

# Teaching Health and Physical Education 

4th Edition

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## Introduction

## Welcome to Teaching Health and Physical Education

This monograph has been designed to facilitate the professional development of future primary school teachers in Health and Physical Education. It is based on two important premises:

1. that Health and Physical Education should be an integral part of primary education; and,
2. that the class teacher must assume the major responsibility for Physical Education in the primary school. As in other subjects of the curriculum, he (or she) is responsible for structuring desirable learning experiences which contribute significantly toward the total education of the child'(Dept. of Education, 1972).

There is also a hidden agenda here, which I want to expose right from the start, which is that I do not believe that Health and Physical Education has been as successful in primary schools as it might have been. While there are some excellent programs to be found, these are an exception, rather than the rule. This monograph, and others like it, seek to change this situation and it recognises student teachers as potential change agents.

While this monograph has been constructed primarily for students completing Health and Physical Education Curriculum and Pedagogy at Central Queensland University, it will provide those currently employed as teachers with a good basis for reviewing and redeveloping their current practices in this important curriculum area.

Many thanks to my colleagues, including David LaPere, Helen Huntly, James Fell and Sue Martin, for their comments and suggestions during the development of this edition.

Howard Walmsley

February 2000

## Contents

Page
Introduction ..... iii.
Part One:
Health and Physical Education for Primary Schools

1. Health and Physical Education: Aims, Content ..... 1. and Teachers
2. Developing Teaching Skills in Physical Education ..... 11.
3. The Primary School Child: Patterns of ..... 15. Growth and Development
4. Motor Learning and Skill Acquisition ..... 23.
5. Health and Fitness: Basic Principles ..... 33.
6. Development of Programmes for Health and ..... 43.
Physical Education
7. Evaluation in Health and Physical ..... 53.
Education
8. Medical Considerations and Adaptive ..... 61. Physical Education
9. Health Education in Queensland Schools ..... 63.
10. Integration and Physical Education ..... 71.
Part Two:
Teaching Approaches for Selected Areas of Content
11. Teaching Aquatics ..... 77.
12. Teaching Minor Games ..... 93.
13. Teaching Basic Skills ..... 97.
(Part Two Continued:
Teaching Approaches for Selected Areas of Content)
14. Teaching Fitness Activities ..... 101.
15. Teaching Dance ..... 105.
16. Teaching Gymnastics ..... 109.
17. Teaching Modified Games ..... 113.
18. Teaching Health Education ..... 119.
17 Class Based Health Assessment ..... 125.
References and Suggested Reading ..... 135.
Part Three:
Selected Readings
Reading 1: Walmsley, H. (2000), A Brief History of ..... 141. Health and Physical Education in Queensland.
Reading 2: Huntly, H (2000), Origins and Development ..... 145. of Queensland's New Health and Physical Education Syllabus.
Reading 3: Dept. of Education, Qld (1989) P-10 Teaching ..... 155. Framework, Govt. Printer, Brisbane. p 7-12
Reading 4: Nichols, B (1986) Moving and Learning, ..... 161. Mirror/Mosby, St Louis, p 70-80
Reading 5: LaPere, D. (2000), Children with Disabilities: ..... 173. Guidelines for Teachers of Physical Education

## Chapter 1

## Health and Physical Education: Aims, Content and Teachers

## Introduction

The purpose of this first chapter is to provide an introduction to your work in this curriculum area and, specifically, to provide an indication of how health and physical education can contribute to the education and development of primary school children. In addition, this chapter will provide an initial discussion about the role of primary school generalist (classroom) and specialist teachers in health and physical education.

It should be noted that both of these issues will be revisited in many other sections of this monograph. Thus they are important here in terms of contextualising the later discussions and our class activities.

## Aims and Objectives of Health and Physical Education

Most of you will have some idea about the aims of health and physical education from your previous school experiences and/or from images in the print and electronic media (for example, film and television). In recent years, student teachers in my classes have typically suggested that health and physical education is about "getting fit"; about "improving your health"; or concerned with "developing sporting skills". These issues are certainly an important part of health and physical education but a well developed program can do much more than this.

