

Teaching & Learning

When embarking on any commentary involving teaching and learning in science education it is important to maintain a clear impression of what it is we are trying to achieve.

In the schools visited there was a wide variety of involvement from both MoEYS and from other organisations, particularly in the area of student centred teaching and learning and this was in part tied into the Textbook Orientation training that teachers had received to support the introduction of the new textbooks.

In one primary school visited the teachers had been exposed to T.O.P. and in addition were in receipt of a wide variety of technical assistance.

The resultant effect of this support was a considerable confusion surrounding what was meant by student centred teaching and learning and with each individual input teachers were exposed to different sets of expectations and interpretations.

This exposure comes at a time when Cambodian teachers, despite their best efforts have not received appropriate pedagogical training aligned with insufficient subject knowledge, meaning that ultimately little real change will be achieved.

The teachers need a base from which to make sense of the changes that are being imposed upon them.

The resultant confusion and ineffective implementation of change not only highlights the needs of the teaching force, who were trained under emergency conditions, but also focuses attention on the appropriateness and accessibility of the training that is currently provided for teachers and the follow up needs that need to be provided..

In order for messages to be re-enforced and understood there is a responsibility for all involved in science education to define terminology and to reach a common understanding of what is meant by student centred teaching and learning.

In discussions with P.O E. officials, directors, teachers and representatives from other organisations there was no clear and common definition provided of what student centred teaching and learning is.

Definitions ranged from a consideration of 'student-centred' in its widest form to narrow, specific statements about what it is.

If changes to the approaches to teaching methodologies are to be effected there needs to be in addition a common strategy to identify methods for applying the definitions and a clear awareness of the processes that are involved in ensuring that change happens to the benefit of students and teachers alike.

The provision of textbooks and the limited T.O.P., whilst valuable represents only one part of the equation with the goal of improving the educational experience.

Changes to teaching methodology require a need to understand the differing needs presented by different subject areas.

Lesson observations confirm that teachers are attempting to approach their teaching in a student-centred way, they are trying to utilise a variety of resources and are beginning to introduce group work activities however there still needs to be an enhanced awareness that student centred teaching and learning approaches as are currently understood by teachers does not represent the sole approach to enable effective learning to take place.

The synthesis report on the joint evaluation of Sida/UNICEF support for basic education in Cambodia, 1998 cites that in the UNICEF/Sida supported clusters observed ...

“Teaching and learning is generally dominated by traditional teaching methods using highly teacher-centred forms of instruction and emphasising rote memorisation”.

This statement may be equally applied to the schools observed throughout this study, however in the case of science teaching, particularly, strategies commonly characterised as traditional may be the most appropriate approach.

Learning by rote is still considered to be the most satisfactory way to introduce the first 20 elements of the periodic table in Chemistry.

Learning time's tables in Mathematics provides a firm basis for the study of mathematics. It is still the case that many teachers consider a more 'traditional' approach to be the most effective.

When introducing new conceptual knowledge in science a teacher-led, didactic approach may be the only way to present an understanding of new material, e.g. during an introduction to the lesson.

This provides the teacher with the opportunity to ensure that as a minimum the student has received accurate theoretical introduction.

A firm instructional approach is the most appropriate way to explain the approach towards practical work – for reasons of safe working practices and of organisation of limited resources.

The varying of the pace of a lesson in science is characterised by the ebb and flow of teacher versus student activity with student needs always being the focus of the activity whether teacher or student led, but in the lessons observed teachers lack the awareness of the subtleties of this distinction.

The science and maths teachers need to have re-enforced that a varied and balanced approaches can be used to enhance the quality of teaching and learning, there does not have to be a choice of one versus the other.

The UK education system is currently undergoing reactionary changes in teaching methodologies after a whole-scale move towards child centred approaches in the 1960's (Plowden report, 1967).

This is due to the emergence of data to suggest that educational standards have been falling in response to standardised testing and despite wide ranging financial support.

The move is now back to 'traditional teaching'.

This example whilst limited in scope serves to illustrate that there is no correct and best approach – rather there needs to be an agreed approach contingent upon the needs of education and not least on the capacity of the teachers to deliver these new approaches.

In discussions the teachers interviewed have stated that they would benefit greatly from an acceptance that some of what they have been doing is appropriate and that there is no absolutely correct approach.

It may be that the most effective support that can be provided focuses on getting the balance right rather than focusing on extreme points along a continuum.

Science and maths teachers, amidst this confusion have almost totally lost sight of the fact that science and maths are essentially practical and applications based subjects.

As was stated in the introduction it is impossible to separate our every-day life experiences from scientific experience.

A practical experience in a science lesson can serve to re-enforce understanding of new concepts and can provide a platform from which to solve practical problems by applying what has been taught and learnt.

A teacher can teach a student methods for cleaning and purifying water or can ask – how can you make water from this well cleaner?

The knowledge required to approach these problems is identical but the second approach demands that understanding can be transferred and applied to a real life situation and utilises a problem solving approach.

This shows the extent of understanding and also re-enforces that science is not exact or absolute but that there may be many different solutions to the same problem.

It also allows for the critical thought and creative approaches that typify the ways in which scientists work.

A problem solving approach further directs the emphasis of the provision of practical resources away from the teacher to the student.

In one lesson observed the student had on his own initiative presented a 'sieve' made out of a coconut shell with small holes as his solution for separating mixtures of different particle size.

The teacher had not asked the students to do this but the student had been interested enough to spend time out of school developing his idea.

This activity presented an opportunity for the teacher to develop the idea further by asking – What other ways can you think of for separating mixtures? But the opportunity was lost.

When asked the teacher stated that he was worried that he would run out of time and not cover all the work for that grade.

This answer prompts two questions:

- The MoEYS states that teaching time is 38 weeks each year. This is not a realistic number considering the realities of attendance. (UNESCO, 1998)
- Scheme of work development from the curriculum is insufficient due to the lack of guidance presented by the curriculum structure, particularly in terms of the identification of specific learning objectives.

The example stated serves to illustrate what most science educationalists understand and is in essence what motivates them to teach.

That is that each child arrives at school with a natural spirit of inquiry which complements perfectly scientific approaches.

Practical Approaches to Science Teaching & Learning

Within science education in Cambodia there is a chronic shortage of trained science teachers.

The additional factor that practical and experimental approaches are an essential component of a science curriculum in order for the applications of the subject to become fully absorbed and assimilated into every day life remains particularly problematic.

The fact that teaching approaches that currently exist are based mainly on theoretical and didactic approaches is not surprising since there is a real lack of resourcing in terms of materials and chemicals to support science teaching & learning even at the most basic level.

Neither is there the funding or the will from schools to identify dedicated funds to support science teaching & learning even at the most basic level. It is apparent from interviews with directors that even if there were identified funds within schools to address the additional needs inherent in science teaching & learning there would be little ability to meet the recurrent costs involved on a year by year basis.

The current science teaching community in Cambodia has had little or no experience of practical science; the majority would not be able to recognise scientific terminology and there is little basis for them to be able to realise or access the uses of this apparatus in a practical situation.

The teacher training in science does not address the practical nature of the subject and does not focus on the alternative ways of being able to provide a practical learning experience for students through the use of locally occurring and natural resources.

A feature of the situations observed with science teaching at present is that a very large number of science teachers at secondary level together with comparable numbers of teacher educators and textbook and curriculum developers have had little or no practical experience in the sciences and themselves have depended upon book learning.

They themselves learnt science by rote and may themselves feel inhibited to attempt any practical work in science and certainly would be in a position where they were unable to write about it for practising teachers or in the training new teachers.

It is important to note that the key scientific processes involved in the teaching of science,

- Hypothesising / Questioning
- Planning
- Obtaining evidence
- Analysing evidence
- Drawing conclusions
- Considering the strength of the evidence.

.. are all independent of a specific scientific content and can be applied outside science domains to other subject areas and more importantly to real life situations.

When the application of science is an integral component of science education, a selection may be made in terms of those situations where these applications would be profitable in the light of contributing to the improvement of quality of life and to the understanding of the environment. (Jay Rattanaike, Redd Barna, 1994)

The application of science to real life situations provides a foundation and vehicle for the development of the key processes of science and can exist in isolation from the slow process of science knowledge upgrading .

For the majority of children in school situations this approach will represent an important exposure to the only formal science that they may experience throughout their lives and when considering this it is important to identify clearly the aims of science education.

When considering the real-situation in Cambodia it is not the case that the education system is solely concerned with producing a nation of scientists but rather a population that is capable of scientific thought.

Some children will need to be prepared for higher education and will become the 'scientists' of the future and this is important. An application approach does become an effective agent for understanding principles and concepts for those that do proceed to higher levels of science education.

RGC goals of General Education support the philosophy of a learner-focused population with the first priority being an educated population capable of shouldering the real life responsibilities and new approaches to science and mathematics teaching and learning will be a natural step towards further realising this philosophy.

Practical Resourcing

The science & maths survey carried out in May 1995 showed that one of the greatest obstacles to prevent the development of practical science education was,

"the almost non-existence of science resources in terms of specific equipment and chemicals".

This situation was not confined to provincial areas but existed also within the municipality of Phnom Penh and there is no evidence throughout discussions with various POE's to suggest that this situation has changed.

One school within Phnom Penh, has a science kit donated by the ADB but the use of this kit is limited in scope and restricted by the lack of knowledge and confidence of the teachers within this school, despite technical assistance for the last two years.

Further, at the recent science fair held at the school the teachers needed support which was of a basic nature. This showed above all else that the use of the apparatus to conduct experiments was one thing but when a problem occurred there existed no capacity to analyse the problem and to correct the mistakes.

The teacher knows what each piece of apparatus does but not how to apply it in a variety of situations.

This is after 18 months of technical assistance and is not related to the quality of the assistance that they received but on the quality of the basic levels of science education that the teachers had received.

The problems relating to lack of resourcing in science exists at all levels within Cambodian educational structure.

The science department at the University of Phnom penh has worked over the past two years with the assistance of APSO vols to put together programmes for under-graduates that involves the development of practically based science practices together with an

awareness of the applications of science apparatus related to theoretical aspects of science. The resulting programmes are of high quality and are successful. This means that in theory upper secondary teachers entering schools in the near future will have a greater degree of practical science knowledge than in the past. However the majority of teachers involved in Teacher Education programmes generally have no exposure to practical science and therefore those teachers entering lower secondary education are much less experienced and advantaged in terms of practical teaching methodologies.

UPP

The UPP has the most sophisticated and varied access to science practical resources some of which was provided as part of the country's involvement within the Eastern Bloc (1979-1991) and latterly through the procurement of some apparatus donated by the ADB in 1995.

At the UPP the supply of chemicals and equipment was organised through the exchange programme amongst universities within Eastern Bloc countries.

The UPP currently has a high grade of science laboratories, which have been further developed, with the support of vols from APSO.

At the time of interview these laboratories were used currently for only a small percentage of the week.

The greatest problem for the university is in terms of budgeting for the recurrent costing implied by the extensive use of consumables that is a necessary part of practical science teaching.

The UPP has no formal means of procuring such consumables and until recently had no knowledge of where in PP to obtain basic science equipment.

This problem related to procurement is nationwide.

It is relatively easy to obtain electronic items as these tools will often be necessary for the repair of practical appliances.

Other items, namely chemicals are usually sold through chemical companies but in Cambodia a pharmacy will only sell company made medicines.

(CMS located near the MOH will procure chemicals on an order basis).

In addition the apparatus donated by the ADB also presents these same recurrent cost implications.

The chemicals that were originally contained within the kits are now crystallized and have deteriorated.

There is no safe method of their disposal and some of these chemicals now present possible risks if left.

F.O.P.

The FOP has responsibility for PRESETT for undergraduates and postgraduates, as well as for INSETT provision.

It does not have a science laboratory.

A project proposal for re-habilitation of the science lab has been submitted to the

Japanese Embassy as part of the JGAGRP by PMMU (September 1998).
This proposal was re-written and submitted to Norio Kato at PMMU in May 1998 by CB.
This project could still go ahead at very short notice as plans are already in place.
The re-habilitation plans included the provision of water and electricity.

ADB Kits

Science is currently taught in a normal teaching room – there are no dedicated rooms for the purpose of teaching science.

For health and safety reasons alone it is important that a dedicated room is made available for science due to the nature of the subject and this causes problems where there is a lack of space.

Much of the equipment that is in schools is either displayed in glass cupboards or more commonly is still contained within the packing boxes in which it arrived.

In one school in Kandal Province kits are on the floor of a room that is already dedicated for science but the teachers have no capacity to understand the equipment that it contains and are frightened to touch things that they don't know about.

Before practical science can be introduced using a variety of different resources there is a need for fundamental issues to be considered.

It is misguided to consider that a science lesson is based on 'doing an experiment' and as many science educationalists are aware without logical and sequenced development of concepts and without the practical experience being relevant and embedded within the curriculum there is little or no benefit to the students as learners other than having fun.

In order to run a practical lesson there are major considerations:

1. Classroom Organisation and Management

- Can the teacher organise the classroom furniture and pupil?
- Do they have an awareness of how to facilitate practical work in terms of group work?
- How would they organise the students so that they can access practical work?
- How can they organise the activity safely?
- What needs to be prepared for in advance of the lesson?
- Who is going to organise this?
- Is the room dedicated so that experiments can be set up in advance?
- Can experiments be left e.g. Biology experiments can take up to 3 weeks with apparatus left.
- Is there an ethos whereby students are encouraged to access their work on an individual basis?

Student/teacher work practices should be established so that they know how each piece of apparatus should be used regardless of the experiment.

E.g. In order to add 30mls of water to a solution the student would need to know that the measuring cylinder is the appropriate piece of apparatus to use for this.

They would need to understand the theory of meniscus and how to read it.

They would need to have learnt specific skills e.g. how does one fill a measuring

Cylinder carefully and how should solutions be poured when mixing with another. It may not be so important for water but with other chemicals it would be. Furthermore it is too late to suggest that students experience the bulk of practical science at grades 10,11&12-

Scientific working practices have to be established as part of prior knowledge or taught from scratch, e.g. in the UK a science teacher will spend the first 3 months with students new to science establishing how to do practical work in science. Established and safe working practices are essential in any science lesson.

2. Health & Safety

- Is there running water or water in quantities available?
- Is the teacher aware of the need to find out about chemical use?
- Can the teacher prepare molar concentrations of chemicals that are appropriate for the students to use safely?
- Teachers are not aware of the need for safe working practices.

Students would need to have an established understanding of the way science should be approached safely.

Teachers would need training in basic first aid to deal with problems e.g. How to treat acid spillage or how to deal with acid/alkali on the skin.

3. Resources that are available.

- Are the relevant chemicals available?
- Is there a need for preparation work?
- Awareness of sets of apparatus and how these can be situated effectively and safely.
- *How are instructions going to be given so that they are clear and free the teacher to be able to manage the practical situation.*

Textbooks

The new textbooks and teaching manuals represent a much-needed improvement in quality.

The writers are generally experienced secondary school teachers although they do not have sufficient training on didactical and pedagogical matters related to producing school textbooks.

Interviews with the science and mathematics teams at P.R.D. indicate the need for support that is targeted to need.

Areas specifically identified are:

- English for scientific purposes in order that reference materials that are currently being used to support the science and maths writers can be accessed and used appropriately.
- Need for input regarding the curriculum development process.

- Establishing specific learning objectives relating to the new curricula and in determining the levels of knowledge required at each stage.
- Exemplar material on how the teachers manual can be structured so that teachers in schools are able to access and use it.
- Input on the process of curriculum mapping so that links between science disciplines can be made apparent and cross subject links exploited to enhance learning.
- Access to support aimed at helping writers with practical work suggestions in order that the writers can understand the demands implicit within suggesting practical work. This would also allow a consideration of the use of naturally occurring materials to support science applications based science.
- Practical work suggestions need to be relevant in terms of the learning outcomes, practical work should not just be tacked onto a piece of text but should be considered in terms of relevance.

Comments received from science and maths teachers indicated that there needed to have been field research and pre-testing of teachers manuals as most teachers report that they are not currently utilising the teachers manuals as they find them difficult to access and to utilise within the context of their classrooms.

The earlier textbooks produced would also frequently contain incorrect information and as teachers in schools are so dependent upon the textbook this was perceived by the teachers interviewed as being a major issue.

Teacher training in textbook utilisation was too short and there has been no system for follow-up following the initial training of approximately 10 days T.O.P.

There is a need for study on the integration of practical work and one approach may be through the BETP Research Component. However specific and focused studies may warrant funding and attention through alternative routes..

Some issues related to this issue remain:

- Would a review of the current TX contain relevant experimental suggestions in relation to learning Objectives?
- Are the writers confident that the experiments are realistic?
- Are the writers aware of the need to develop practical skills in terms of skill sophistication required and is this going to be explicit within the book?

The instructions for practical work contained within the textbook would need to have the above information for teachers and capacity is such that they would need this detail as a minimum in order to carry out effective practical work.

This places great responsibility on the textbook, as existing culture is to follow the TX rigidly with little initiative on behalf of the teachers.

Technical assistance for Khmer, Mathematics & Science textbook and teacher manual production take the form of 54 person months, to be concentrated in 1997 & 1998 and

that this technical assistance focus on support for the writers in the production of textbooks and on teacher manual production. (UNICEF component of BETP PAM)

Progress has been made in the area of Khmer and Mathematics but the science input has existed only for the past 2 months and this person has had to advise on all aspects of science.

A continuation or enhancement of this support is important if considered alongside the fact that science is not one subject but is in fact four separate and distinct subjects, Biology, Chemistry, Physics & Earth Science.

It is not known how long this technical assistance is to continue for but there already exists a disproportionate allocation of support between the three subjects if technical assistance finishes in 1998 as originally indicated.

Given the conditions above it is not surprising that the science textbooks require additional support and in the light of these arguments the writers at PRD should be commended for their proactive and committed approach to their work.

This commitment is more laudable when considered within the context that some members of the writing teams interviewed reported that financial remuneration was not equitably distributed.

The science textbook committees have worked with insufficient supervision for the past three years largely due to the difficulties in locating candidates as international consultants.

In the wider sphere of International technical assistance, there is a requirement for the textbooks to be translated into English in order for a comprehensive analysis to be made and, given that the role of the technical assistance is to support the increase in capacity of the writers, there has to be accurate and valid comment based on textbooks that are well understood.

The writers are loosely following a curriculum that was developed for primary and lower secondary schools (see notes on curriculum). However at the time of reporting production of the Year 10 – 12 textbooks is continuing in accordance with timescale established by MoEYS despite the fact that there is no comprehensive curricula and no syllabi developed for science.

It is not surprising that the writers are struggling as the scientific demands regarding knowledge increase when they have no guidance or framework in the form of curriculum documentation.

CURRICULUM

The Cambodian curriculum is currently based on a subject centred design where the teaching of an established body of content that has been derived from the accumulated wisdom of the academic disciplines.

The implementation of change from the old to the new curriculum has meant a disruption of the status quo and the challenge for all involved is in taking the curriculum documentation and putting it into practice.

In order for the new curriculum in Cambodia to be institutionalised the curriculum needs to be accepted and utilised.

It is to be expected that in the short term any new curriculum will experience difficulties and the extent to which this occurs can generally reflect the effectiveness of the curriculum developers to meet the needs of the teachers in the classroom.

The majority of curriculum implementation fails due to the lack of a systematic implementation procedure or when one or more steps in that procedure is less effective in terms of need delivery.

In order to respond to the challenge of implementation some review and modification will become necessary to take into account:

- the varying nature of students in schools
- differing teacher capabilities
- varying resource levels
- Community support in its widest sense.

Modifications that are made to the science and maths curriculum may be small or substantial dependent upon how well the developers have completed their task and the degree to which adjustments may have to be made will reflect the willingness and capabilities of both the developers and those providing support to accommodate change.

To attempt to determine that science curriculum development is a static process would do little to enhance the quality of science education for students in Cambodia.

The main question to be asked when considering modification is to ask whether or not the intervention is meeting the needs of the students and teachers within the school context.

During interviews with school directors and teachers it is apparent that there are a number of issues related to curriculum that need to be addressed if the quality of science education is to be raised both for the students and for the teacher.

