between PNG and New South Wales Department of Education or any similar internationally recognized educational constituency could be struck for that purpose. Appropriate partnerships with curriculum development, assessment development and teacher professional development agencies in government and post secondary institutions in that country could further support such an implementation in PNG.
- The assessment component of such a package would include a properly field tested and valid final examination each year; an examination that would be appropriately adapted by the substitution or addition of PNG contexts.
- The syllabus, as adapted, defines what the examinations will test. It clearly defines all testable outcomes and the depth and breadth concepts can be tested to. Questions outside the syllabus should not appear on final examinations.
- Examinations are adapted by a committee of collaborating science educators and science specialists and not by an individual or by a few individuals.
- Committees are struck, chaired and funded by the Department of Education assessment division. The Department leads by providing strong expertise in the complex area of valid examination development – raw item development, field testing of items, revision and finally production, administration, marking and mark adjustment. Persons with such expertise would ideally be seconded from the country providing the syllabus, resource and assessment package for adoption and adaptation.
- Final exams are well balanced with units of study represented equally or in the proportions specified in the syllabus. Particular units of the syllabus do not receive disproportional emphasis from year to year but examination questions reflect the proportions indicated to teachers in the syllabus.
- A proper range in difficulty of exam questions is attained such that the unadjusted test score mean falls in an acceptable narrow range, close to 60%, with little or no adjustment.

- Assure the use of simple clear English in examination questions so the comprehension level required matches that of current grade 12 students.
- The time allocated for students to write the exam must reflect the actual time taken for an average student to complete the exam.
- Properly constructed examinations proved valid through field testing produce acceptable bell shaped curve results that do not require large adjustments. This must be the end result for PNG students. When an internationally acceptable syllabus is adopted, adapted and implemented and the complementary examinations adopted, adapted and administered students are assessed to an international standard and perform to acceptable levels within that standard.
- Implement teacher training and professional development to bring teachers to a level where they can skillfully develop valid assignments, skill assessment instruments and examinations. Very practical training requiring teachers to prepare, administer, analyze and revise a valid unit examination in their subject area is needed.

Teacher Expertise and Professionalism

Currently PNG requires a strong cohort of capable, well qualified and highly motivated teachers at all levels and in all subjects. In their daily classroom practice PNG teachers face the results of chronic underfunding and corruption at every level. Within this ailing education system some teachers carry on as best they can, others become discouraged and apathetic and some give up as they face huge obstacles to effective classroom practice. The lack of teaching and learning resources, poor teacher housing and pay, unheeded teacher grievances, school buildings falling apart and health and safety threats loom as maintenance and upgrading are non-existent.

As we began our assignment at Keravat we assumed our PNG teacher colleagues to be knowledgeable and competent professionals capable and willing to deliver and assess the grade 11 and 12 science syllabus content leading up to a national final exam. Our local partner teachers held Education degrees with specialty in the relevant subjects yet lacked the knowledge and competence to teach some parts of the syllabus and to implement the required practical component. If such qualified specialist teachers at a National High School like Keravat have such difficulties, one has to ask, why? How can such supposedly well trained teachers lack the skills and motivation to effectively teach the syllabus to students? Some of the shortcomings were:

Practical Component in Science Ignored

The mandated practical component of the PNG grade 11 and 12 science syllabuses accounts for 20% of a student's mark. Teachers are required to integrate practical activities into their classrooms and to assess students' knowledge and skill development in relation to these practical activities. Practical work challenges students to apply concepts taught in the classroom to tangible situations encouraging the development of inquiry skills. Research shows students learn best when they are actively involved in problem solving and experimenting, when they manipulate materials and equipment, make relevant observations and form relevant conclusions. National science exam developers build on the practical component of the syllabus by using experimental contexts for many of final examination questions.

At Keravat science laboratories, chemical storage areas and preparation were in such a state of total disarray and neglect it was evident that little if any practical work had been done for many years. This fact was verified by our partner teachers. Omission of practical work might have been understandable if equipment and materials were unavailable. As it turned out the school had almost all equipment and supplies needed to run full practical programs in biology and chemistry yet teachers cited lack of such resources as the reason no practical work had been run. They also cited lack of training at teachers college as the reason they avoided practical activities in their classrooms. These teachers did lack knowledge of chemicals, chemical storage and safety issues, biological materials, microscopy, dissection and other skills that would facilitate safe and effective practical activities. If science teachers are not specifically trained to run practical activities and how to maintain and store science materials and equipment it is a very serious academic and safety matter. However, we believe that lack of training was only part of the problem. Teaching science programs with a practical component demands not only proper teacher training but considerable time and effort. This is especially true for beginning teachers or those doing practical work for the first time. Science teachers must understand that practical activities are essential and be motivated and committed to put in the extra time and effort required to implement them. At first our partner teachers showed interest in learning the practical

aspect of science by working along with us. Interest and cooperation fell off sharply once the effort and time required to accomplish our goal became apparent. We were fully prepared to teach them as we went along but they choose not to collaborate to a degree that would insure they developed the competence to implement such activities on their own.