For example, Kirchner (1988), a US based physical educator, has suggested that contemporary health and physical education programs in the US should be equally concerned with the following nine objectives:

- to enhance physical growth and development;
- to develop and maintain physical fitness;
- to provide enjoyment through movement participation;
- to develop an understanding and an appreciation of human movement;
- to develop physical skills;
- to develop social skills;
- to develop intellectual competencies;
- to develop creativity;
- to enhance the students self-image.

Similarly, Wuest and Bucher (1995) have suggested that health and physical education can make major contributions to children's development in the following four areas:

| 1. Physical development: | health and physical education <br> has a concern for enhancing <br> growth and lifelong physical <br> fitness. |
| :--- | :--- |
| 2. Motor development: | health and physical education <br> develops movement skills that <br> are needed for life and for <br> participation in sport and <br> recreation. |
| 3. Cognitive development: | physical education provides <br> another medium for individuals <br> to acquire knowledge and <br> understandings and to develop <br> their ability to think and <br> interpret. |
| 4. Affective development: | physical education provides <br> opportunities for individuals to <br> develop positive feelings about |
| themselves and others and their |  |
| interpersonal skills |  |

In both of these statements, it can be seen that health and physical education is about more than simply developing childrens' physical prowess and it is more than simply developing teams for intra-school or inter-school sport. Instead, health and physical education is identified as a curriculum area which contributes to the wider goals of "education" and it does this through the provision of learning experiences in which movement is the central theme. Thus, it has a unique role.

This view of the role of health and physical education is increasingly being promoted in Australia as evidenced in the following 'Statement of Goals for Health and Physical Education for Australian schools' which was developed as part of the National Curriculum Project (Australian Education Council, 1994a, p. 7.) in the early 1990s:

Learning in the health and physical education area assists students to:

- Develop knowledge and skills to make informed decisions, plan strategies and implement and evaluate actions that promote growth
and development, participation in physical activity, fitness, effective relationships, and the safety and health of individuals and groups.
- Take an active part in creating environments that support healthy participation in physical activity, and contribute to community debate and discussion on these issues.
- Be involved as skilled participant in play, games, dance, gymnastics, aquatics, sport, outdoor activities, leisure and recreation.
- Develop the knowledge and skills to make informed decisions on nutrition and dietary practices.
- Accept themselves as they grow and change, and promote their own and others' worth, dignity and rights as individuals and as members of groups.
- Evaluate the influence of diverse values, attitudes and beliefs on personal and group decisions and behaviour related to health and physical activity.
- Develop an understanding of how individuals and communities can act to redress disadvantages and inequities in health and access to health care and resources.
- Appreciate the impact of human behaviour and endeavour on the environment and the consequences for the health of individuals and populations.
- Use and evaluate services, products and facilities that promote wellbeing and participation in physical activity, and understand their rights and responsibilities as consumers.

The statement was developed over a three year period during which time there was extensive consultation involving all states (Australian Education Council, 1994). Since its publication, many if not all of the Australian state education systems have redeveloped their curriculum documents for health and physical education and in the main they reflect the orientation indicated in the above statement. This includes the foregrounding of health and lifestyle. In some states, for example New South Wales, this area has been relabelled as "Personal Development, Health and Physical Education".

In Queensland, a new syllabus for health and physical education was published in 1999 (Queensland School Curriculum Council). This document was conceptually different to previous health and physical
education curriculum policies in a number of ways. For example, including an attempt to bridge the primary secondary school divide through the development of a Years $1-10$ syllabus. In addition, curriculum objectives have been replaced by a set of expected key learning area outcomes which provide a framework for planning and implementing learning experiences. The suggested Health and Physical Education key learning outcomes follow (Queensland School Curriculum Council, 1999, p. 7):

During the compulsory years of schooling in the Health and Physical Education key learning area, students develop knowledge, processes, skills and attitudes necessary to:

- select and use information and apply problem solving and decision making strategies to make informed decisions about health, physical activity and personal development; evaluate their own actions and the actions of others;
- develop a strong commitment to promoting equity, acknowledging diversity and establishing supportive environments with respect to health, physical activity and personal development;
- reflect and evaluate the influence of biological, social cultural and environmental factors on: their own and others' health and personal development; their own and others' attitudes towards, and participation in physical activity;
- promote the health of themselves and others and their communities;
- accept their responsibility as an individual member of a group or community to create and maintain environments supportive of optimum health;
- develop and refine motor skills necessary for participation in physical activity and acquire and apply movement concepts to enhance performance;
- develop positive attitudes towards participation in regular physical activity and of aesthetic and technical qualities of movement; and,
- enhance their own and others' self-concept and self esteem, and develop the skills for creating and maintaining positive interactions and relationships.

While the syllabus developers, responsible for the above list of outcomes, were no doubt attempting to be as comprehensive as possible, it does require some unpacking, even for an experienced teacher. This unpacking will be a focus of a number of the chapters in this monograph and it will also be an ongoing part of our class activities. However, if for now you
have noted the objectives for health and physical education that were suggested by Kirchner (1988), or noted the four areas of concern for health and physical education that were identified by Wuest and Bucher (1995), then you have made a successful start to this process.

Another view of the aims and objectives of subject can be gained from a examination of its 'content'. This is provided in the discussion that follows.

## The Content of Health and Physical Education

Again most of us will have some idea of what the content of health and physical education in schools might be and the following lists are typically suggested by student teachers:

Basic Skills<br>Swimming and Lifesaving<br>Gymnastics<br>Athletics<br>Dance<br>Fitness<br>Outdoor Activities<br>Sport<br>Minor Games<br>Health Education:

For Health Education a number of sub-areas are typically identified:

> Patterns of Growth and Development
> Need for Recreation and Relaxation
> Nutrition
> Health Products and Standards
> Environmental Hazards and Safety
> Lifestyle
> Self Concept and Health
> Drugs.

Each of the content areas listed above has been regarded as providing a particular contribution to a health and physical education program and in the past lists of content like this have been used to develop school programs.

However, in addition to reconstructing the purpose of health and physical education, the 1999 Health and Physical Education Syllabus (Queensland Schools Curriculum Council, 1997) provides another perspective on content. Rather than specify areas of approved content, they have identified an extensive range of class activities, referred to as "core learning outcomes", which are developed over six levels. Teachers are
required to identify and develop activities and experiences for their class(es) to meet these core learning outcomes.

The core learning outcomes are organised into the following three stands (Queensland Schools Curriculum Council, 1999):

## Promoting the Health of Individuals and Communities

This strand focuses on:

- acquiring information, developing skills and implementing strategies to promote personal, group and community health and safety;
- examining issues related to the selection and use of health products, services and information;
- investigating how health is linked to individual behaviours and to the interaction between people and their social, cultural and physical environments.


## Developing Movement Concepts and Motor Skills

This strand focuses on:

- enhancing physical performance in games sports and other physical activities;
- improving strategic awareness in games, sports and other physical activities.


## Enhancing Personal Development

This stand focuses on:

- personal and interpersonal skills needed to function in a range of groups and settings;
- strategies to promote positive relationships;
- knowledge and understandings necessary to enhance growth and development. 1

It could be argued that a paradigm shift has occurred here in that the new Queensland syllabus specifies the students' outcomes whereas previous curriculum documents had indicated what the teachers or subjects should do. The use of the new syllabus document, including how we can operationalise the strands indicated above, will be addressed at a later point. In addition, this will also be a concern of a number of class sessions. This Chapter now turns to the final issue to be discussed here which relates to the role of teachers in primary schools in health and physical education.

## Teachers and Health and Physical Education

In Queensland, the distribution of teaching responsibilities in government primary schools is organised on the basis of a pastoral system. That is, children are assigned to a particular grade and class to which a teacher is appointed and this teacher is responsible for all of the
areas of curriculum for that group of children. Consequently, primary classroom teachers are seen for the most part as being 'generalist' teachers.