The current situation is that there has been little awareness of curriculum design issues in the way in which the new science curriculum has been developed.

The curriculum has been developed with no identification of student learning objectives and this has proved difficult for teachers in schools and for curriculum and textbook writing teams.

Teachers in schools in Cambodia have little awareness of the distinction between the curriculum and the textbook and in their eyes the two are synonymous.

The curriculum content has not provided the structure within which the textbook has been developed, rather it has provided a series of broad headings which have guided writers to find related information from good quality, existing textbooks from the Philippines and Singapore and to transfer information to the new science and mathematics textbooks.

A workshop held at the P.R.D. with writers of the science textbooks and science curriculum committees indicated the confusion that exists surrounding definitions of curriculum, syllabus, and textbook and in a meeting held with the science and

mathematics curriculum teams during September 1998, there was uncertainty expressed about the ways in which a syllabus for science could be developed in addition to the feelings of insecurity about how this could relate to, assessment.

There is a clear lack of a relationship between the existing statement of goals and objectives with what has actually appeared within the textbooks themselves particularly in terms of the application of learning to everyday experience and the use of resources that are naturally occurring and available.

Some of the problems currently presented by the new curriculum relate specifically to the ways in which it has been adopted and it is clear that there has not been a successful sharing of vision; quality innovation programme and funding and resources to support implementation

Many of the innovations in curriculum reform in Cambodia have received artificial support in the form of consultants and finance, particularly during the early stages of implementation and effectiveness of intervention can only be measured in terms of how functional the changes would be if this intervention were to be removed.

Any review of the curriculum in its present form needs to consider the HRD needs of the PRD and the varying way in which these needs can be met.

(Appendix 6 presents a simplified model for thinking initially about the curriculum process)

There are currently a number of expert created curriculum packages but at present teachers do not perceive the value of these materials and have differing perceptions of the reality of their situation, particularly in terms of the need for change and the importance of making it work.

There is little ownership of the new reforms at the classroom level and the priorities for science teachers remain focused on the area of the provision of a quality science experience for students.

The role of the T.O.P. therefore would assume a new significance in that it would serve to inform of this need for change and would introduce the rationale behind it, however the current timeframe for the T.O.P. is quite short and does not provide teachers with the strategies that they need to attempt to teach the new curriculum according to student centred teaching methodologies. This has meant that the T.O.P. has resulted in low methodological outcomes.

Appendix I

Type of school	Province	Name of school	School code no.	Principal	Dates of visits
Primary	Phnom Penh	Bandoh Vichea	12010801010	Khieu Kola	25.05.98/27.05.98
Lower sec.	Phnom Penh	Prek Liep	12060802703	Vong Sovonn	25.05.98/28.05.98
Upper sec.	Phnom Penh	Preah Sisovath	12030302901	Seng Line	26.05.98/29.05.98
Primary	Kandal	Kdei Ta Koy	8021201038	Koam Kimny	12.05.98/15.05.98
Lower sec.	Kandal	Prek Sdei	8041002703	Va Meng	13.05.98/18.05.98
Upper sec.	Kandal	Srok Phnom Penh	8080101901	Hang Chhum	12.05.98/19.05.98

GROUP DISCUSSION - TEACHER'S

Name of School :

Province :

STATISTICS

How many classes do you teach in :

One Day

One Week

EDUCATIONAL BACKGROUND

What formal qualifications do you have ?

Where did you receive training for teaching ?

Do you consider the training that you received to be adequate preparation for teaching ?

Identify improvements that you feel could be made to teacher training in science & maths

MOTIVATION

What was your motivation for entering teaching ?

CURRICULUM

Are you involved in teaching the new science curriculum ?

What are your opinions about the new science curriculum ?

Do you use the curriculum as a guide to teaching in maths & science?

Does the new curriculum involve suggestions for practical work ?

Have you received any training about how to adapt a curriculum to be taught ?

Do you spend equal amounts of time in teaching science & maths ?

CROSS CURRICULAR LINKS

When teaching science are you aware of the links that can be made with other subjects ?

If yes, do you attempt to incorporate these into your teaching ?

Do you teach aspects of : Health education
Environmental education
Technology
in your science teaching ?

TEXTBOOKS

What textbooks do you use in science & maths ?

Does each student have access to one textbook ?

Has your school received copies of the new textbooks?

What is your opinion of the new textbooks ?

Do you teach any science or maths that is not in the textbooks ?

RESOURCES

Do you have access to any apparatus to support the teaching of science & maths ?

Do you carry out science practical work ?

Do you have dedicated rooms for teaching science & maths ?

Do you ever use resources of your own in science & maths ?

Do you ever use natural or local resources when teaching science & maths?

TEACHING & LEARNING

How would you describe the way that you teach ?

Do you think it is more important for the teacher to talk more than the students ?

Do you use models as a way of teaching in science & maths ?

Do you use practical work as a way of teaching in science & maths ?

Do you feel confident about using practical work in your teaching ?

Have you received any INSETT or support in using practical approaches to teaching science & maths ?

Do you meet as a team of teachers to discuss new ideas or approaches to teaching ?

Baseline Study in Science & Mathematics Education, 1998

What teaching techniques do you use when teaching ?

Do you discuss common approaches to teaching science & maths ?

ASSESSMENT

Do you ever ask students to complete work outside of school ?

Do you use tests to establish learning in your students ?

If yes, how often ?

Do you keep a record of these test results ?

Do you feedback to students on specific areas of strength / weakness ?

What support do you offer to students who are having difficulties in learning science or maths ?

Have you been involved in the preparation of questions for the Year 9 & 12 examinations for 1998 ?

What percentage of your students do you think will pass their exams in science & maths ?

Have you been offered support in how to write a test for students ?

Do you feel confident of the ways in which you can test students in class ?

PRIVATE ACTIVITY

Do you teach in a private school ?

How often do you teach privately ?

Do you have any employment other than teaching ?

TARGETS FOR FUTURE CAREER DEVELOPMENT

What are your future plans for career development ?

Would you like to receive training in science & maths teaching ?

Identify areas of INSETT that you would like to see being offered

Quality Indicators for Lesson Observation

A Lesson Plan	<p>The teacher has a <u>realistic plan</u> of what she / he will teach. She / he has a clear <u>objective</u> for the lesson which says what the students are going to learn. She / he <u>uses the plan</u> during the lesson, and afterwards to check if she / he was successful.</p>
A Shape to the Lesson	<p>There is a <u>clear progression</u> to the lesson, a beginning and an end. There are <u>stages</u> which lead the student to greater learning. There is a sense that the students are learning something.</p>
Variety of techniques and activities.	<p>Students' learning styles are different. The teacher recognises this and maintains interest and learning using a <u>variety</u> of activities, teaching techniques and materials (eg. the blackboard and the textbooks). She / he is creative and the lesson has good <u>pace</u>.</p>
Management and control of the class.	<p>The teacher gives <u>clear instructions</u> and checks that they are understood. She / he <u>monitors</u> and moves around the class. She / he uses students names, maintains eye contact and encourages the involvement and purposeful interaction of <u>all</u> students.</p>
Student Involvement	<p>The teacher encourages student involvement by limiting the time she / he talks, inviting students to speak, not interrupting, etc. She / he uses techniques like questioning, problem-solving, etc. that encourage independent thinking, active learning and creativity. She / he uses groupings that encourage <u>participation</u> and interaction between students. She / he develops a positive attitude among the students towards learning.</p>
Ability in the subject taught	<p>The teacher has <u>good competence</u> in what she / he is teaching. She / he knows what the students <u>already</u> know and what they should <u>learn next</u>. She / he shows enthusiasm for the job of teaching and evaluates her / his own teaching.</p>

CLASSROOM OBSERVATION CHECKLIST

COMMUNICATION			
Number	Question	Yes	No
1	The teacher shows a friendly attitude		
2	The teacher has developed an active listener role		
3	The teacher presents a confident role image		
4	The teacher uses relevant subject matter		
5	The teacher uses everyday language		
6	The teacher explains key concepts		
7	The teacher varies voice, tone & pitch		
8	The teacher uses repetition to emphasise key points		
9	The teacher develops eye contact		
10	The teacher uses the first names of students		
11	The teacher encourages students to express their views		
12	The teacher has taught group skills		
EXPLANATION			
1	The teacher informs students of learning objectives		
2	The teacher reviews knowledge and concepts		
3	The teacher provides an interesting introduction		
4	The teacher avoids hurrying new content		
5	The teacher avoids technical language		
6	The teacher uses diagrams to illustrate content		
7	The teacher can be seen and heard by students		
8	The teacher insists on close attention		
9	The teacher keeps explanations precise		
10	The teacher demonstrates content in a variety of ways		
11	The teacher encourages students to act as tutors		
12	The teacher varies explanation and demonstration		
13	The teacher has enthusiastic delivery		
14	The teacher has a warm and responsive style		
MOTIVATION			
1	The teacher sets realistic goals and gives reinforcement		
2	Activities challenge students to achieve		
3	The teacher ensures feelings of success		
4	Teacher uses popular activities		
5	Teacher uses verbal forms of encouragement		
6	Teacher comments positively and avoids criticism		
7	Teacher displays evidence of achievement		
8	Teacher avoids the use of punishment		
QUESTIONING			
1	The teacher ensures that questions are relevant		
2	The teacher asks questions that can be answered		
3	The teacher uses direct and clear language		
4	The teacher asks questions focused on key points		
5	The teacher asks one question at a time		
6	The teacher asks questions in a logical sequence		

7	The teacher leaves time for answers		
8	The teacher does not favour some students		
9	The teacher questions in a positive way		
10	The teacher encourages students who have difficulty		
11	The teacher will accept alternative answers		
12	The teacher re-phrases questions if necessary		
13	The teacher provides support for incorrect answers		
WORKTASKS			
1	Tasks involve a range of activities		
2	Work tasks are meaningful		
3	Work tasks are interesting		
4	Work tasks include new content and review old.		
5	Tasks are varied in content and format		
6	Tasks challenge the most capable students		
FEEDBACK			
1	The teachers use feedback to inform students of levels		
2	Feedback is provided on an individual basis		
3	Feedback is varied to suit individual needs		
4	Feedback is at an appropriate level		
5	Feedback includes suggestions for improvement		
6	Feedback provision is immediate		
ASSESSMENT			
1	Teacher pre-tests to determine levels of knowledge		
2	Teacher uses continuous assessment strategies		
3	Teacher utilises summative and formative strategies		
4	Teacher uses assigned tasks to assess capability		
5	Teacher tests for a variety of outcomes		
6	Teacher has a complete set of records		
7	Teacher uses assessment to inform planning		
8	Teacher involves students in their assessment		
9	Teacher keeps assessment information confidential		

QUALITY OF TEACHING & LEARNING IN SCIENCE

PREPARATION & OBSERVATION SCHEDULE

27.04.98	Review of literature Introductory section to study
28.04.98	
29.04.98	
30.04.98	
01.05.98	HOLIDAY

	am	pm
04.05.98		
05.05.98	Devise group discussion checklist for teachers	
06.05.98	Devise lesson observation sheet	
07.05.98	Devise questionnaire for science data	
08.05.98		

KANDAL PROVINCE

	PRIMARY	LOWER SECONDARY	UPPER SECONDARY
11.05.98		ITSAK BOCHEA DAY	
12.05.98	Pre-visit / am		Pre - visit / pm
13.05.98		Pre-visit / am	
14.05.98		CHRAT PREAH NEANG KAL	
15.05.98	Visit am & pm		
18.05.98		Visit am & pm	
19.05.98			Visit am & pm
20.05.98	Analyse data		
21.05.98	Write up findings		
22.05.98			

PHNOM PENH MUNICIPALITY

	PRIMARY	LOWER SECONDARY	UPPER SECONDARY
25.05.98	Pre - visit / am	Pre-visit / am	
26.05.98			Pre - visit / am
27.05.98	Visit am & pm		
28.05.98			
29.05.98			Visit am & pm

01.06.98	
02.06.98	Visit am & pm
03.06.98	
04.06.98	Analyse data
05.06.98	Write up findings

Baseline Study In Science & Mathematics Education, 1998

QUALITY OF TEACHING & LEARNING IN SCIENCE

SCHOOLS SELECTED AT RANDOM FOR OBSERVATION

Type of school	Province	Name of school	School code no.	Principal	Dates of Pre-visit	Date of visit
Primary	Phnom Penh	Bandeh Vichea	12010801010	Khieu Kola	25.05.98	22.05.98
Lower sec.	Phnom Penh	Prek Liep	12060802703	Vong Sovann	28.05.98	28.05.98
Upper sec.	Phnom Penh	Preah Sisovath	12030302901	Seng Lim	26.05.98	22.05.98
Primary	Kandal	Kdei Ta Koy	8021201038	Kam Kinny	12.05.98	15.05.98
Lower sec.	Kandal	Prek Sdei	8041002703	Va Meng	13.05.98	18.05.98
Upper sec.	Kandal	Srok Phnom Penh	8080101901	Hang Thum	12.05.98	19.05.98

KANDAL PROVINCE

TIMETABLE OF VISITS

KDEI TA KOY - 15.05.98

TIME	SCHEDULE
7.00	Meet with teachers
7.30	Lesson Observation
9.00	Meet with director

FREK ANCHANG - 18.05.98

TIME	SCHEDULE
7.00	Meet with director
8.00	Lesson Observation
9.00	Meet with teachers

SROK PHNOM PENH - 19.05.98

TIME	SCHEDULE
7.30	Meet with director
8.00	Meet with teachers
9.00	Lesson Observation - Grade 12 Maths
9.30	Lesson Observation - Grade 11 Biology

KANDAL PROVINCE

TIMETABLE OF VISITS

15.05.98

TIME	SCHEDULE
7.00	Meet with teachers
7.30	Lesson Observation
9.00	Meet with director

18.05.98

TIME	SCHEDULE
7.00	Meet with director
8.00	Lesson Observation
9.00	Meet with teachers

19.05.98

TIME	SCHEDULE
7.30	Meet with director
8.00	Meet with teachers
9.00	Lesson Observation Grade 12 Maths
9.30	Lesson Observation Grade 11 Biology

CURRICULUM PROCESS

The model below shows a possible approach to the beginning of the process of curriculum development.

It has been shown that the areas identified in the model below are necessary determinants in establishing a framework within which effective curriculum development can take place.

This is a core ingredient in the curriculum development process and can be seen as a process involving the following components :

- Aims, goals and objectives
- Subject matter and content
- Learning activities
- Evaluation

The ways in which these components are brought together as a unified whole constitute curriculum design.

Curriculum design will normally take place at the beginning of the curriculum development process and is usually a deliberate activity.

It is important that although most teachers see curriculum design as only the pattern of content that there is an appreciation of all of the curriculum elements and is an extremely important task.

The science curriculum in Cambodia has been developed from a bottom up approach with little awareness of the expected student competencies that are expected to be achieved by the end of schooling whether at Grade 9 or Grade 12.

The reform of any aspect of reform of secondary education may need to be approached from the relative feasibility of implementation and this should always be an important factor in the decision making process.

Whilst it may be argued that facilities in secondary schools may be of a higher standard than at primary level the reality is that there is over-crowding, poorly maintained buildings, paucity of laboratory equipment and other teacher / learner materials.

Therefore the management of the delivery of interventions needed to be made easier in magnitude and relatively more accessible.

Prior to attempting implementation of any change or reform eg. Child centred learning / new curricula - a trial run may be desirable in order to determine and establish the processes involved, namely :

- Planning*
- Communications*
- Delivery*
- Monitoring*
- Quality Assurance*
- Evaluation*
- Feedback*

These would need to be considered within the parameters of content, procedures, regulations, infra-structure, human resource development, financial outlay, timing and critical path analysis.

A phasing of any further developments in science education needs to take place.

It is undoubtedly the case that updating levels of science knowledge at the secondary level will mean in practice that there needs to be a concurrent update of the knowledge of the curriculum designers, textbook writers and teacher educators so that up to date content will appear in the textbooks and the new teachers being trained will possess this up to date information on content and process.

Whilst the updating of teachers scientific knowledge continues the reforms can continue. The processes for thinking in a scientific context may be developed using existing subject content regardless of how old this content is considered to be.

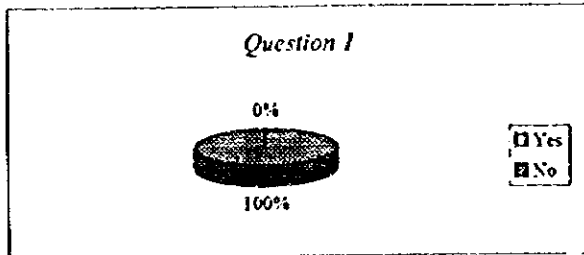
Whilst the updating process has progressed the thinking processes may be applied there too.

This staggered strategy is resource saving, but also the impact of the shock associated with large-scale change can be reduced for many of those involved in the delivery of science education.eg. New curriculum demands on teaching methodologies.

New content and methodology are not necessarily obstacles to be overcome simultaneously.

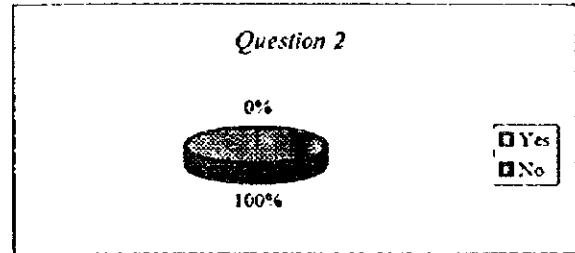
ASSESSMENT

Frequency	Percentage	Tally
Yes	0	0
No	100	28



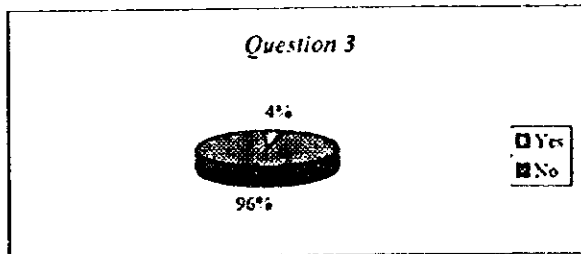
Teacher pre-tests to determine levels of knowledge

Frequency	Percentage	Tally
Yes	0	0
No	100	28



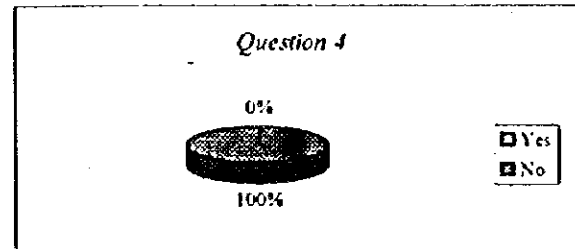
Teacher uses continuous assessment strategies

Frequency	Percentage	Tally
Yes	3.6	1
No	96.4	27



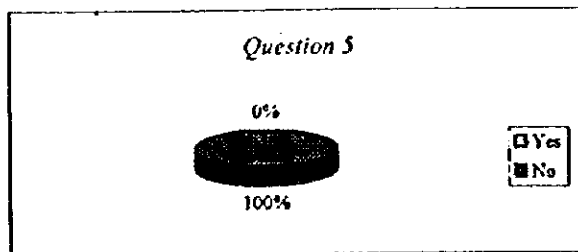
Teacher utilises formative & summative strategies

Frequency	Percentage	Tally
Yes	0	0
No	100	28



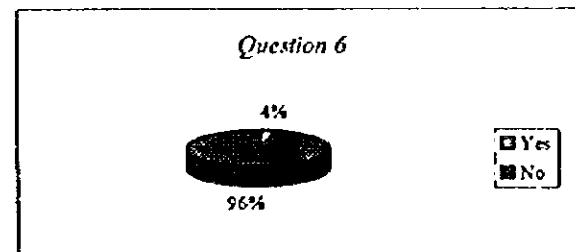
Teacher uses assigned tasks to assess capability

Frequency	Percentage	Tally
Yes	0	0
No	100	28



Teacher tests for a variety of outcomes

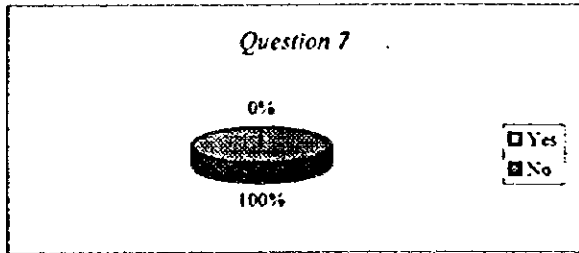
Frequency	Percentage	Tally
Yes	3.6	1
No	96.4	27