Lack of Accountability

Within the mark boosting system previously described teachers fall into an endless cycle of mark adjustment. They are no longer accountable for teaching course content to a level where students' unadjusted marks fall close to an acceptable average of near 60%. Teachers lose sight of that professional obligation, secure in the knowledge that whatever the classroom results, marks are adjusted to mask poor student performance. Poor student performance indicates poor teacher performance or other educational problems that need attention. With mark adjustment firmly entrenched at the school and national level no questions are asked, no problems are identified and hence no remedial action is taken. The quick fix is applied and standards of performance of students and teachers appear acceptable. In reality standards have slipped to low and unacceptable levels and continue to remain there. Lack of accountability coupled with mark boosting produces a vicious cycle holding PNG's education system firmly in its grip.

Teachers as Models.

Teachers at Keravat cited students' low ability, lack of punctuality, lack of interest in their studies, poor attitudes, non-participation in work parade, betel nut and alcohol use and cult activities as reasons for poor student performance. The Keravat grade 12 students were referred to as simply "a bad lot". Unfortunately a large proportion of teachers displayed a lack of professionalism by exhibiting many of the very behaviors they abhorred in students. Teachers arrived late or simply did not show up for classes, assemblies, examination invigilation, work parades or dormitory and sports supervision. Betel nut chewing was common with teachers chewing throughout the school day. Teacher alcohol abuse was not uncommon and very visible to students. In some cases alcohol was supplied to students by teachers or support staff. Alcohol abuse by teachers in the school compound had lead to huge problems between teachers and those problems polarized the staff to a degree so little if any collaboration or cooperation to solve problems was possible.

Instead of adapting their teaching methods to meet the student needs, teachers continued to blame poor student performance on the general low ability of the student body. The school limped along with poor classroom practice, few extracurricular outlets for students and virtually no school maintenance. Teachers lacked the motivation and professionalism to do the jobs they were being paid to do. Students followed the model of unprofessional behavior provided by teachers and they took advantage of opportunities to get into trouble. Empathy and concern for students was sadly missing in many of the teachers.

Our challenge was to address students poor work habits and correct the knowledge-mark discrepancy we previously described. Struggling to bring students up to a level of competence where they could be successful on their final examinations, we had to re-teach concepts and make up for at least two years of missed practical work. We implemented supplementary night classes to accomplish this goal and kept classrooms open as much as possible for student study and assistance. In a short time the majority of students were interested and engaged in learning and their understanding and skills began to improve. Once students saw we were punctual, delivered consistent and effective lessons and practical activities and genuinely cared about them and their success in their science they responded. Student improvements in punctuality, attendance, effort and cooperation resulted. Throughout our careers we have seen a direct correlation between teacher competence and concern for student learning and the interest and effort shown by the student. In PNG it was no different.

Betel Nut and Alcohol

Betel nut and alcohol use by teachers during school hours or on school property other than a teacher's private residence is not acceptable. Awareness raising professional development programs and teacher training is urgently needed to stem the dangerous trend toward betel nut chewing becoming normal behavior for students and teachers in PNG schools. The same applies to alcohol use although alcohol use during school hours and on school property is less prevalent and perhaps easier to conceal but definitely reducing the quality of education PNG students are receiving. Programs to assist teachers already addicted to betel nut or plagued by alcoholism need to be implemented. We observed no enforcement of school rules against betel nut or alcohol use by teachers. No tangible

assistance to abusers or consequence for repeated abuse was evident even though a fair proportion of Keravat staff regularly chewed betel nut on the job and school grounds, showed up for duty under the influence of alcohol or suffering from the effects of alcohol or simply did not show up for duty. Accountability for such unprofessional conduct was virtually nil sending a strong negative message to students who observed teachers chewing and drinking with impunity.

Recommendations

- Science programs at colleges and universities must train aspiring science teachers to a level of proficiency allowing them to competently and confidently teach a full science syllabus including the required practical component.
- Professional development programs for teachers already in the field are required to bring teachers practical activity skills up to par.
- Science departments in schools are equipped with the basic equipment and materials required for teachers to do the practical work prescribed by the syllabus.
- Science departments are provided with a reasonable annual operating budget for replacement of consumables and repair or replacement of broken or damaged items/equipment.
- The Department of Education and school administration must assure syllabus requirements including the practical component of science programs is implemented and assessed. Currently there is no accountability on this front.
- Teacher education must clearly delineate teachers' professional obligations – what teachers are legally and ethically required to do. The role and responsibility of a teacher is to provide for student's physical and emotional well being as well as to teach them the syllabus to an adequate standard. The teacher serves as a powerful role model for students and this fact brings with it huge professional obligations.
- Teacher training include emphasis on the value of empathy and the importance of concern for the welfare of others.
- Teacher training must emphasize that it is a teacher's professional obligation to adhere to high moral and ethical standards at school and in the community throughout their career. Teachers serve as strong role models for students much like chaplains, pastors, and priests.
- A complete ban on betel nut and alcohol during school hours and on school property must be enforced. Awareness raising and assistance for addiction must be offered and then strong professional consequences applied for further violations in order to assure students receive the quality education, positive modeling and safe environment they are entitled to at school.

Conclusion

Our observations identify obstacles contributing to the decline in educational quality in PNG and recommendations for remedial action. All these obstacles need urgent attention if a marked improvement is to be expected in the foreseeable future. The political stability of PNG will ultimately be affected if the government fails to respond appropriately. PNG must make swift changes to the educational system if the country is to remain a stable democracy with a healthy economy. Without a strong cohort of citizens educated to acceptable international standards to provide leadership and expertise for development and management of the country's infrastructure and public services the standard of living for the average citizen will not improve. This would be a tragedy as PNG has the potential to do so much better.