Typically each class has its own classroom and most lessons are implemented in the confines of that area. This is substantially different to the system used in secondary schools where teachers are employed as 'specialists' concerned with only one or two curriculum areas. It is commonplace in primary schools to find a small number of teachers operating as 'specialists'. Most schools, for example, have a teacher employed as a librarian and specialist teachers of music and physical education are also common in state or government primary schools. However, specialists in these subject areas normally teach at a number of schools located in a small geographic area (referred to as a 'cluster').

The current staffing policy for physical education specialist teachers is one specialist teacher per 1000 school children. In practice this means that in the larger cities and towns (for example, Rockhampton, Mackay, Yeppoon, Gladstone, Bundaberg, etc) each primary school class receives one lesson per week from the physical education specialist teacher. In smaller two or three teacher schools for example, specialist teachers may visit fortnightly or monthly. However, if primary school pupils are to have the benefit of a well developed and implemented program they need more than one health and physical education experience per week. For example, to effectively implement a program that might address the aims of health and physical education that were indicated earlier, or to achieve the learning outcomes that are suggested in the new Queensland syllabus, then primary school classes will need to have between two and three hours per week allocated to this key learning area. This would provide the time needed to address the different priorities including fitness, motor skills, health promotion, and opportunities for sport and/or recreation as indicated in the suggested weekly overview provided below: Health and Physical Education Weekly Overview: Class 5C:

|  | Mon | Tues | Wed | Thurs |
| :---: | :---: | :---: | :---: | :---: |
| Fitness |  | 15 |  | 15 |
| Motor Skill | 30 |  | 30 |  |
| Health |  | 30 |  |  |
| Sport/Recreation |  |  |  |  |

(Total Time: 180 minutes)

In the example provided, the 'motor skill' lessons focus on the practical 'outcomes' that can be identified in the new syllabus including the development of new skills. The 'fitness' session represent short periods of high activity levels that are designed to develop and maintain various components of fitness while at same time assist students to understand the underlying principles. The sport or recreation period provides the opportunity for the children to utilise the motor skills, fitness and understandings developed in the previous components and the 'health sessions provide the opportunity to implement class based learning experiences and to critique what was achieved in the other areas.

To achieve the above we need the active participation of both classroom teachers and the school's specialist physical education teachers. The specialists have insufficient time to do themselves. In the main, classroom teachers have not been involved as much as they might have been and health and physical education has been less successful as a result. However, the most significant reason for this is that classroom teachers have not been prepared sufficiently well enough in the past to implement lessons in this curriculum area and this monograph seeks to improve on this. We will also attempt to convince you of the need for classroom teachers to be more involved in health and physical education inn the future and to provide you with the knowledge, skills and confidence necessary to be successfully involved in this key learning area.

Two readings have been included in Part 3 of this monograph which relate to this Chapter. Reading 1 provides a brief history of 'health and physical education' in Queensland and Reading 2 focuses on the origins of the new Health and Physical Education Syllabus. You may wish to peruse these readings prior to considering the Study Questions that follow.

Reading 1: Walmsley, H. (2000), A Brief History of Health and Physical Education in Queensland.

Reading 2: Huntly, H. (2000), Origins and Development of Queensland's New Health and Physical Education Syllabus.

End Note:

1. Core content details including lists are provided on pp. 23-26 of the the new syllabus (Queensland School Curriculum Council, 1999).

## Study Questions/Activities.

Following the completion of this module you should be able to respond to the following questions:

1. Suggest how Health and Physical Education could contribute to the development and education of primary school children?
2. What is 'outcome based education' and how this might this work in "Health and Physical Education"?
3. Health

Motor Skill Development
Fitness
Opportunities for Sport and Recreation.
Describe and discuss each of these components with regard to the new syllabus and suggest how a weekly program might be developed which includes all four elements.
4. How have perceptions of the purpose of Health and Physical Education changed over the last 125 years?
5. Provide a brief overview of the responsibilities of teachers with regard to primary school Health and Physical Education.