Teacher has complete sets of records

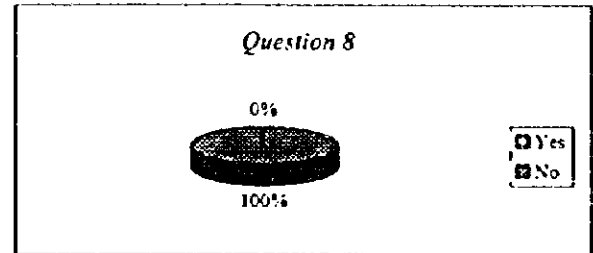
ASSESSMENT

Frequency	Percentage	Tally
Yes	0	0
No	100	28



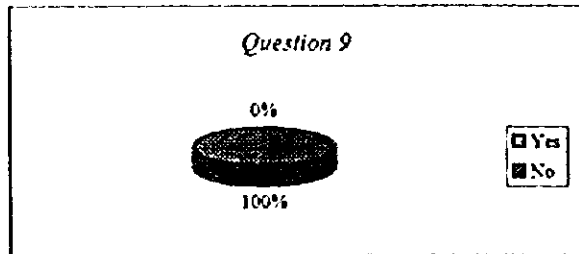
Teacher uses assessment to inform planning

Frequency	Percentage	Tally
Yes	0	0
No	100	28



Teacher involves students in their assessment

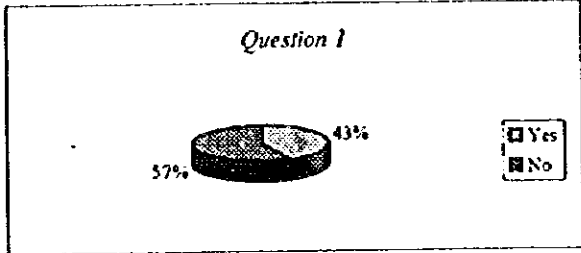
Frequency	Percentage	Tally
Yes	0	0
No	100	28



Teacher keeps assessment information confidential

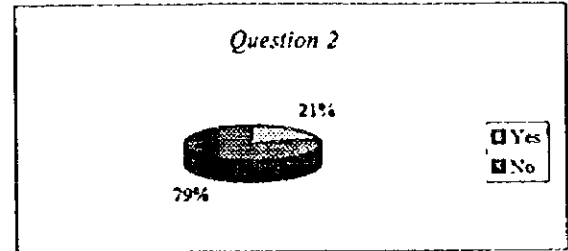
COMMUNICATION

Frequency	Percentage	Tally
Yes	42.9	12
No	57.1	16



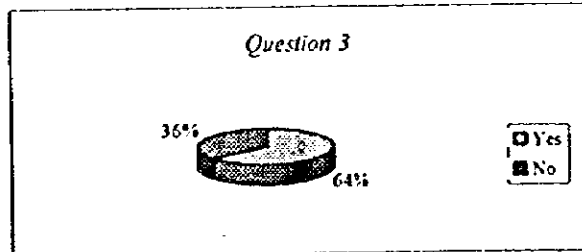
The teacher shows a friendly attitude

Frequency	Percentage	Tally
Yes	21.4	5
No	78.6	22



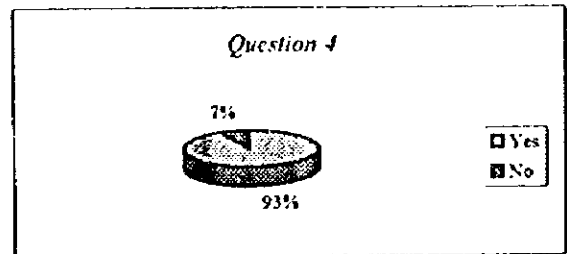
The teacher has developed an active listener role

Frequency	Percentage	Tally
Yes	64.3	18
No	35.7	10



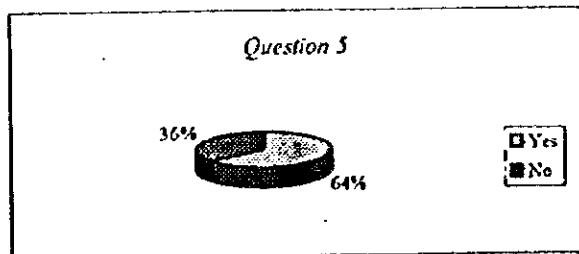
The teacher presents a confident role image

Frequency	Percentage	Tally
Yes	92.9	26
No	7.1	2



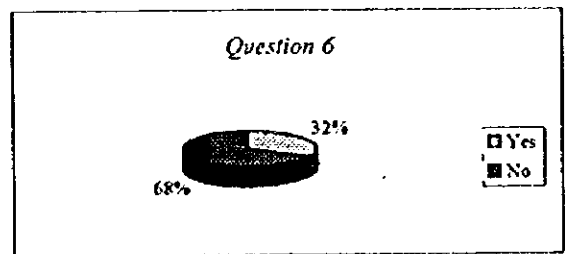
The teacher uses relevant subject matter

Frequency	Percentage	Tally
Yes	64.3	18
No	35.7	10



The teacher uses everyday language

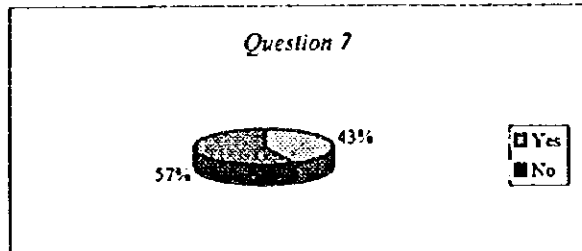
Frequency	Percentage	Tally
Yes	32.1	9
No	67.9	19



The teacher explains key concepts

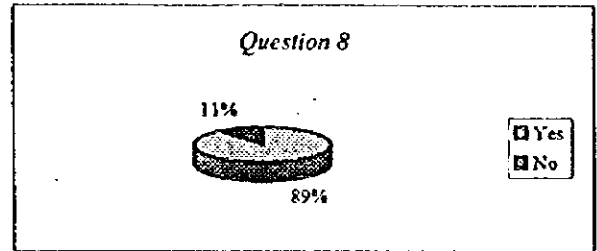
COMMUNICATION

Frequency	Percentage	Tally
Yes	42.9	12
No	57.1	16



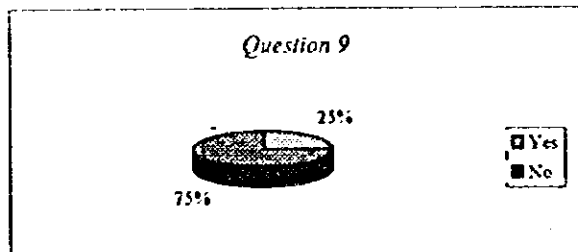
The teacher varies voice, tone & pitch.

Frequency	Percentage	Tally
Yes	89.3	25
No	10.7	3



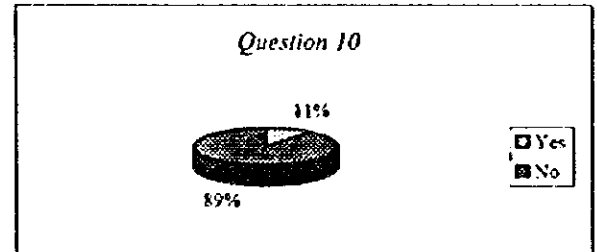
The teacher uses repetition to emphasise key points

Frequency	Percentage	Tally
Yes	25	7
No	75	21



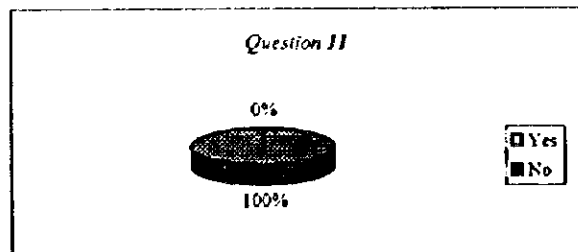
The teacher develops eye contact

Frequency	Percentage	Tally
Yes	10.7	2
No	89.3	25



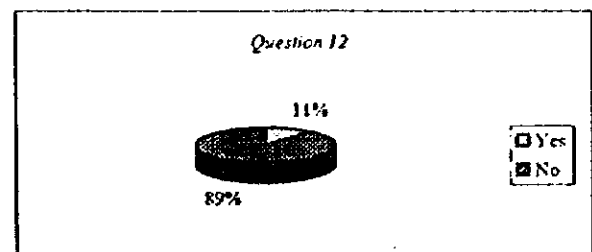
The teacher uses first names of students

Frequency	Percentage	Tally
Yes	0	0
No	100	28



The teacher encourages students to express views

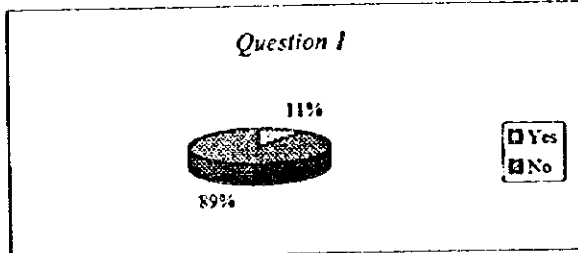
Frequency	Percentage	Tally
Yes	10.7	3
No	89.3	25



The teacher has taught group skills

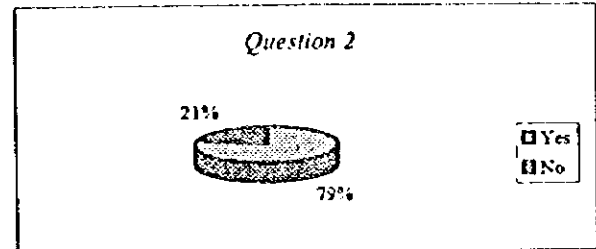
EXPLANATION

Frequency	Percentage	Tally
Yes	10.7	3
No	89.3	25



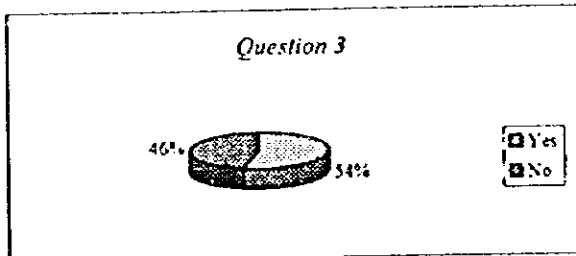
The teacher informs students of learning objectives

Frequency	Percentage	Tally
Yes	79	22
No	21	6



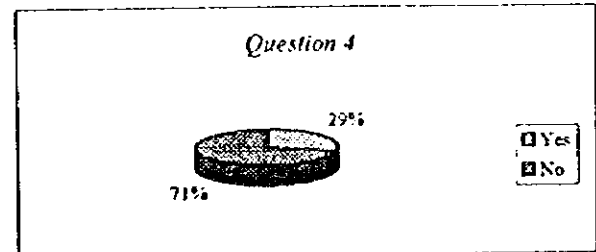
The teacher reviews knowledge & concepts

Frequency	Percentage	Tally
Yes	53.6	15
No	46.4	13



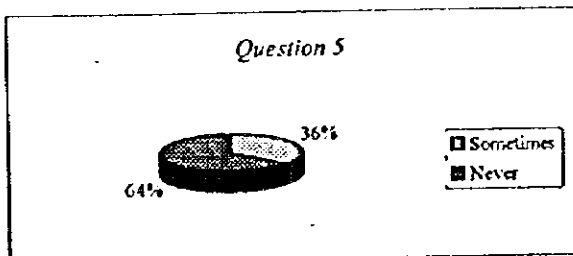
The teacher provides an interesting introduction

Frequency	Percentage	Tally
Yes	28.6	8
No	71.4	20



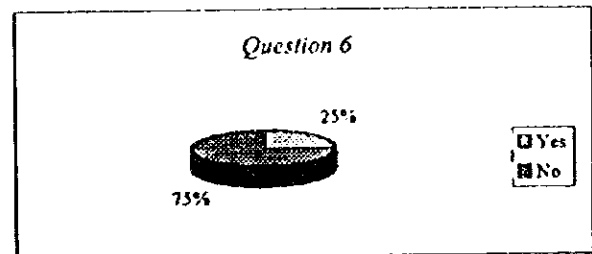
The teacher avoids hurrying new content

Frequency	Percentage	Tally
Sometimes	35.7	10
Never	64.3	18



The teacher avoids technical language

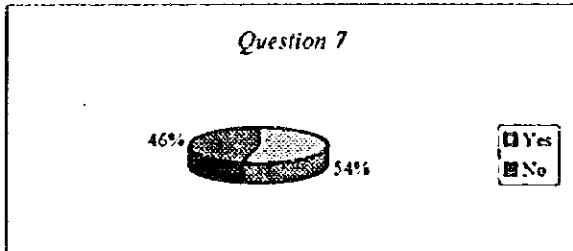
Frequency	Percentage	Tally
Yes	25	7
No	75	21



The teacher uses diagrams to illustrate content

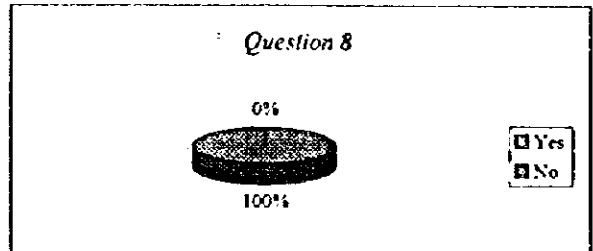
EXPLANATION

Frequency	Percentage	Tally
Yes	53.8	15
No	46.2	13



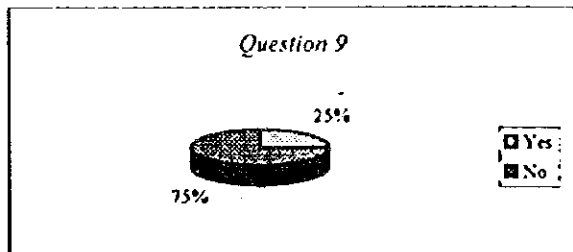
The teacher can be seen & heard by students

Frequency	Percentage	Tally
Yes	0	0
No	100	28



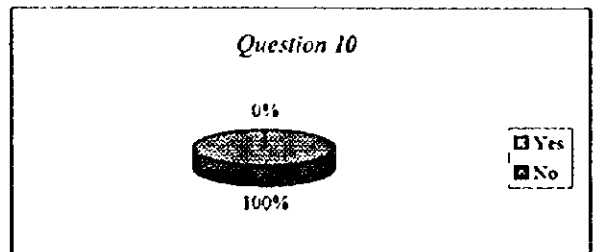
The teacher insists on close attention

Frequency	Percentage	Tally
Yes	25	7
No	75	21



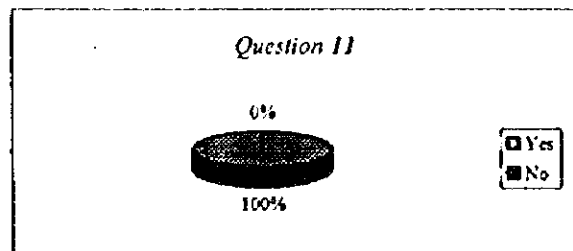
The teacher keeps explanations precise

Frequency	Percentage	Tally
Yes	0	0
No	100	28



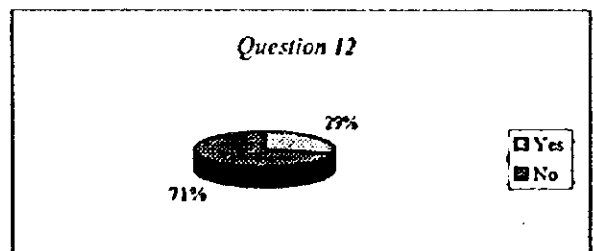
The teacher demonstrates content in a variety of ways

Frequency	Percentage	Tally
Yes	0	0
No	100	28



The teacher encourages students as tutors

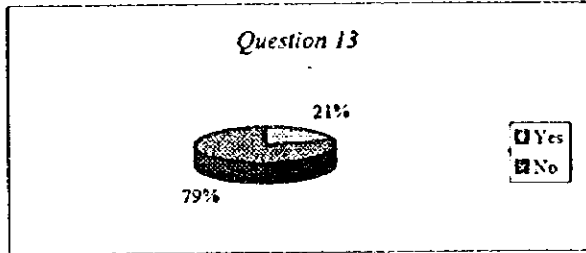
Frequency	Percentage	Tally
Yes	28.6	8
No	71.4	20



The teacher varies explanation & demonstration

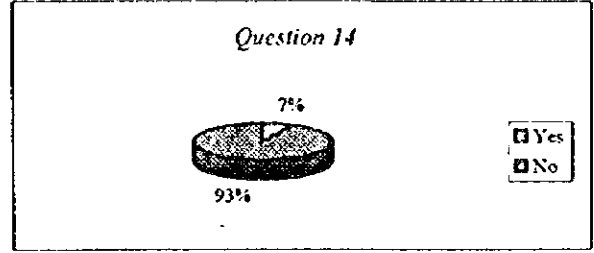
EXPLANATION

Frequency	Percentage	Tally
Yes	21.4	6
No	78.6	22



The teacher has enthusiastic delivery

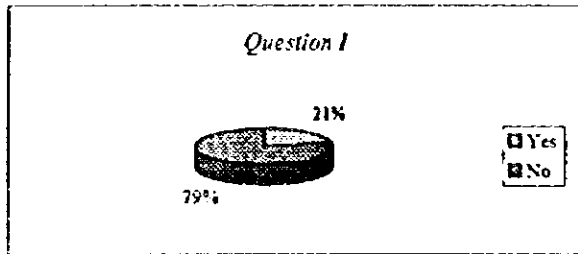
Frequency	Percentage	Tally
Yes	7.1	2
No	92.9	26



The teacher has a warm & responsive style

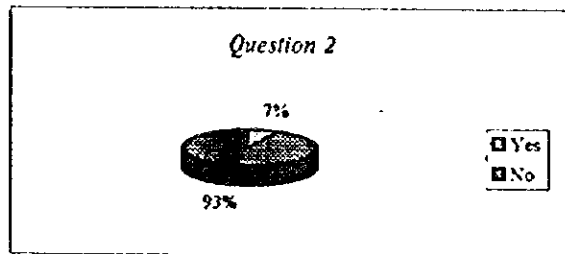
WORKTASKS

Frequency	Percentage	Tally
Yes	21.4	6
No	78.6	22



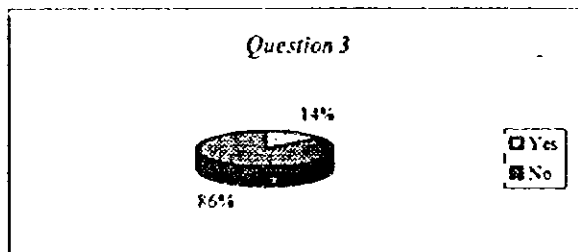
Tasks involve a range of activities

Frequency	Percentage	Tally
Yes	7.1	2
No	92.9	26



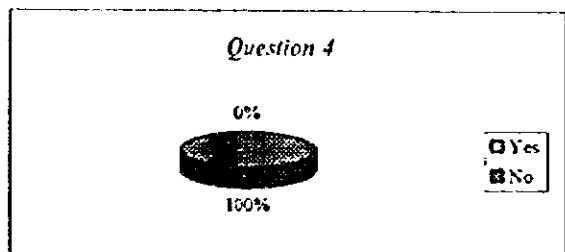
Work tasks are meaningful

Frequency	Percentage	Tally
Yes	14.3	4
No	85.7	24



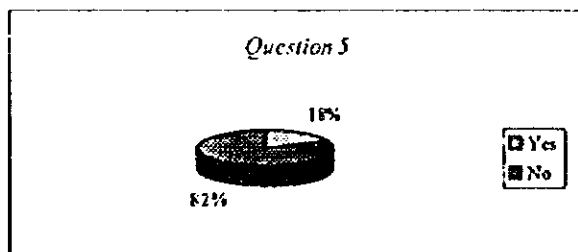
Work tasks are interesting

Frequency	Percentage	Tally
Yes	0	0
No	100	28



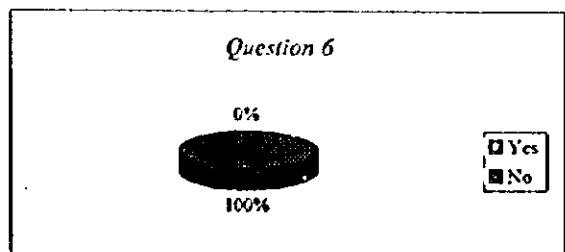
Work tasks include new content & review old