## Chapter 2

## Developing Teaching Skills for Health and Physical Education

In preparing for your role as a teacher of health and physical education, you will need information and experiences that will enable you to address the following types of questions and issues:

- what is the purpose of Health and Physical Education?
- what is included in Health and Physical Education?
- how do children acquire motor skills and movement competencies?
- how can physical activity contribute to children's physical development?
-what will be my role with regard to Health and Physical Education?
- how can I develop programs for Health and Physical Education?
- what resources exist to assist teachers in the development of programs and lesson plans in Health and Physical Education?
- what teaching strategies are most appropriate for Health and Physical Education?
- what is the purpose of evaluation in Health and Physical Education?
- how can I involve children with medical or physical disabilities in Physical Education?
- how can I integrate Health and Physical Education with other curriculum subjects?
- what is the current status of Health and Physical Education in schools?
- how can I improve my teaching practice in Health and Physical Education?

It is important to realise from the outset that you will not necessarily develop complete answers to these questions through this unit and this monograph alone. They will (I hope) provide you with a solid foundation, but it is important that you realise that you will need to look elsewhere as well. For example, units like 'Development and Disability' will provide further understandings regarding children's development, both physically and cognitively, and this unit will be equally important in contributing to your knowledge about children and how to provide them with a physical education. Other units will also provide information about teaching and organising classes, such as 'Teaching, Learning and Planning', that will also have relevance to teaching Health and Physical Education, and your school based experiences will provide you with the opportunity to utilise some of these skills and to test your emerging theories. Rather than thinking of Health and Physical Education Curriculum and Pedagogy as the unit where you learn about teaching Health and Physical Education, adopt the view that this will be achieved through your degree program. It is inappropriate to compartmentalise your knowledge and skill development as we have done in producing this degree program.

Similarly, this monograph and the Health and Physical Education Curriculum and Pedagogy unit will be of benefit to you in your attempts to prepare yourself as a teacher in other curriculum areas. One of our objectives in this unit is to develop competence in teaching outside of the classroom and you will no doubt use this environment across a range of subjects not just in Health and Physical Education. In addition we will also have suggestions and strategies regarding evaluation, planning, integration, etc. that will be appropriate for use in other curriculum areas.

The second point I want to make at this juncture, is that teaching is a highly personalised activity, and successful teaching is not necessarily achieved by replicating the practices and teaching methodologies provided to you during pre-service teacher education program. This applies to both your fieldwork and your university based experiences. Teaching requires a combination of intellectual, moral, and craft-like activity (Tom 1984) and teaching needs to be continually modified, both in content and practice, according to the needs and demands of your class. While we will be suggesting approaches that may be used in teaching particular areas of content, you will need to judge these methodologies critically. Some you may adopt as useful techniques. Others you will discard because they do not suit your approach to or your view of teaching.

Two readings have been included (refer Part 3 of this monograph) for this Chapter which provide important reference points for beginning teachers. The first reading is sourced from the Queensland Department of Education (1990) and it provides a simple yet effective overview of the wider professional responsibilities of teachers. This reading suggests that teachers have to operate at a number of levels, often simultaneously.

The second reading, which is from a text by Beverly Nichols entitled "Moving and Learning" (1986), focuses on the teaching act specifically and it introduces different teaching methods or teaching styles that may be used when teaching. While 'command' style is frequently adopted by teachers in health and physical education, Nichols argues that other approaches may be more appropriate pedagogically. For this second reading I suggest that you read the summary provided on the last page first before reading the whole chapter.

Reading 3: Dept. of Education, Qld (1989) P-10 Teaching Framework, Govt. Printer, Brisbane. p 7-12.<br>Reading 4: Nichols, B (1986) Moving and Learning, Mirror/Mosby, St Louis, p 70-80.

## Study Questions

Following your completion of this unit you should be able to respond to the following questions:

1. Describe the four professional roles of a teacher that were suggested in the Department of Education's "P-10 Health and Physical Education Framework" document.
2. Nichols has provided eight key principles for successful teaching. List and describe each of them.
3. Nichols suggests that their are five distinctive teaching styles. Identify these five teaching styles and describe the key aspects of each of them.