Frequency	Percentage	Tally
Yes	17.9	5
No	82.1	23



Tasks are varied in content & format

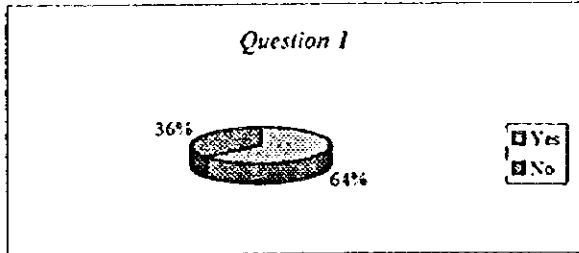
Frequency	Percentage	Tally
Yes	0	0
No	100	28



Tasks challenge the most capable students

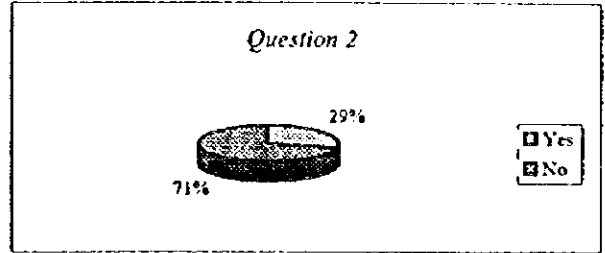
QUESTIONING

Frequency	Percentage	Tally
Yes	64.3	18
No	35.7	10



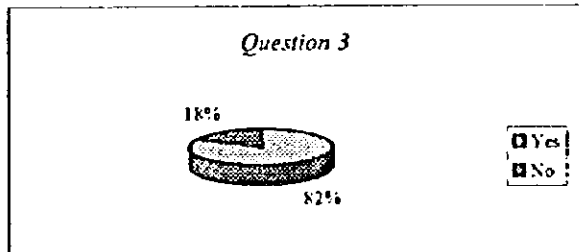
The teacher ensures that questions are relevant

Frequency	Percentage	Tally
Yes	28.6	8
No	71.4	20



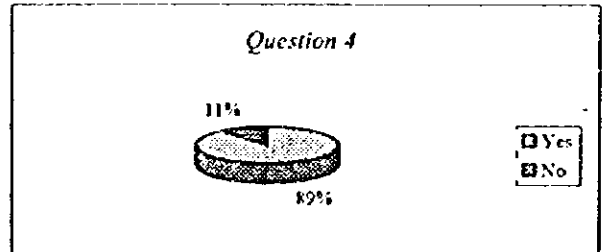
The teachers asks questions that can be answered

Frequency	Percentage	Tally
Yes	82.1	23
No	17.9	5



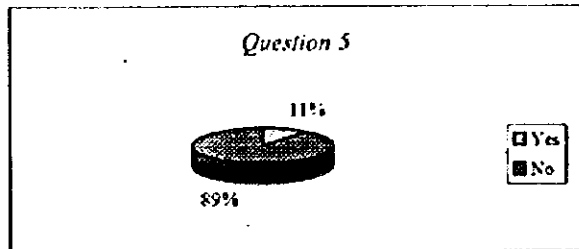
The teacher uses direct and clear language

Frequency	Percentage	Tally
Yes	89.3	25
No	10.7	3



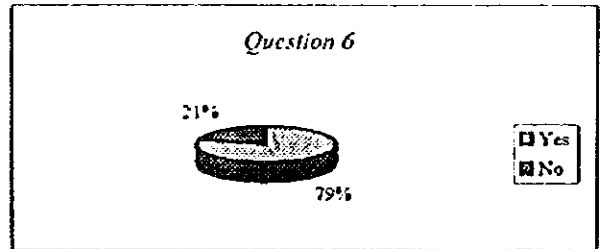
The teacher asks questions focused on key points

Frequency	Percentage	Tally
Yes	10.7	3
No	89.3	25



The teacher asks one question at a time

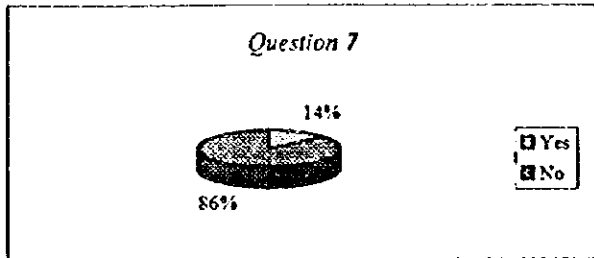
Frequency	Percentage	Tally
Yes	78.6	22
No	21.4	6



The teacher asks questions in logical sequence

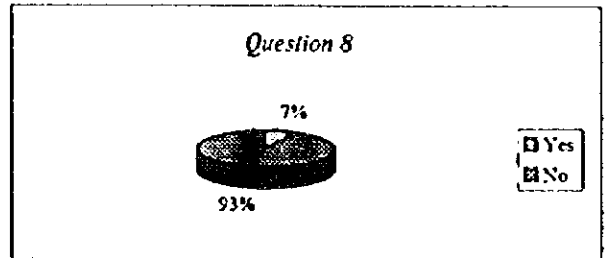
QUESTIONING

Frequency	Percentage	Tally
Yes	14.3	4
No	85.7	24



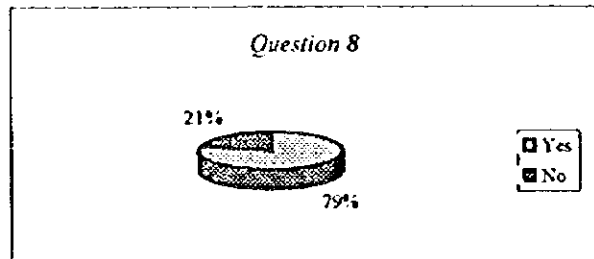
The teacher leaves time for answers

Frequency	Percentage	Tally
Yes	7.1	2
No	92.9	26



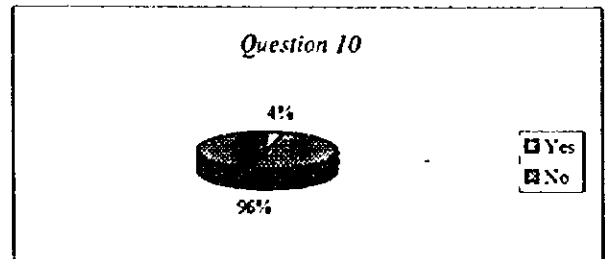
The teacher does not favour some students

Frequency	Percentage	Tally
Yes	78.6	22
No	21.4	6



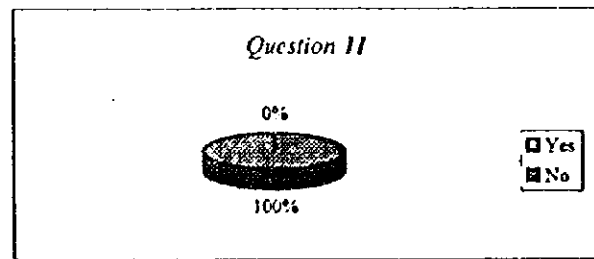
The teacher questions in a positive way

Frequency	Percentage	Tally
Yes	3.6	1
No	96.4	27



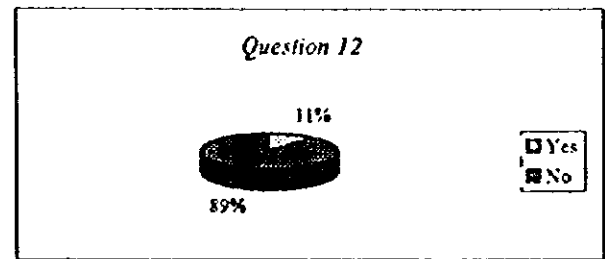
The teacher encourages students who have difficulties

Frequency	Percentage	Tally
Yes	0	0
No	100	28



The teacher will accept alternative answers

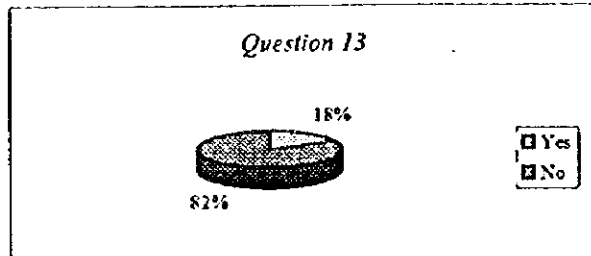
Frequency	Percentage	Tally
Yes	10.7	3
No	89.3	25



The teacher re-phrases questions if necessary

QUESTIONING

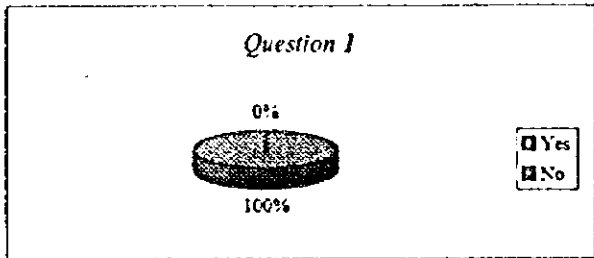
Frequency	Percentage	Tally
Yes	17.9	5
No	82.1	23



The teacher provides support for incorrect answers

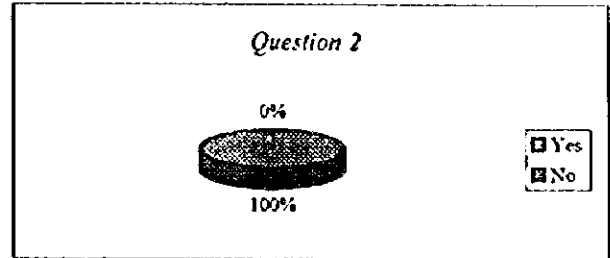
FEEDBACK

Frequency	Percentage	Tally
Yes	0	0
No	100	28



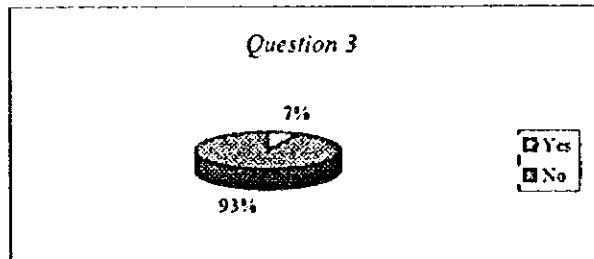
The teacher uses feedback to inform students of level

Frequency	Percentage	Tally
Yes	0	0
No	100	28



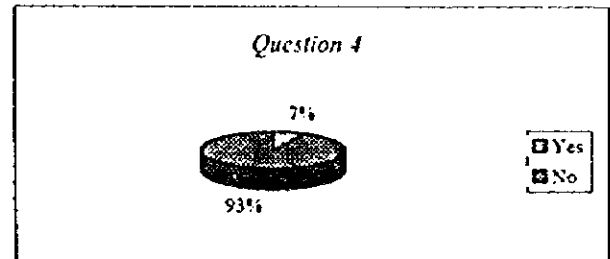
Feedback is provided on an individual basis

Frequency	Percentage	Tally
Yes	7.1	2
No	92.9	26



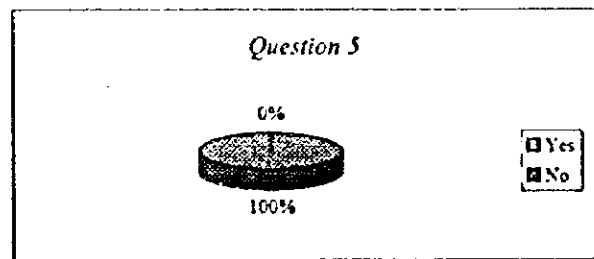
Feedback is varied to suit individual needs

Frequency	Percentage	Tally
Yes	7.1	2
No	92.9	26



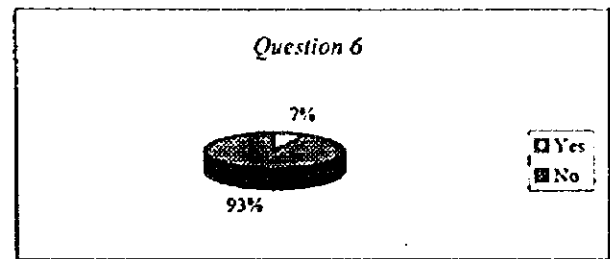
Feedback is at an appropriate level

Frequency	Percentage	Tally
Yes	0	0
No	100	28



Feedback includes suggestions for improvement

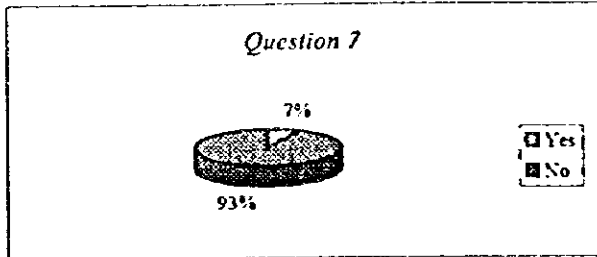
Frequency	Percentage	Tally
Yes	7.1	2
No	92.9	26



Feedback provision is immediate

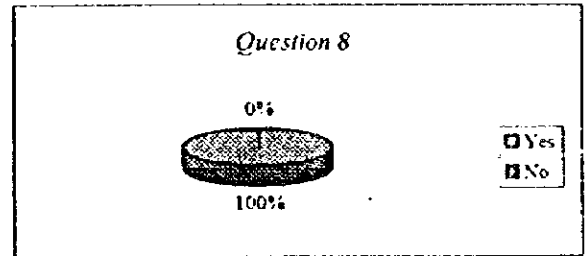
FEEDBACK

Frequency	Percentage	Tally
Yes	7.1	2
No	92.9	26



The teacher provides supportive feedback

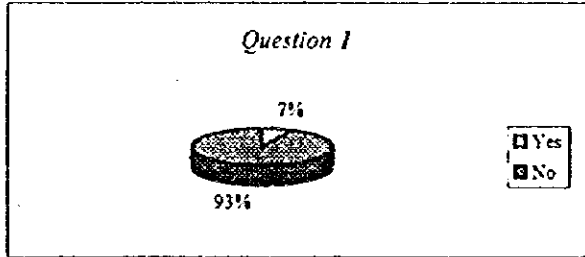
Frequency	Percentage	Tally
Yes	0	0
No	100	28



The teacher keeps records of feedback provided

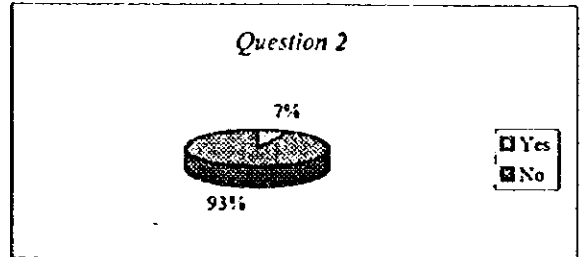
MOTIVATION

Frequency	Percentage	Tally
Yes	7.1	2
No	92.9	27



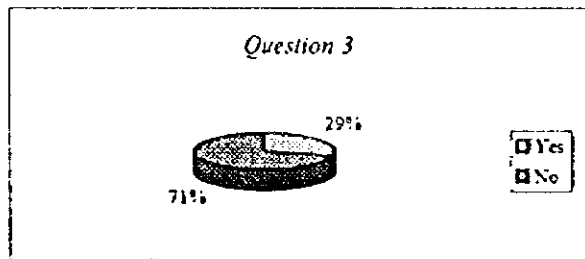
Teacher sets realistic goals & gives reinforcement

Frequency	Percentage	Tally
Yes	7.1	2
No	92.9	26



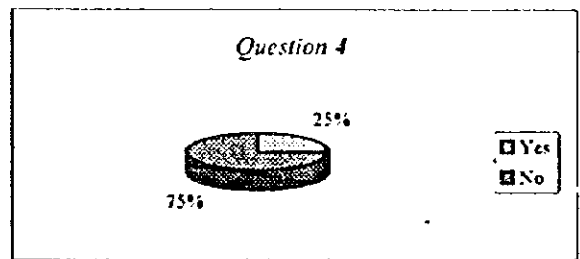
Activities challenge students to achieve

Frequency	Percentage	Tally
Yes	28.6	8
No	71.4	20



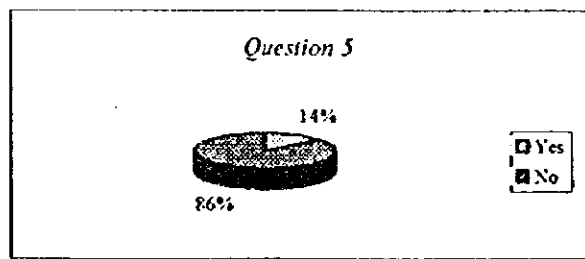
Teacher ensures feelings of success

Frequency	Percentage	Tally
Yes	25	7
No	75	21



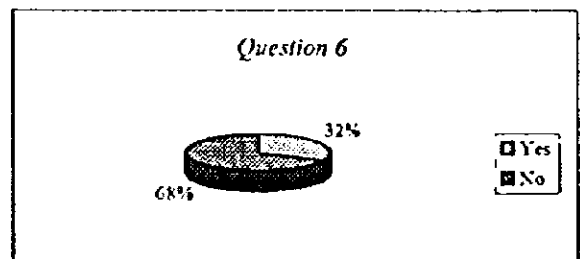
Teacher uses popular activities

Frequency	Percentage	Tally
Yes	14.3	4
No	85.7	24



Teacher uses verbal forms of encouragement

Frequency	Percentage	Tally
Yes	32	9
No	68	19

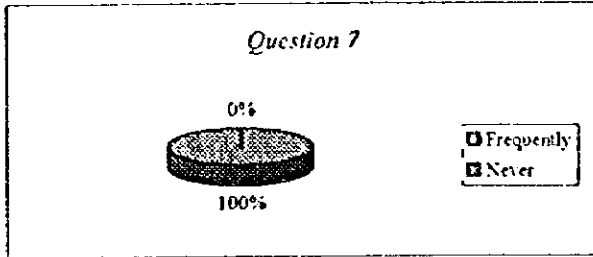


Teacher comments positively & avoids criticism

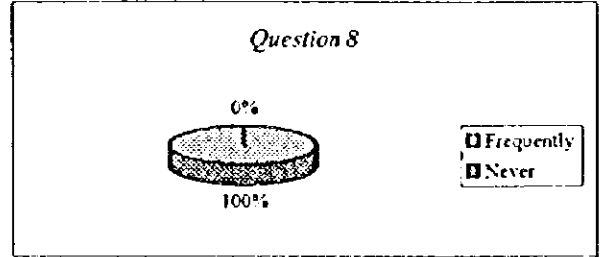
MOTIVATION

Frequency	Percentage	Tally
Frequently	0	0
Never	100	28

Frequency	Percentage	Tally
Frequently	100	28
Never	0	0



Teacher displays evidence of achievement



Teacher avoids the use of punishment

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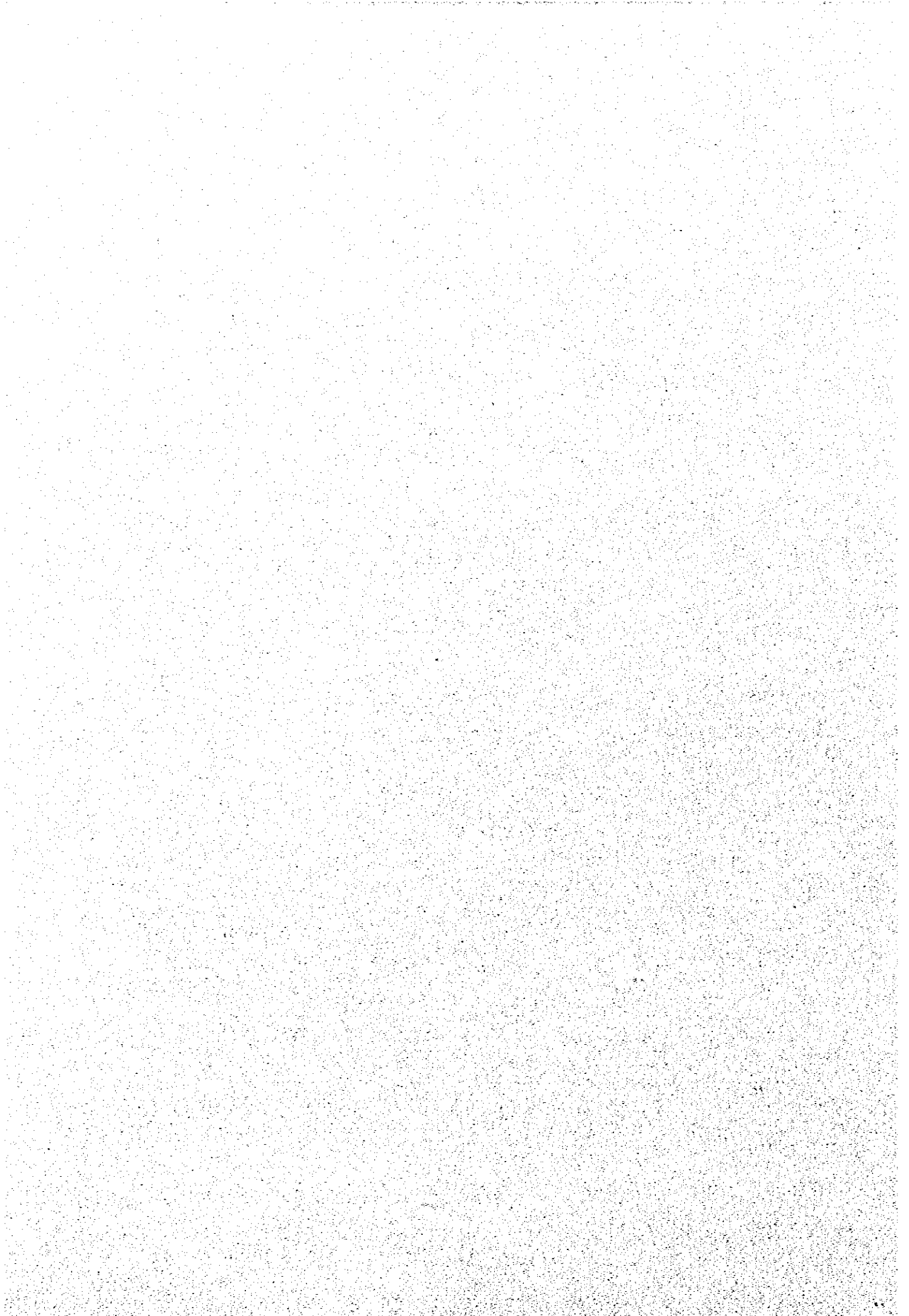
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MoEYS



Kingdom of Cambodia
Ministry of Education, Youth and Sport
Department of Planning

EDUCATION IN CAMBODIA

Training Notes
on Education Planning and Management
(Part I)

Phnom Penh, December 1998
(supported by UNDP/UNESCO)

Acknowledgements

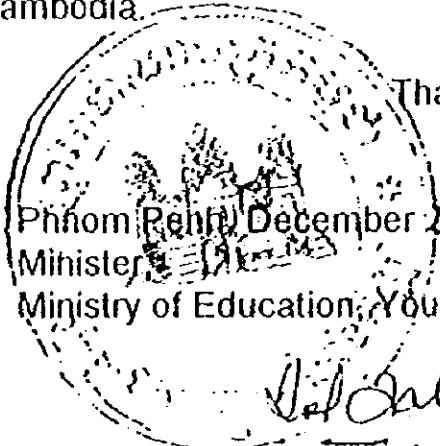
Among the other achievements it has made in recent years, the RGOC/UNDP/UNESCO Project CMB/91/009: "Capacity Building in Education and Human Resources Sector Management" developed seven training modules on Education Planning and Management, and conducted successive training courses for education administrators at central, provincial and district levels.

To make these modules more applicable and accessible, the Project's national team, in cooperation with UNESCO officials and consultants, extracted salient points from the existing modules and re-edited this content into new manuals for immediate use in the training of educational administrators. The contents were summarized into three parts: (1) Education in Cambodia, (2) Education Planning and (3) Education Management.

The Ministry of Education, Youth and Sport would like reiterate its profound gratitude to UNDP and UNESCO for their financial and technical assistance towards the development of the Cambodian education system, and especially in the successful implementation of this human resources development Project. The Ministry appreciates the publication of such valuable manuals which are useful for Cambodian educational administrators at various levels. Special thanks must go to the National Project Director, Senior Project Coordinator, Training Specialist and all national and international staff for having perseveringly devoted their efforts and time to develop these valuable manuals.

We hope that this booklet entitled "Education in Cambodia" will be considered a useful reference as it provides to all donor agencies working within the education sector general information on the development of education in Cambodia.

Thank you
Phnom Penh, December 24, 1998
Minister
Ministry of Education, Youth and Sport



TOL LAH

TOL LAH

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GENERAL BACKGROUND

Natural environment

Cambodia, a country situated in Southeast Asia, shares borders with Vietnam, Laos and Thailand. Cambodia has 440 kilometers of coastal border facing the Gulf of Siam. With a total area of 181,035 square kilometers, the country is about one-third the size of Thailand or 293 times bigger than Singapore.

Cambodia is situated between the Tropic of Cancer and the Equator. The country has a warm and humid climate with an annual average temperature of 28.5°C. There are two different seasons: six months of dry season, from November to April, and six months of rainy season, from May to October. The country enjoys many favorable natural conditions:

- The central low-lying area, which stretches from the northwest to the southeast, is an important agricultural region;
- The chain of mountains standing to the west, to the north and in the eastern plateau shield the country from the effects of various storms and squalls;
- The great lake of Tonle Sap is a natural basin. It is the most important area for river fish;
- The warmth and humidity of the climate bring about the lushness of the vegetation and the forest, which is the habitat of many species of wild animals; and
- Many rich mineral deposits are the future potential resources of the country.

More than 80% of the total population of 11 million live on and derive their incomes from farming based on traditional practices.

Brief history

Period	Events
1 st century	Nokor Phnom epoch (or Funan); influenced by Indian civilization
6 th -7 th centuries	Chen La epoch; split into two regions
9 th -13 th centuries	Moha Nokor epoch; building of numerous temples
1432	Gave up Angkor; moved to Phnom Penh
1516-1564	Moved to Longvek
From mid-19 th century	Cambodia a French protectorate: <ul style="list-style-type: none"> - 1863 Oudong Treaty - Khmer King deprived of some rights of ruling; - 1884 Phnom Penh Treaty - Khmer King was threatened and forced to accept the French protectorate; Cambodia under the full control of the French
Early 20 th century	French General-Governor sent to Indochina; office based in Hanoi and designated to rule five countries: <ul style="list-style-type: none"> - Tongkin, Annam, Cochinchine, Cambodia and Laos - Resident Superior assigned to supervise each country and assisted by provincial resident administrators
1940-1945	World War II; Japanese forces came to rule Indochina; replaced French rulers
1946	War ended. French administrators re-occupied Indochina and implemented new ruling system
1949	French-Khmer Treaty signed. Cambodia was independent in the framework of Indochine Française
1953	Under the Royal Crusade, Cambodia gained full independence
1954	French colonialists defeated in Indochina war at Dien Bien Phu. Geneva Treaty; French colonialists forced to leave Indochina

Government and administrative structure

- *The Kingdom of Cambodia is an indivisible state*
- *The Kingdom of Cambodia follows a policy of permanent neutrality and non-alignment*
- *Legislative Power: The Assembly*
- *Executive Power: The Royal Government*
- *The Judicial is an independent power*

Administratively, the country comprises 20 provinces and four municipalities. The four municipalities are Phnom Penh, Sihanoukville, Kep, and Pailin. The capital city of Phnom Penh consists of seven precincts and is populated by nearly 1 million people.

Provinces (Khet) are subdivided into districts (Srok), and districts into communes (Khum). The municipalities are subdivided into precincts (Khan) and precincts into quarters (Sangkat). Each commune (or Sangkat) is subdivided into villages (or Monduls) and then into groups of families and households. The central administration is the main body handling administrative affairs at municipal/provincial and district or "khan" levels.

The Constituent Assembly was re-established following the UN-sponsored general elections held in 1993 and this elected Constitutional Assembly later became the National Assembly. The Constitutional Assembly developed new laws for the country with the King as Head of State. Citizens exercise their rights through the National Assembly, the Royal Government and the Courts.

The National Assembly consisted of 122 members, including members of Parliament representing Kep and Pailin. Elected for five years, the National Assembly may not be dissolved before the end of its term unless the Royal Government is deposed twice within a period of 12 months.

The Cabinet is led by one Prime Minister, assisted by Deputy Prime Ministers, along with State Ministers, Ministers and Secretaries of State as its members. All members of the Royal Government take collective responsibility for the general policy of the Royal Government before the Assembly.

The Judiciary is an independent power. The Judiciary guarantees and upholds impartiality and protects the rights and freedoms of the citizens. The authority of the Judiciary is granted to the Supreme Court and to the lower courts of all sectors and levels. The King is the guarantor of the independence of the Judiciary. The Supreme Council of the magistracy assists the King in this matter. Judges may not be dismissed but the Supreme Council of the Magistracy is responsible for disciplinary action against any delinquent judges.

Population and economy

Cambodia had a total population of 11.4 million¹, of which 51.78% are women. The majority of the population lives in rural areas and on agricultural production. Only 15.7% of the total population reside in urban areas or towns. The country has an estimated annual population growth rate of 2.4%. The population is likely to double within less than 30 years.

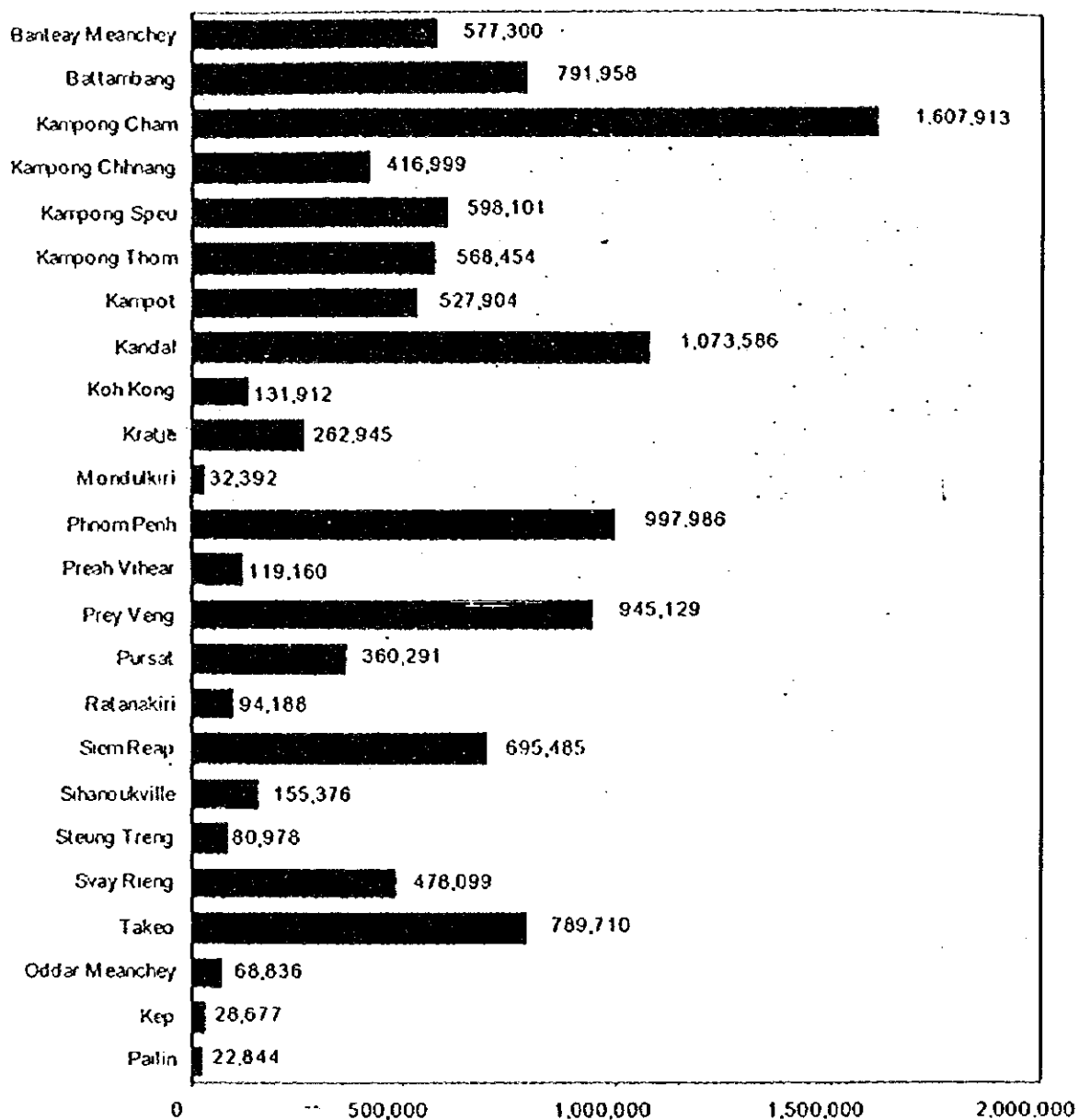
The proportion of children aged below 18 added up to 51.7% of the total population whereas the economically productive age group (18-60) formed only 43% of the population in the country as a whole². The age distribution of the population shows that 54.3% were under 20 years of age, thus creating a heavy burden on society.

Population by age group			
Age Group	Total		
	Both sexes	Male	Female
All ages	100	100	100
0-4	13.4	14.2	12.6
5-9	15.4	16.6	14.4
10-14	15.1	16.3	14.1
15-19	10.4	10.7	10.0

¹ Population statistics quoted from General Population Census of Cambodia 1998: Provisional Population Totals, National Institute of Statistics, Ministry of Planning, July 1998.

² Socio-Economic Survey conducted by National Institute of Statistics, Ministry of Planning, 1997.

**Results of the national census conducted in March 1998
illustrating the number of population by province**



<i>Employment by Sector</i>	
<i>Primary sector</i>	
<u>agriculture</u> : farming, forestry, hunting and fishing:	81.6%
<i>Secondary sector</i>	
<u>industry</u> : mining, factories, manufacturing:	2.8%
<i>Tertiary sector</i>	
<u>services</u> : hotel, trade, education, health	15.6%

A major part of the Cambodian economic output depends on the primary sector. It is an economy based on agriculture using traditional practices and rudimentary tools.

The secondary sector absorbs less than 3% of the labor force as the country still does not have an industrial infrastructure. Most of equipment and materials for local demand are imported from abroad.

It is estimated that the GDP is rising between 7% and 7.5% per annum. However, last year's GDP was considerably decreased. According to economists, the GDP per capita is US \$ 270 per annum. Tax revenues collected by the government for use as the national budget are still very low and equal to only 5.9% of the country's GDP. In neighboring countries such as Thailand and Vietnam, national revenues amount to 16.2% and 19.7% of their GDP respectively.

Other Important Statistics	
Infant mortality rate:	90 per thousand live births
Population growth rate:	2.4%
Life expectancy:	53 years old

EDUCATION SYSTEM

National schemes

The objective of the Cambodian education system is to fully develop children in all aspects of qualities, mentally and physically. In order to achieve this objective, schools need to accomplish many tasks. They are obliged to develop in the students the spirit of self-confidence, self-reliance, responsibility, solidarity, national unity and patriotism. Schools must also instill in their students positive attitudes of paying respect to the law and human rights.

Other responsibilities of schools are to nurture children to become good citizens, to live together peacefully, to be able to strengthen their responsibilities towards their families' happiness and to make a contribution to promoting social welfare.

General education strives to meet the above-mentioned objective by delivering knowledge and skills, promoting the personal qualities of the students, and accumulating work experiences and various activities which are beneficial to students, their schoolmates and to society as a whole.

In consideration of their increasing age, the objective of primary education is to focus on the development of children's personalities by helping to upgrade their mental and psychological abilities. By doing so, children will become capable of translating their basic knowledge (reading, writing, speaking, listening and arithmetic) to solving their immediate problems, and to cherishing a love of learning and doing labor. Through these efforts, they will become useful members of the community and be capable of acquiring simple skills or continuing their study to higher grades.

The prime objective of secondary education is to enhance the knowledge that the students have already acquired at the primary education level. This aims to ensure the development of their freedom of thought and expression, to build their attitude of tolerance, and, at the same time, to develop their talents, individual qualities, creativity, social ethics and skills in order to create a harmonious society.

In short, after receiving basic education students will have grown to full adulthood and be capable of living in society and continuing their study to higher grades as required.

ប្រព័ន្ធអប់រំនៅកម្ពុជា

EDUCATION SYSTEM IN CAMBODIA

23	វិទ្យាល័យ Higher Education វិទ្យាល័យ និង វិទ្យាស្ថាន Universities & Institutes	វិទ្យាល័យ និង វិទ្យាស្ថាន Universities & Institutes • Faculty of Medicine, Pharmacy and Dentistry • Royal University of Fine Arts • Institute of Technology of Cambodia • Fac. of Law and Eco. Sciences • Royal University of Agriculture • Royal University of Phnom Penh • Faculty of Business • Mahanishi Vedic University • Faculty of Pedagogy	ប្រឡងចូល ENTRANCE EXAM	
22				
21				
20				
19				
18	វិទ្យាល័យ Upper Secondary	វិទ្យាល័យ Upper Secondary	ប្រឡងចូល EXAM ឆ្នាំទី១២ Grade 12 ឆ្នាំទី១១ Grade 11 ឆ្នាំទី១០ Grade 10	សិក្សាបច្ចេកទេស និង បណ្តុះបណ្តាលជំនាញ Technical Education and Vocational Training
17				
16				
15				
14				
13				
12				
11				
10	មេឃឹក Primary	មេឃឹក Primary	ឆ្នាំទី៦ Grade 6 ឆ្នាំទី៥ Grade 5 ឆ្នាំទី៤ Grade 4 ឆ្នាំទី៣ Grade 3 ឆ្នាំទី២ Grade 2 ឆ្នាំទី១ Grade 1	
9				
8				
7				
6				មន្ទីរសិក្សាមុនសាលា Community Pre-School
5				
4				
3 អាយុ Age	មន្ទីរសិក្សាមុនសាលា Pre-School	មន្ទីរសិក្សាមុនសាលា Pre-School	ក្នុងជំហានខ្ពស់ High Step ក្នុងជំហានមធ្យម Medium Step ក្នុងជំហានទាប Lower Step	
4				
3				

អប់រំប្រកួតប្រជែង
 NON-FORMAL EDUCATION

Structure of the education system

The Ministry of Education, Youth and Sport (MoEYS) is one of the biggest civil ministries. Activities and services delivered by the Ministry cover the entire country, ranging from central to school levels. The total number of teaching and administrative staff at all levels is about 80,000, or almost half the total number of civil servants in the whole country.

A group of senior officials taking responsibility for political matters and education competencies run the central management or the Office of the Minister. The group includes the Minister, the Secretary of State and Under-Secretaries of State and is assisted by officials with different specializations. The structure is, according to Sub-decree 21 dated 23 March 1998, comprised of four general departments and one general inspectorate with 21 technical departments.

Twenty-three (23) provincial and municipal education services³ are each headed by one director, and deputy directors and their technical offices follow the central department structure. As yet the number of technical offices at provincial and municipal level varies according to the proportion of staff in each province or municipality. Practically, provincial education services are classified into three categories:

- Large provinces/municipalities with teaching and non-teaching staff of 5,000 and above are authorized to set up between 10 and 12 offices;
- Medium-sized provinces/municipalities with teaching and non-teaching staff of 1,000-5,000 are authorized to set up between 7-9 technical offices; and
- Small provinces/municipalities with less than 1,000 teaching and non-teaching staff can establish between 4 and 6 technical offices.