## Chapter 3

## The Primary School Child: Patterns of Growth and Development

In this Chapter our focus will be on developing an awareness of the physical changes that primary school students undergo during their seven years of primary schooling. This will be a key factor to consider when planning, teaching, or evaluating any movement experiences implemented as part of a physical education program.

Children usually commence their primary school after they have turned five years of age by which time they have achieved a number of significant milestones with regard to their physical and motor development. For example, most children have usually developed a reasonably mature style of walking and running by this age and they are well on their way to developing a wide range of other basic or 'fundamental motor' skills. Of course, primary school children are also changing cognitively and socially in addition to the physical changes that have been identified here. Indeed, children's development in the psycho-motor domain is often influenced by their cognitive and social development/opportunities.
'Physical Development' can be defined, for our purposes, as the physical changes that children experience, many of which can be directly observed. The following areas might be included in an assessment of a child's 'Physical Development':

```
height
weight
girths - waist, chest, upper arm, thigh
body proportions - head size, hand size
body composition - % body fat, % muscle,
limb length
lung and heart size
strength
endurance
flexibility
fitness
posture
```

Motor Development', on the other hand, refers to the attainment of motor control and motor skills. This may be evidenced by advances in the

Promote good posture. Check for inappropriate alignment and refer for attention if necessary (See Chapter titled "Class Based Health Assessment"). A daily program will produce the best result.
2. Include fitness activities of high intensity but provide regular intervals for recovery. Vary the pace of your activities during skill lessons. In games and recreational activities, limit continuous activity to no more than 10 minutes.
3. Provide activities that enhance the development of muscular strength and muscular endurance.
4. Include activities that promote eye-hand and eye-foot coordination. Use bean bags and large balls rather than small balls and provide stationary targets for throwing. Use stationary balls for developing kicking and striking skills. Children need time for practice.
5. Provide opportunities for the development of reaction time and agility.
6. Provide opportunities for learning about and developing balance.

## Mental and Emotional Characteristics

1. Attention span is short but increasing gradually. Periods of restlessness.
2. Extremely creative.
3. Enjoy activities involving rhythm and music.
4. Keen desire to repeat activities they know and enjoy,
5. Ego-centric but seek adult approval
6. Adventurous and often fearless.

## Implications for Health and Physical Education

1. Provide a large variety of activities within a lesson. Keep instructions simple and avoid overloading them with information. Maximise activity time.
2. Provide opportunities for creativity and individual expression.
3. Include movement to music experiences.
4. Allow children the opportunity to select games and other activities. Develop new experiences from past activities that they have had success in. Provide the opportunity to repeat previously learnt routines and skills.
5. Provide opportunities for individual work but encourage group sharing. Provide recognition for appropriate behaviour and responses.
6. Encourage risk taking behaviour but develop an appreciation for personal safety.

Social Characteristics

1. Individualistic
2. Enjoy working and playing with boys and girls.

## Implications for Health and Physical Education

1. Provide opportunities for working individually. Encourage team and group work.
2. Boys and girls will benefit from working together.

Middle Primary (eight, nine and ten years of age)

## Physical Characteristics

1. Height and weight continue to increase slowly but steadily. On average height continues to increase by 5 cm per year and weight $2-3 \mathrm{~kg}$ per year. Boys and girls remain similar in stature and body proportions.
2. Heart and lungs continue to developed and both resting pulse and respiration rates are slightly lower (ie, better). Cardiovascular endurance is improving.
3. Increasing muscular strength and muscular endurance.
4. Eye-hand and eye-foot co-ordination is improving. Better spatial awareness. Improved gross motor skills.