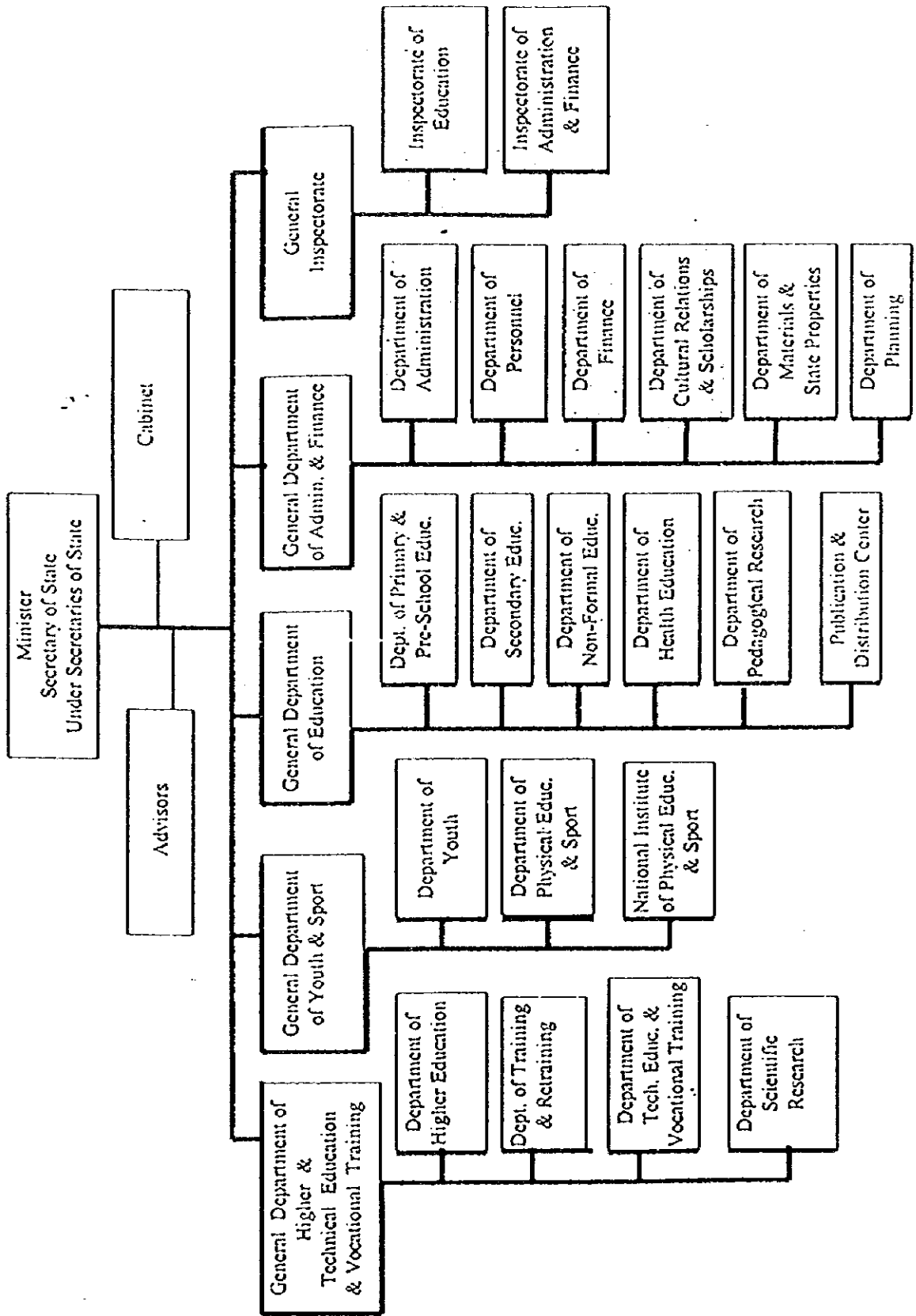
³ In Education, Siem Reap and Oddar Meanchey constitute one province.

The number of sections under each office at district or "khan" level and the number of staff-members must also be in proportion with the total number of teaching and non-teaching staff within each district or "khan".

In practice, the district or "khan" education office supervises all primary schools in the district or "khan", whereas the provincial/municipal education service mainly provides technical guidance to lower-secondary or upper-secondary schools in the province. With a view to proper implementation of the national curriculum, education administrators at provincial/municipal and district or "khan" levels continuously assign teams to inspect schools, and appraise and rate their performance.

ORGANIZATION CHART OF THE MINISTRY OF EDUCATION, YOUTH AND SPORT

1998



Policies on education development

MoEYS defines four major policies as follows:

- *Making nine years of basic general education available throughout the country, and developing new opportunities for functional literacy*
- *Modernizing and improving the quality of the educational system through effective reforms*
- *Linking education and training development with the socio-economic requirements and the labor market*
- *Rehabilitating and developing the youth and sport sub-sectors in both formal and non-formal education systems*

To adopt the above-mentioned policy, the Ministry is paying due attention to the following priority policy objectives:

- To create equal opportunities for school-age children of all regions and all ethnic groups to attend schools so that they have the chance to complete primary education and receive the full nine years of basic education. In this sense, MoEYS will encourage all schools to have a complete range of grades (Grade 1 to Grade 6) for primary education level and encourage schools in the areas where the school-age population is sparse to apply multi-grade teaching methods. At present, about 50% of schools do not have a complete range of grades in the primary cycle.
- To increase the internal efficiency of the education system. This is done by implementing measures such as retraining teachers; increasing the number of learning hours; providing adequate textbooks and teacher's guides; applying modern teaching methodology; forming inspector teams; reforming methods to evaluate students' achievements; and motivating members of the local community to be more active in educational development.
- To restore the physical infrastructure and build new schools. MoEYS will also continue to construct at least one lower-secondary school attached to the core school of each school cluster.

- To develop other important sub-sectors. In parallel with these efforts, MoEYS will also develop other important sub-sectors, including upper-secondary education, higher education, technical education and vocational training in order that more young people may have a chance to further their study in higher grades or to acquire technical skills according to their own interests and talents.
- To enhance all levels of education administration and management in order to increase efficiency and effectiveness in education sector planning, administration, management, and inspection through the implementation of development of human resources programs. Central and provincial levels receive some modern equipment for their use. A number of basic documents are developed and then put into use step-by-step by central and provincial levels. The Ministry is also beginning the process of staff rationalization and the inception of administrative decentralization.
- To organize functional literacy classes and to launch a campaign aimed at coordinating the activities of the Literacy Commissions at provincial and district levels. To rehabilitate and develop Youth and Sport in the formal system and non-formal education.

• <i>Literacy rate</i>	
	<i>Both sexes: 68.7%</i>
	<i>Male: 81.8%</i>
	<i>Female: 58.1%</i>
• <i>Tertiary institutes: 85 students per 100,000 people</i>	
• <i>Primary schools:</i>	
<i>Schools with Grade I only:</i>	<i>8%</i>
<i>Schools with Grades I and II:</i>	<i>14%</i>
<i>Schools with Grades I through III:</i>	<i>10%</i>
<i>Schools with Grades I through IV:</i>	<i>8%</i>
<i>Schools with grades I through V:</i>	<i>10%</i>
<i>Schools with a complete range of Grades (Grades I through VI)</i>	<i>50%</i>

Education administration and planning

The general administrative structure of the education system can be seen to adopt elements of a centrally-planned public administration structure. While many of the educational administrators in Cambodia have a great deal of experiences in leading and managing their work, they have never completed any standardized training.

At the central level, tasks are divided among general departments and specialized departments. In various domains of management (finance, materials/equipment, personnel, and curriculum), decisions are made on the basis of consent and appointment. Because of the lack of communication means at the horizontal line of authority, education administrators at the grass-root level are obliged to make decisions on many things without referring to higher levels. Consequently, the implementation of the Ministry's guidelines or instructions by each administrative unit varies according to geographical or specific conditions of each locality.

The Ministry of Education, Youth and Sport has four levels, or horizontal lines of authority, consisting of the Ministry at Central level, the provincial/municipal level, the district or "khan" level, and the schools. It should be noted that the school cluster is not a new hierarchical line of authority. A school cluster is a group of schools located near each other that can provide mutual technical and materials assistance to make the teaching-learning process more effective.

Education planning is a major component useful to education administrators at all levels to evaluate the results of their works and to make their decisions more effective. The process of planning requires accurate information on the current situation of each unit or system and involves many steps, including data collection, analysis, diagnosis and identification of priority activities to be subsequently carried out. At the present, the Department of Planning runs an Education Management Information System (EMIS) Center. Its mission is to collect data from all schools across the country for processing, analyzing and then compiling into statistics and indicators yearbooks for distribution to all levels of educational administrators.

CURRENT EDUCATIONAL DEVELOPMENT

Access and participation

Primary education is the first level of education in the country's education system. Schools were reopened in early 1979 after the collapse of the Khmer Rouge regime. Through the strong joint efforts of the community, local authorities and the MoEYS, an education system was re-established.

In the 1997-98 school year, the country has a total of 5,026 primary schools, 350 lower-secondary schools and 125 upper-secondary schools. Of the total number of primary schools, about 50% do not have the complete range of grades (Grades I through VI) for the primary cycle. Children who live far away from a school with the complete range of grades find very hard to continue learning and some of them inevitably become dropouts.

Due to budget constraints there is little hope of ensuring equal opportunity for every child to receive a 9-year basic education in the very near future. Problems are still found in education network, such as poor services of education delivery and a large gap in education quality between urban schools and rural or remote schools.

The school-age population has increased in the 1997-98 school year and the net enrolment rate in primary education for the whole country is 77.8%⁴. In other words, about 22% of the population aged 6-11 remain outside the school. The increasing number of dropouts in lower grades is the cause of the higher rate of illiteracy. The situation is worse in remote provinces as the net enrolment rate is even lower than 50%.

Because of poverty, shortage of labor in the family and the low level of education, certain segments of the population perceive that education is not imperative for themselves nor their families.

⁴ EMIS Center, MoEYS, 1998.

Kingdom of Cambodia
Schools, Classes, Students and Staff

Particulars	Number of Schools	Disadv. Schools	Number of Classes	Classes in Pagoda	Enrollment		Repeaters		Teaching Staff		Non-Teaching Staff	
					Total	Girl	Total	Girl	Total	Female	Total	Female
Whole Kingdom	6,294	686	54,415	2,089	2,358,081	1,033,836	551,257	236,034	61,904	22,137	9,751	2,583
By Area of Location:	1,090	46	15,590	406	702,620	307,133	128,086	53,254	21,014	10,117	4,445	1,730
- Urban Area	4,537	534	35,725	1,508	1,523,020	668,048	383,861	164,981	38,365	11,703	5,164	849
- Remote Area	667	106	3,100	175	132,441	58,655	39,310	17,799	2,525	317	142	4
By Type of School & Edn. Level:												
- Pre-School	793	57	1,393	102	43,358	21,569	0	0	1,802	1,783	169	155
- Primary School	5,026	614	45,443	1,794	2,011,772	906,827	529,358	230,664	43,282	15,816	5,178	1,100
- College	350	15	3,595	159	132,630	44,774	11,479	2,725	8,385	2,193	2,153	550
- Lycee	125	0	3,984	34	170,321	60,666	10,420	2,545	8,435	2,345	2,251	778
- Lower Secondary Level	467	15	5,926	159	229,102	79,832	20,061	4,951	13,800	3,821	3,599	1,053
- Upper Secondary Level	125	0	1,653	34	73,849	25,608	1,838	419	3,020	717	805	275
Disadvantaged school (All Levels)	686	686	3,864	203	165,069	73,839	45,686	19,979	3,746	1,064	294	37

Source: Education Statistics and Indicators, EMIS Center, Department of Planning, MoEYS, 1998

Quality and efficiency of education

Curriculum reform and expansion of the system

Political and socio-economic changes have led to successive reforms of the country's education system. Before 1975, the country adopted a French-based education system that required 13 years of education (6+4+2+1) with 4 or 5 major examinations. After 1979, the Ministry of Education, in consideration of the country's urgent needs, executed a 10-year education system (4+3+3) and then expanded it to an 11-year education system from 1986 to 1996.

The Ministry has continued to improve the education system. The curriculum was reformed, new textbooks were developed and new teaching skills were provided to teachers to prepare ground for the introduction of a new 12-year education system (6+3+3) in the 1996-97 school year. The new system has increased the number of learning hours for every grade in the cycle of primary education.

In the framework of this new system, one school year lasts 38 learning weeks, with 6 periods of learning per day, and each period of learning lasting 45 minutes. Under the old curriculum, one school year lasted only 32-33 weeks, and pupils attended only 4 hours of learning per day. In reality, the amount of teaching and learning is lower than stipulated by the Ministry, thus causing high rates of wastage (high repetition and dropout rates).

Internal efficiency

As the scale of our new system of education is quite similar to that of neighbouring countries in the region, the MoEYS hopes to be able to reduce the repetition rate and increase learning hours. As yet, the repetition rate in Grade 1 is very high at 41.2%, but the promotion rate is only 46.9%. In general, Grade 1 students have the highest repetition rate.

In the 1997-98 school year, dropout rates were very high, especially in Grade 1, Grade 2 and Grade 3 at 11.9%, 15.25 and 14.9% respectively. There is a fear that these dropouts might become illiterates.

The pupil-teacher ratio is about 46.5 to 1 nation-wide but 33.4 to 1 in urban primary schools. The shortage of classrooms is very critical for schools in the urban areas at 70.5 pupils per classroom, thus forcing some schools to conduct 3 shifts per day.

The enrollment rate is relatively low and the learning achievements or internal efficiency of the education system is very low. The low enrollment rate and internal efficiency result in great loss of resources in terms of finance, materials and equipment, and time to the country as a whole. The Ministry of Education, Youth and Sport is striving hard to solve these problems.

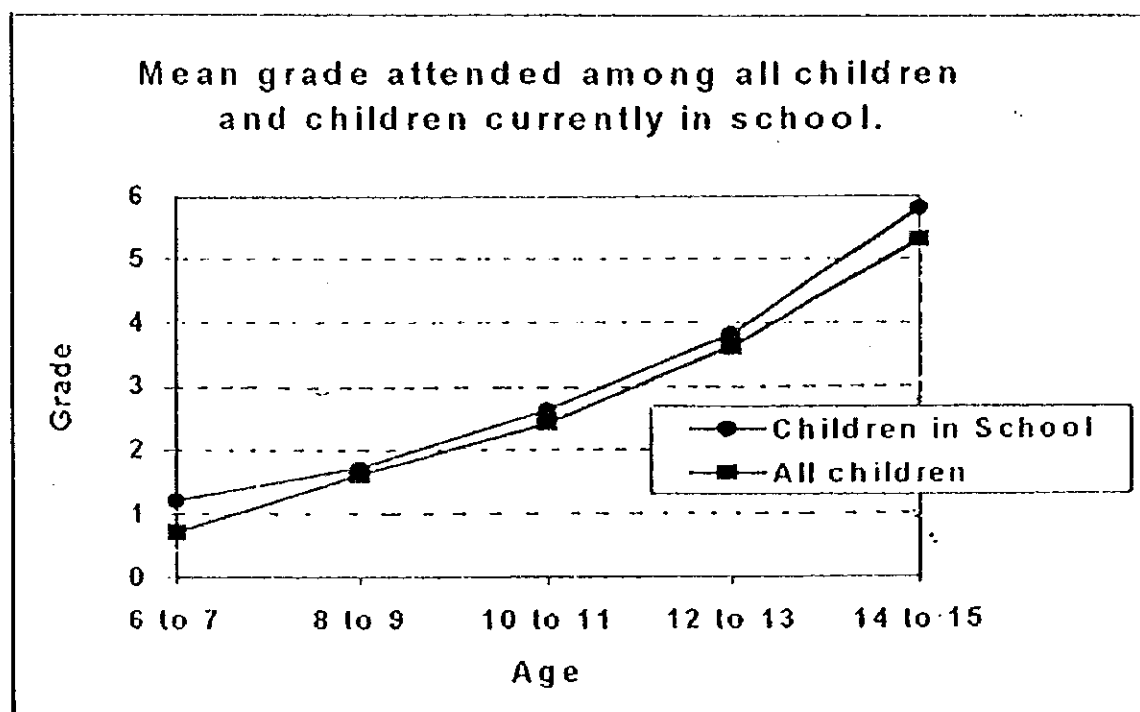
Selected Education Indicators, 1997/98⁵

Gross Admission Rate:	97.9%
Net Admission Rate:	59.8%
Gross Enrollment Rate:	88.3%
Net Enrollment Rate:	77.8%

Internal Efficiency of the primary education

Particulars	Promotion	Repetition	Dropout
Grade I	46.9	41.2	11.9
Grade II	58.1	26.7	15.2
Grade III	65.9	19.2	14.9
Grade IV	70.0	12.6	17.9
Grade V	71.3	7.5	21.1
Grade VI	77.6	14.4	18.0

Source: Education Statistics and Indicators, 1998



⁵ Rate are a bit lower than the previous years' figures due the larger size of school-age population and the integration of a number of municipalities, districts or "khasas".

Non-formal education

In parallel with the development of the formal education system, the MoEYS also focusses on the non-formal education system, which is an indispensable component of the education system, particularly in the attempt to increase literacy rates.

In Cambodia, the definition of a literate person is someone who has the ability to read and write *to a certain extent only*. The literacy rate of those 15 years and over is 67%. Compared to other developing countries in the region, the literacy rate in Cambodia is relatively high. In the light of previous literacy campaigns, the literacy rate rose to 68.7%: 81.8% for males and 58% for females. However, the literacy rate in rural and remote areas is far lower than in the towns. To improve the situation, the Royal Government has reshaped the National Literacy Committee with the view of further intensifying nationwide literacy activities.

Higher education

Higher education is a sub-sector that has objectives and operations quite different from other education sub-sectors. The General Department of Higher & Technical Education and Vocational Training is in charge of coordinating higher education development while concerned ministries handle management aspects by their respective specializations. The Ministry of Education, Youth and Sport directly supervises six higher education institutions and the Ministries of Health, Agriculture and Culture & Fine Arts supervise three others.

The MoEYS is doing its best to use all available resources and seeking financial, technical and material assistance from different sources to improve education quality at all education levels. With these efforts, the MoEYS hopes that it can bring about a positive change to the national education system, especially higher promotion rate in lower grades.

Finance and community participation in education

As Buddhists, Cambodians have a long tradition of organizing merit-making festivals to build pagodas, schools and roads. After the collapse of the Pol Pot regime, the Cambodian people enthusiastically made large contributions, according to their own means and resources, to the construction of schools to benefit the local community. The "riel" (local currency) had not yet been put back into circulation following the Pol Pot era, so Cambodians committed themselves to continuing to strengthen the education system through contributions either in terms of materials or labor.

Education surveys have shown that Cambodia is one of the countries in the world in which a very high proportion of the resources for primary education come from the local community. This has perhaps resulted from the fact that the Cambodian people had suffered greatly through a murderous regime, thus boosting their desire to restore their country's education system.

To keep schools functioning well, the community has to, through "Parents' Associations" or "School Supporting Committees", raise money to cover not only the recurrent expenses, but also to sponsor all sport and art activities.

The national budget for education can cover staff salaries (teachers and education administrators) and a small part of recurrent expenditures incurred by central and provincial levels. For the current year 1998, the government has allocated 147 billion riels (about \$US 40 million at current exchange rate) to the education sector, thus representing 10.3% of the national budget or about 1.5% of the GDP. In contrast, in 1997 the education budget was 8.1% of the national budget. Nevertheless, the value of the 1998 budget is far lower than the actual needs of the MoEYS.

International co-operation

Non-refundable aid and low-interest loans are the practices of international cooperation. International cooperation can be seen in the form of multilateral or bilateral aid and the aid channeled through non-governmental organizations. In most cases, donors themselves are the executors of these aid projects and entrust their consultants or certain organizations to manage and execute the project.

The agencies that provide multilateral aid to the education system include:

- The Asian Development Bank (ADB), which provides assistance with textbook development and technical training;
- The UN system, including UNDP, UNICEF and UNESCO. Parts of their respective country programs are implemented by ILO and UNDP/CAREERE;
- The World Bank, which is studying the feasibility of granting loans to Cambodia; and
- EU/PASEC, which has just completed the first phase of its country program.

Bilateral donors include:

- AusAID (Australia);
- CIDA (Canada);
- "Sida" (Sweden);
- GTZ (Germany)
- ACCT (Agence de Cooperation Culturelle et Technique);
- AUPELF-UREF (Association des Universités Partiellement et Entièrement de Langue Française – Union des Réseaux d'Expression Française) – France
- JICA (Japan)
- ODA/UK (United Kingdom)

Aid is also channeled through NGOs such as:

- Redd Barna (Norway);
- CARE (USA);
- JSRC (Japan)
- CONCERN (Ireland);
- SIPAR (France);
- TOPS (Taiwan).

Recent reforms and future orientation

The main purposes of curriculum reform are:

- to improve students' competencies by building up their knowledge of the surrounding environment;
- to adapt the current situation of the education system to the prevailing trend; and
- to cut down wastage within the education system, i.e. to reduce repetition and drop-out rates.

Although there has been no systematic research on students' competencies conducted after the implementation of the new curriculum, the preliminary findings of recent surveys suggest that the new curriculum is more comprehensive. However, it requires teachers to invest more energy in their lesson preparation and teaching methodologies.

The content of the new curriculum will inspire students to better understand their surrounding environment, apply methods of problem-solving and enrich their spirit of innovation. Student-centered and other participatory methods are encouraged, through which students can exchange their views on the topics they learn, demonstrate their abilities in either small or big groups and put their perceptions into concrete actions. The teacher plays the role of facilitator, team leader, or resource person and is ready to improve and adjust to the situation and give students advice on practical solutions.

In line with the process of curriculum reform, the Ministry is also concerned with staff development in order to prepare the ground for the decentralization of the education administration. These efforts are aimed at delegating more authority to lower levels, especially education administrators at grass-roots level, so that they are capable of completing tasks assigned by the Ministry and taking responsibility for the Ministry. Each level of authority, down to school level, will slowly adapt to this new trend while the Ministry will continue to develop education policies and policy objectives for each sub-sector, issue instructions, disseminate resources and monitor the work done by local administrative units.

4 . Education Indicators 1997/1998



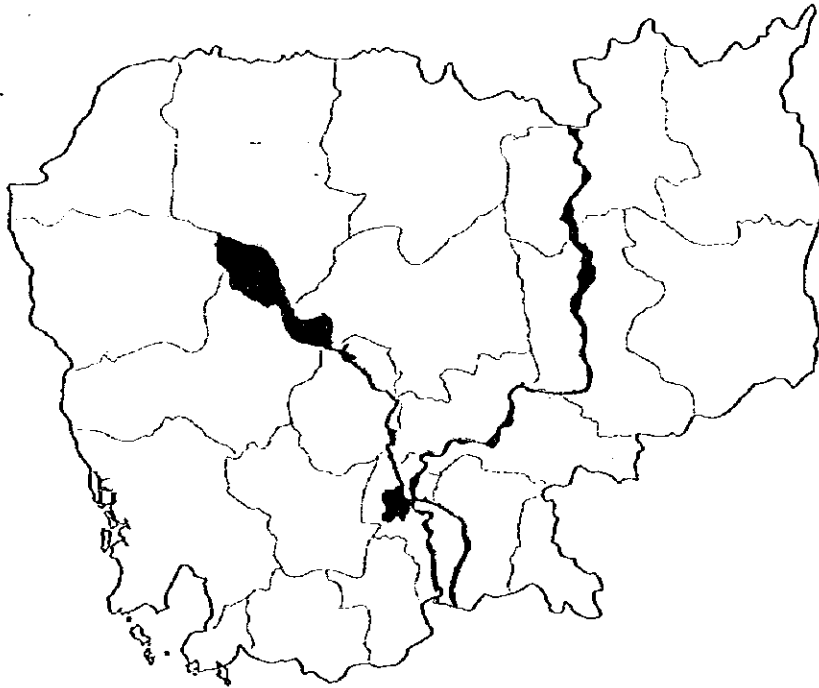


ព្រះរាជាណាចក្រកម្ពុជា
ជាតិ សាសនា ព្រះមហាក្សត្រ
ក្រសួងអប់រំ យុវជន និងកីឡា



Kingdom of Cambodia
Nation - Religion - King
Ministry of Education, Youth & Sport

តារាងកាត់អប់រំ ១៩៩៧-៩៨



1997-98 Education Indicators

គាំទ្រដោយ
Supported by UNESCO/UNDP and UNICEF/Sida

គោលនយោបាយរបស់ក្រសួងអប់រំ យុវជន និងកីឡា

១. សកលកម្មចំនេះទូទៅមូលដ្ឋានចំនួន ៩ឆ្នាំ និងបង្កើតកាសអភិវឌ្ឍអក្ខរកម្មវិជ្ជាជីវៈ
២. ទំនើបកម្ម និងកែលម្អគុណភាពអប់រំ តាមរយៈការកែទម្រង់ដែលមានប្រសិទ្ធភាព
៣. ការផ្សារភ្ជាប់ការអប់រំ ការបណ្តុះបណ្តាលទៅនឹងទីផ្សារពលកម្ម និងសង្គម
៤. ការស្តារ និងអភិវឌ្ឍន៍ការងារយុវជន និងកីឡា

POLICY OF THE MINISTRY OF EDUCATION, YOUTH & SPORT

1. Universalizing 9 years of basic education and developing opportunities for functional literacy
2. Modernizing and improving the quality of education through effective reform
3. Linking education/training with labor market and society
4. Rehabilitating and developing Youth and Sport sub-sector

ព័ត៌មានទូទៅ

GENERAL INFORMATION

- ផ្ទៃដី Land area (ពម ^b , km ²)	181,035
- ចំនួនខេត្ត/ក្រុង Number of provinces/municipalities	23
- ប្រជាជន Population (ប្រុស/Male: 48%, ស្រី/Female: 52%)	10.7 million
- ចំនួនគ្រួសារគ្រួសារ Number of households	2.0 million
- អត្រាកំណើនប្រជាជនប្រចាំឆ្នាំ Population growth rate	2.4%
- ប្រជាជនអាយុក្រោម ១៥ ឆ្នាំ Population under 15 years	43%
- អត្រាមរណៈទារក (ក្រោម១ឆ្នាំ) Infant mortality rate	90‰
- អាយុសង្ឃឹមរស់ជាមធ្យម Life expectancy at birth (ឆ្នាំ / years) (ប្រុស/Male: 50, ស្រី/Female: 59)	53
- ភាគរយនៃប្រជាជនមានការងារធ្វើ Percentage of employed persons:	
• ផ្នែកទី១ : កសិកម្ម Primary sector: Agriculture...	81.6%
• ផ្នែកទី២ : ឧស្សាហកម្ម Secondary sector: Industry...	2.3%
• ផ្នែកទី៣ : សេវាកម្ម Tertiary sector: Services...	15.6%
- ផលទុនសរុបសំរាប់ប្រជាជន ១នាក់ GDP per capita (\$US)	270
- អត្រាអក្ខរកម្ម (អាយុ ១៥ ឆ្នាំឡើង) Literacy rate (15 years old & over) (ប្រុស/Male: 78%, ស្រី/Female: 57%)	67%
- សាលាវិជ្ជាជីវៈ Vocational Schools	24 (និស្សិត students) 5,300*
- ស្ថាប័នឧត្តមសិក្សា Tertiary Institutions	9 (និស្សិត students) 8,901*

Source: - Demographic Survey of Cambodia, 1996, NIS, Ministry of Planning
* EMIS Center, MoEYS (1998)

ប្រព័ន្ធអប់រំនៅកម្ពុជា

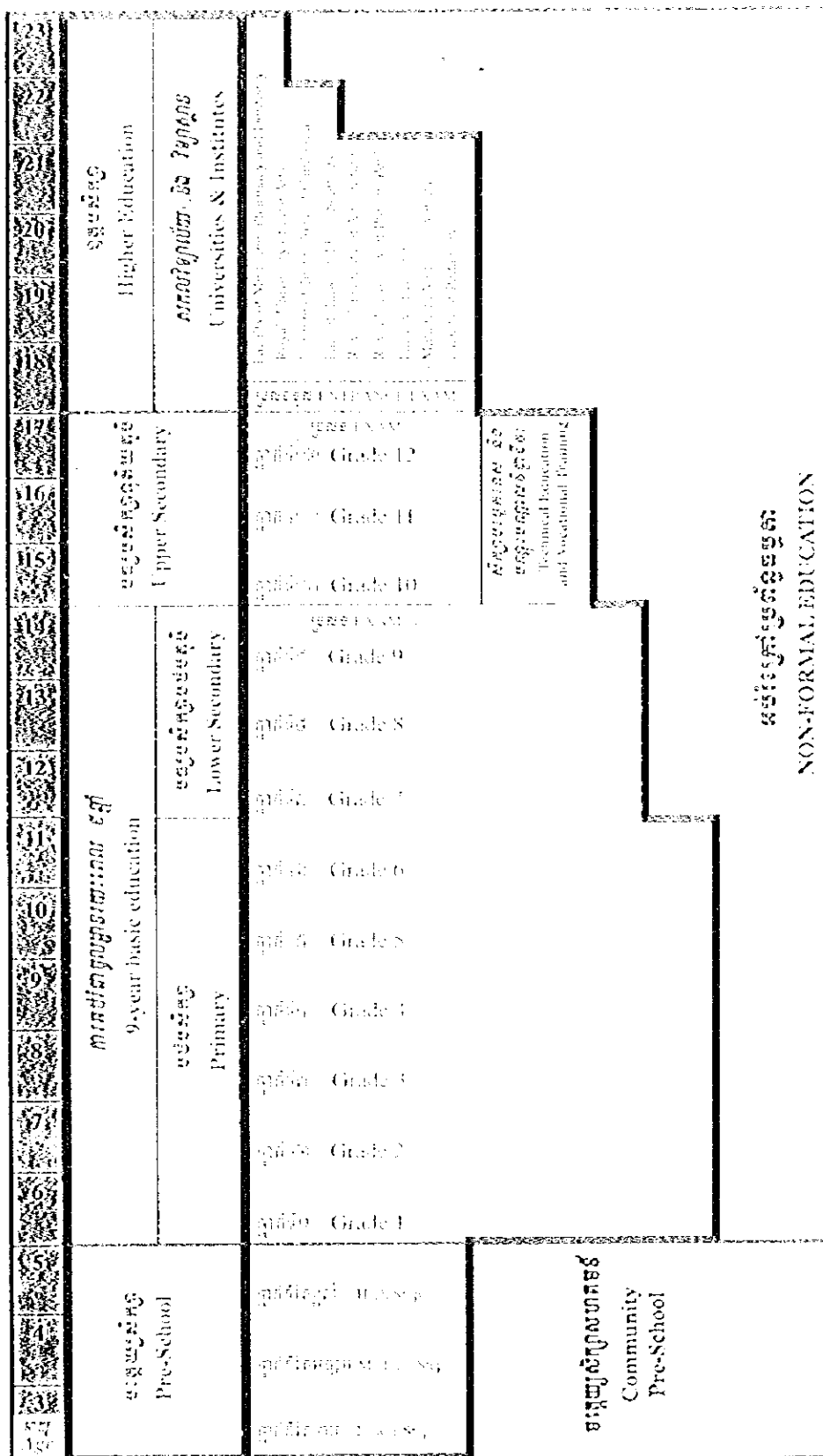
EDUCATION SYSTEM IN CAMBODIA

23	ខ្ពស់បំផុត Higher Education សាលាវិទ្យាល័យ និង វិទ្យាល័យ Universities & Institutes • Faculty of Medicine, Pharmacy and Dentistry • Royal University of Fine Arts • Institute of Technology of Cambodia • Fac. of Law and Eco. Sciences • Royal University of Agriculture • Royal University of Phnom Penh • Faculty of Business • Mahanshi Vedic University • Faculty of Pedagogy	ប្រឡងចូល ENTRANCE EXAM
22		
21	បឋមសិក្សាខ្ពស់ Upper Secondary ប្រឡងចូល EXAM ថ្នាក់ទី១២ Grade 12 ថ្នាក់ទី១១ Grade 11 ថ្នាក់ទី១០ Grade 10 សិក្សាបច្ចេកទេស និង បណ្តុះបណ្តាលវិជ្ជាជីវៈ Technical Education and Vocational Training	ប្រឡងចូល EXAM
20		
19	មធ្យមសិក្សាទាប Lower Secondary ប្រឡងចូល EXAM ថ្នាក់ទី៩ Grade 9 ថ្នាក់ទី៨ Grade 8 ថ្នាក់ទី៧ Grade 7	ប្រឡងចូល EXAM
18		
17	មធ្យមសិក្សាខ្ពស់ Upper Secondary	ថ្នាក់ទី៦ Grade 6 ថ្នាក់ទី៥ Grade 5 ថ្នាក់ទី៤ Grade 4 ថ្នាក់ទី៣ Grade 3 ថ្នាក់ទី២ Grade 2 ថ្នាក់ទី១ Grade 1
16		
15	មធ្យមសិក្សាទាប Lower Secondary	មុនបឋមសិក្សា Pre-Primary
14		
13	មុនបឋមសិក្សា Pre-Primary	មុនបឋមសិក្សា Pre-Primary
12		
11	មុនបឋមសិក្សា Pre-Primary	មុនបឋមសិក្សា Pre-Primary
10		
9	មុនបឋមសិក្សា Pre-Primary	មុនបឋមសិក្សា Pre-Primary
8		
7	មុនបឋមសិក្សា Pre-Primary	មុនបឋមសិក្សា Pre-Primary
6		
5	មុនបឋមសិក្សា Pre-Primary	មុនបឋមសិក្សា Pre-Primary
4		
3	មុនបឋមសិក្សា Pre-Primary	មុនបឋមសិក្សា Pre-Primary
2		
1	មុនបឋមសិក្សា Pre-Primary	មុនបឋមសិក្សា Pre-Primary
0		
Age	មុនបឋមសិក្សា Pre-School ថ្នាក់កំពស់ High Step ថ្នាក់កណ្តាល Medium Step ថ្នាក់ក្រោម Lower Step មុនបឋមសិក្សា Community Pre-School	មុនបឋមសិក្សា Pre-School

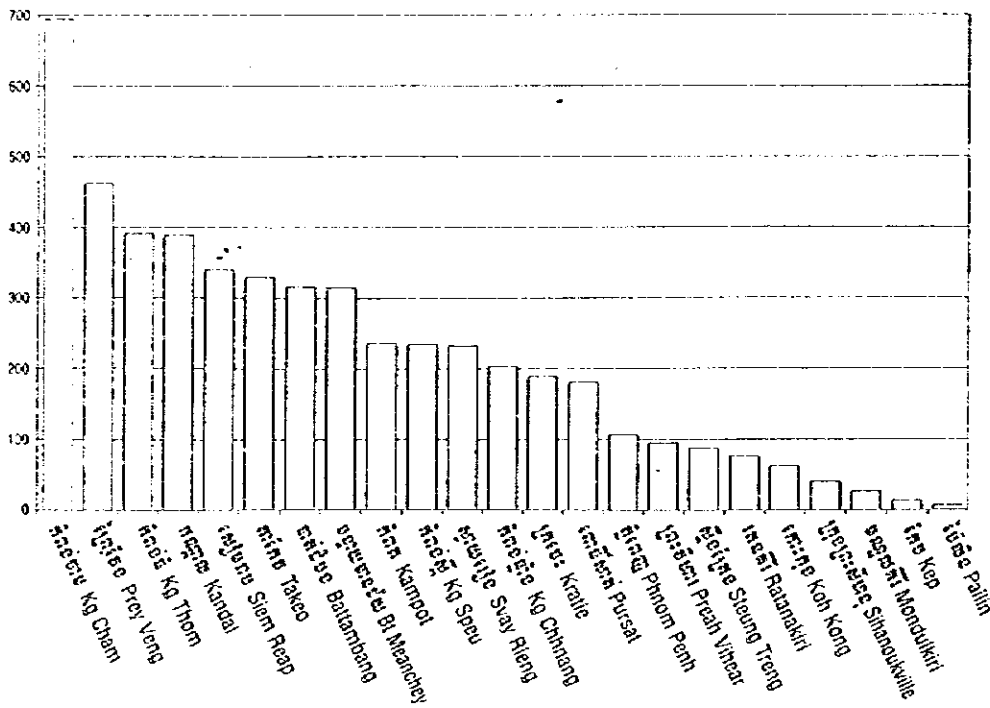
អប់រំក្រៅប្រព័ន្ធអប់រំ
NON-FORMAL EDUCATION

ប្រព័ន្ធអប់វិទ្យាល័យកម្ពុជា

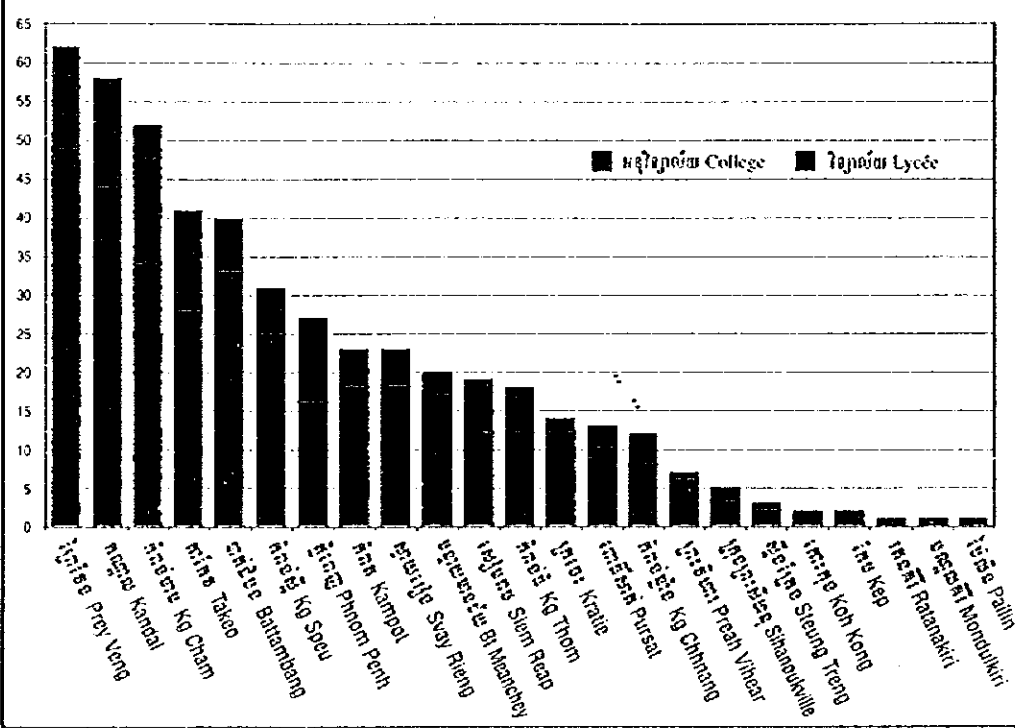
EDUCATION SYSTEM IN CAMBODIA



ចំនួន សាលាបឋមសិក្សា នៅក្នុងខេត្តនីមួយៗ
Number of Primary Schools in Each Province

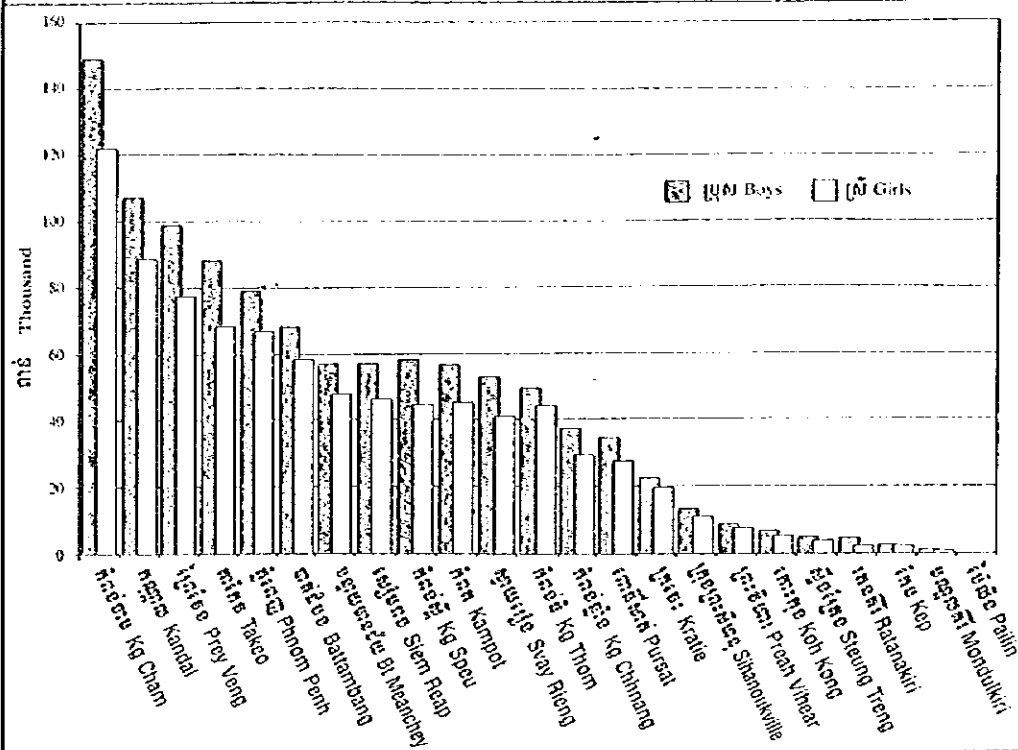


ចំនួន អនុវិទ្យាល័យ និង វិទ្យាល័យ នៅក្នុងខេត្តនីមួយៗ
Number of Colleges & Lycées in Each Province

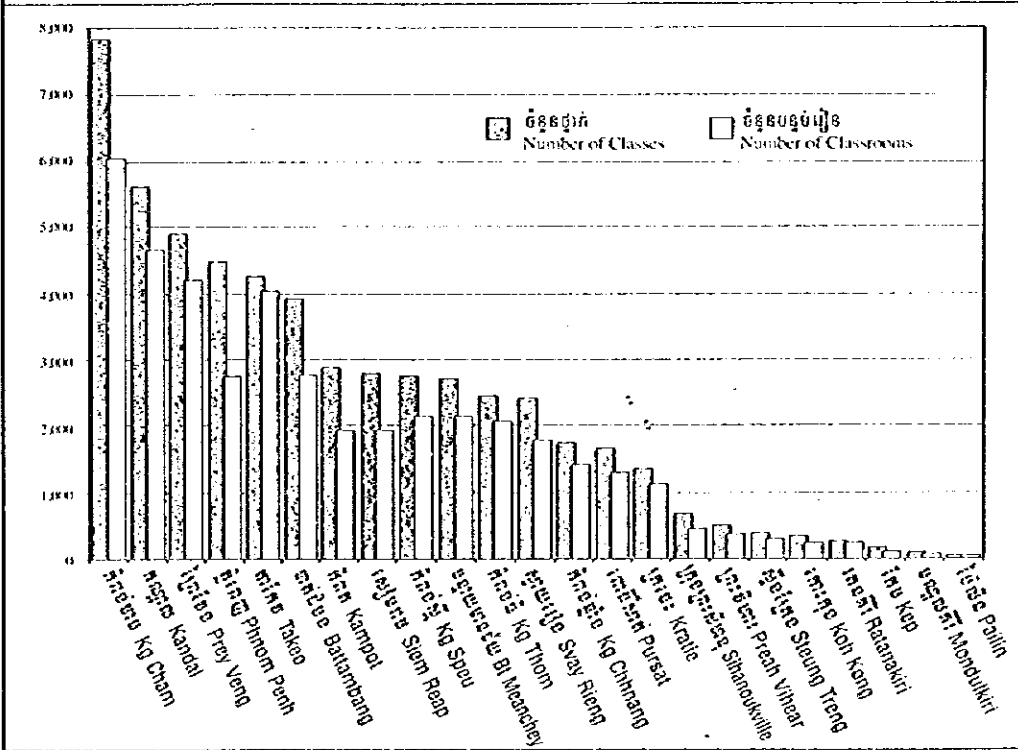


សិក្សាស្រាវជ្រាវ បណ្ណាល័យប្រចាំខេត្តនីមួយៗ តាមការប្រកាសរបស់ អគ្គនាយកដ្ឋានសិក្សាស្រាវជ្រាវ ក្រសួងអប់រំ យុវជន និងកីឡា

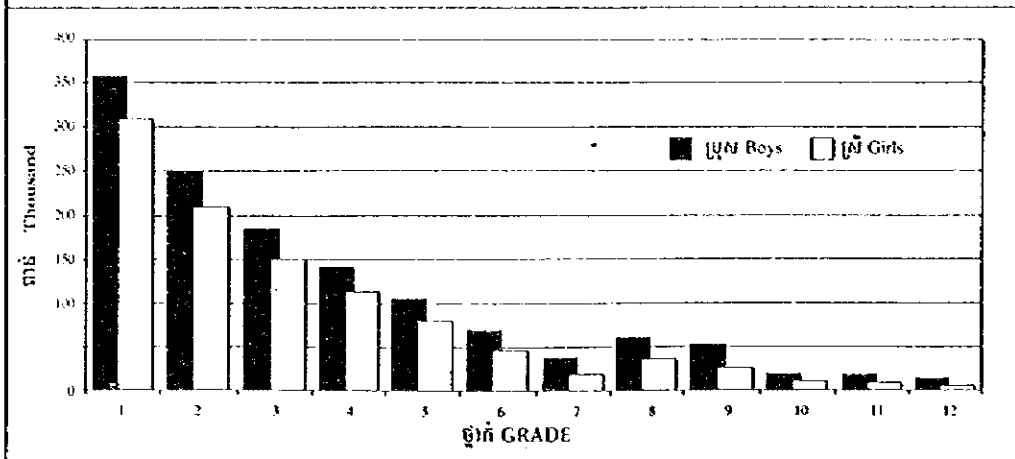
ចំនួនសិស្សក្នុងបឋមសិក្សា នៅក្នុងខេត្តនីមួយៗ
Number of Primary Students in Each Province



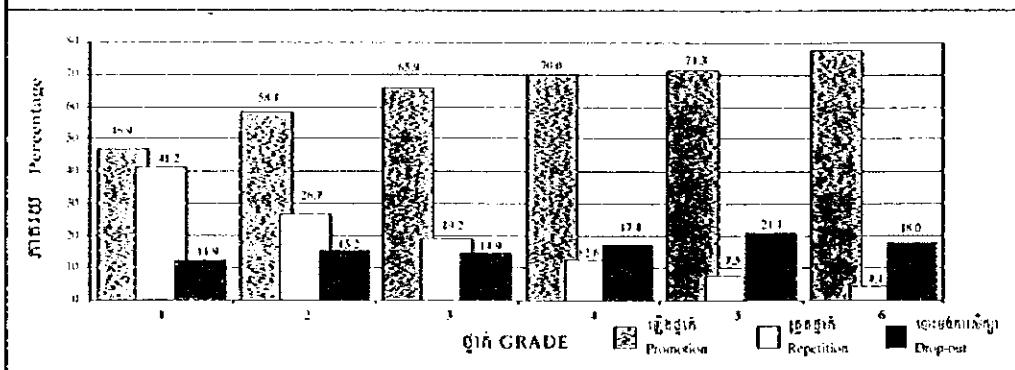
ចំនួនថ្នាក់រៀន និងបន្ទប់រៀន ក្នុងខេត្តនីមួយៗ
Number of Classes and Classrooms in Each Province



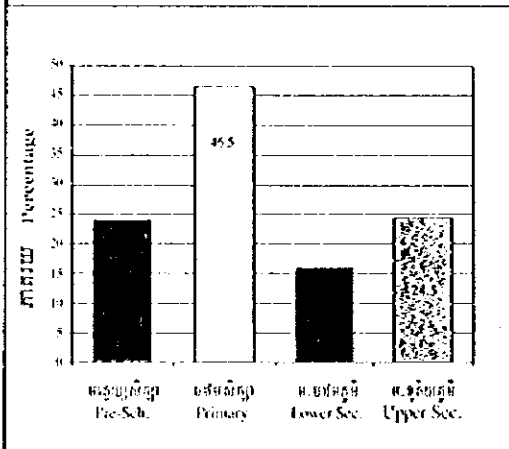
ចំនួនសិស្ស នៅតាមកំរិតថ្នាក់ទីមួយៗ
Number of Students in Each Grade



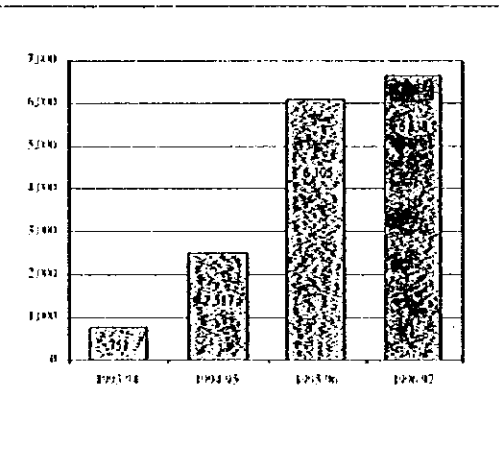
អត្រាឡើងថ្នាក់ ត្រួតថ្នាក់ & បោះបង់ការសិក្សា ពីថ្នាក់ទី១ ដល់ថ្នាក់ទី៦
Promotion, Repetition and Drop-out Rates from Grade 1 to 6



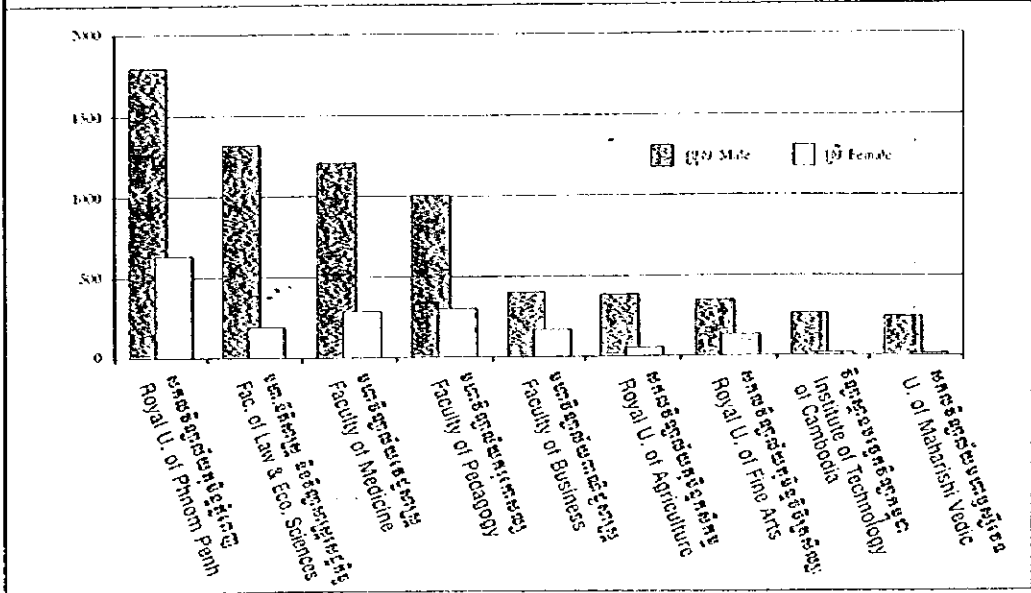
ផលធៀបសិស្ស-គ្រូ
Students-Teacher Ratio



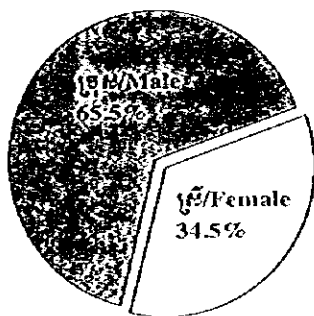
សិស្សប្រលងចាស់ ម.ទុតិយភូមិ
Upper Secondary Graduates



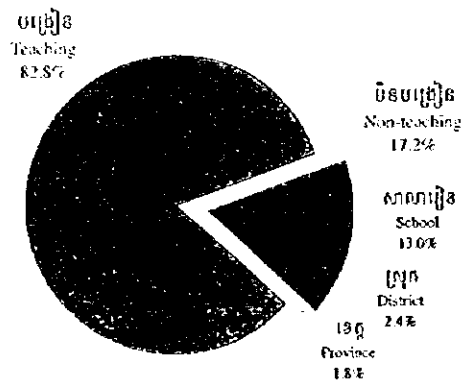
ចំនួននិស្សិត នៅតាមស្ថាប័នខ្ពស់សិក្សា
Number of Students by Higher Education Institution



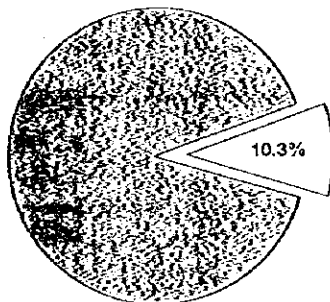
ប្រៀបធៀបនិស្សិតតាមភេទ
Staff by Gender



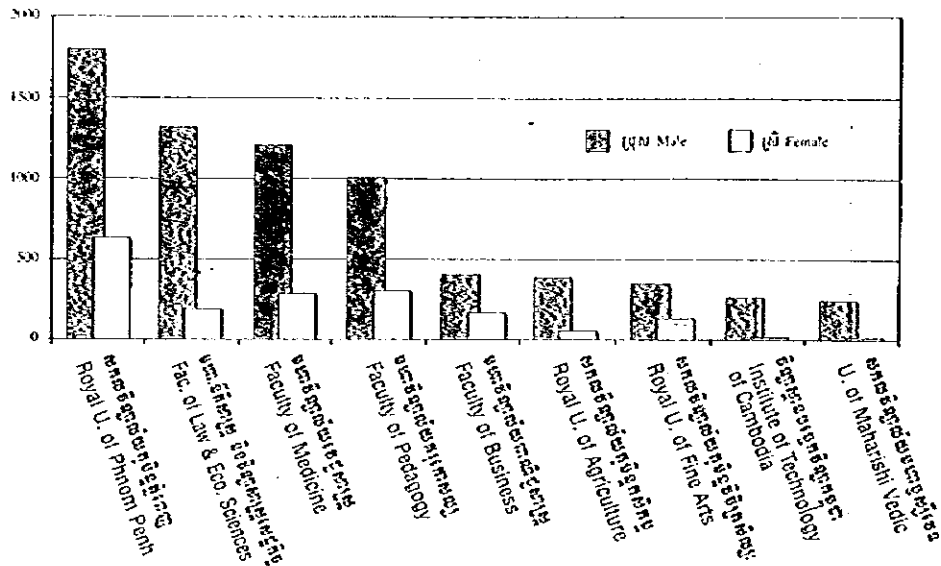
ប្រៀបធៀបនិស្សិតតាមតួនាទី
Staff by Role



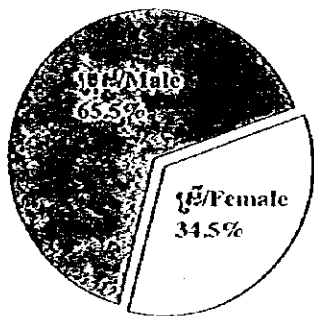
ភាគរយនៃថវិកាជាតិសំរាប់អប់រំ
Percentage of National Budget for Education



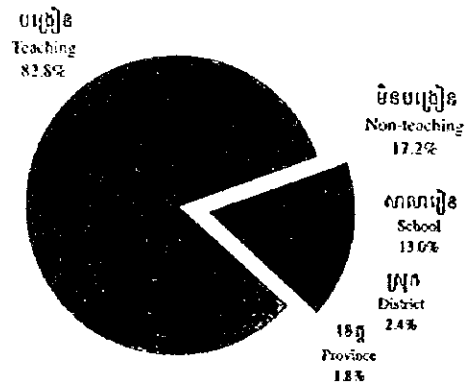
ចំនួននិស្សិត នៅតាមស្ថាប័នខ្ពស់សិក្សា
Number of Students by Higher Education Institution



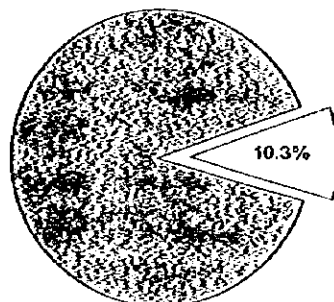
ប្រ្លូងអប់រំ សរុបតាមភេទ
Staff by Gender



ប្រ្លូងអប់រំ តាមតួនាទី
Staff by Role



ភាគរយនៃថវិកាជាតិសំរាប់អប់រំ
Percentage of National Budget for Education



គោលនយោបាយរបស់ក្រសួងអប់រំ យុវជន និងកីឡា

១. សកលកម្មចំនេះទូទៅមូលដ្ឋានចំនួន ៩ឆ្នាំ និងបង្កើនកម្រិតអភិវឌ្ឍន៍អក្ខរកម្មវិជ្ជាជីវៈ
២. ទំនើបកម្ម និងកែលម្អគុណភាពអប់រំ តាមរយៈការកែទម្រង់ដែលមានប្រសិទ្ធភាព
៣. ការផ្សារភ្ជាប់ការអប់រំ ការបណ្តុះបណ្តាលទៅនឹងទីផ្សារពលកម្ម និងសង្គម
៤. ការស្តារ និងអភិវឌ្ឍន៍ការងារយុវជន និងកីឡា

POLICY OF THE MINISTRY OF EDUCATION, YOUTH & SPORT

1. Universalizing 9 years of basic education and developing opportunities for functional literacy
2. Modernizing and improving the quality of education through effective reform
3. Linking education/training with labor market and society
4. Rehabilitating and developing Youth and Sport sub-sector

ព័ត៌មានទូទៅ

GENERAL INFORMATION

- ផ្ទៃដី Land area (គម ^២ , km ²)	181,035
- ចំនួនខេត្ត/ក្រុង Number of provinces/municipalities	23
- ប្រជាជន Population	10.7 million
(ប្រុស/Male: 48%, ស្រី/Female: 52%)	
- ចំនួនគ្រួសារគ្រួសារ Number of households	2.0 million
- អត្រាកំណើនប្រជាជនប្រចាំឆ្នាំ Population growth rate	2.4%
- ប្រជាជនអាយុក្រោម ១៥ ឆ្នាំ Population under 15 years	43%
- អត្រាមរណៈទារក (ក្រោម១ឆ្នាំ) Infant mortality rate	90‰
- អាយុសង្ឃឹមរស់ជាមធ្យម Life expectancy at birth (ឆ្នាំ / years)	53
(ប្រុស/Male: 50, ស្រី/Female: 59)	
- ភាគរយនៃប្រជាជនមានការងារធ្វើ Percentage of employed persons:	
• ផ្នែកទី១ : កសិកម្ម Primary sector: Agriculture...	81.6%
• ផ្នែកទី២ : ឧស្សាហកម្ម Secondary sector: Industry...	2.8%
• ផ្នែកទី៣ : សេវាកម្ម Tertiary sector: Services...	15.6%
- ផលទុនសរុបសំរាប់ប្រជាជន ១នាក់ GDP per capita (\$US)	270
- អត្រាអក្ខរកម្ម (អាយុ ១៥ ឆ្នាំឡើង) Literacy rate (15 years old & over)	67%
(ប្រុស/Male: 78%, ស្រី/Female: 57%)	
- សាលាវិជ្ជាជីវៈ Vocational Schools	24 (និស្សិត students) 5,300*
- ស្ថាប័នឧត្តមសិក្សា Tertiary Institutions	9 (និស្សិត students) 8,901*

Source: - Demographic Survey of Cambodia, 1996, NIS, Ministry of Planning
 * EMIS Center, MoEYS (1998)