## Implications for Health and Physical Education

1. Continue to provide activities that will enhance physical development. Same program for boys and girls. Check posture and overall physical development - refer if necessary.
2. Continue to provide activities that will develop heart and lung function, including activities of slightly longer duration.
3. Provide a wide variety of games and activities involving large muscle groups.
4. Provide a wide variety of activities involving throwing, catching, kicking
and striking
Mental and
5. Increasin and theory.
6. Peer appr
7. Beginnin understandi

Implication

1. Introduce approaches cognitively a
2. Provide activities the
3. Children teaching ap of contributi

Social Char 1. Boys and reluctance ir
2. Enjoy wor

Implication:

1. Boys and choice with r
2. Provide possible allo

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and striking. Introduce activities with moving targets and smaller balls.

## Mental and Emotional Characteristics

1. Increasing attention span and better understanding of tactics, rules and theory.
2. Peer approval is becoming important
3. Beginning to operate effectively without close supervision. Better understanding of health and safety aspects.

## Implications for Health and Physical Education

1. Introduce more complex games and activities. Utilise problem solving approaches in lesson content and teaching strategies. Challenge children cognitively as well as physically.
2. Provide opportunities for small group and team activities. Include activities that promote self-concept and self-actualisation.
3. Children are becoming more able to operate in circuits and other teaching approaches that do not require immediate supervision. Capable of contributing to group safety.

## Social Characteristics.

1. Boys and girls still happy to work with one another for most part. Some reluctance in activities requiring contact or direct partners.
2. Enjoy working in pairs and/or in small groups.

## Implications for Health and Physical Education

1. Boys and girls can participate in same program but allow them some choice with regard to partners.
2. Provide opportunities for working in small groups and in pairs. If possible allow children to select partners.

## Upper Primary (11-12 years)

## Physical Characteristics

1. Height and weight continue to increase gradually up to the onset of puberty when a dramatic change may be evident, particularly in girls. Typically girls experience puberty between 11 and 14 while boys on average experience puberty 2 or 3 years later. Puberty results in marked differences in height and weight and strength. Postural problems become increasingly noticeable.
2. Heart and lungs now approach a more appropriate capacity for their height and weight. Students are now capable of much longer periods of activity at sub-maximal levels (15-20 minutes).
3. Muscle strength continues to increase, particularly in boys. Some differences between the sexes are becoming evident. Some girls will begin to decline with regard to some tests of muscular strength and endurance.
4. Gross and fine motor skills are now well developed, particularly in activities that have been pursued outside of school by members of the class. Sex differences in motor skills are becoming increasingly apparent.

## Implications for Health and Physical Education

1. Continue to provide combined boy/girl programs but allow for segregated activities if thought advisable or necessary. Check posture and refer where necessary.
2. Continue to provide activities that enhance cardiovascular function. Extend periods of activity. Provide a rationale for activities presented.
3. Continue to provide opportunities for developing muscular strength and endurance. Develop strategies so that individuals can be involved without being closely observed or monitored by others.
4. Provide opportunities for students to utilise and build upon their increasing physical capacities. Provide opportunities for segregated and mixed learning opportunities.

## Mental and Emotional Characteristics

1. Marked increase in attention span and further increases in conceptual understanding. Seek and utilises information regarding the purpose of program elements. Able to make links between health and physical activity.
2. Peer approval important but also seek independence.
3. Able to operate without close supervision. Understand and able to apply requirements regarding health and safety.

## Implications for Health and Physical Education

1. Continue to challenge mentally and physically. Learn through and about movement. Provide theory in addition to practical experiences. Provide links to other curriculum areas.
2. Provide opportunities that recognise individual effort in addition to group effort. Allow for class to participate in groups of varying membership according to the activity interests and needs of the students.
3. Students ar approaches that discuss and cont

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1. Boys and gi Antagonism base often have differ

Implications for 1. Provide oppor reduce sexual ste of activity commo

## Study Ques

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1. Differentia developme
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4. Students are able to operate in circuits and in other teaching approaches that do not require immediate supervision. Allow them to discuss and contribute to group safety.

## Social Characteristics

1. Boys and girls prefer to work with students of the same sex. Antagonism based on gender is sometimes evident. Boys and girls will often have different and sometimes conflicting interests.

## Implications for Health and Physical Education

1. Provide opportunities for mixed and segregated activities. Attempt to reduce sexual stereotyping. Develop an appreciation of the different forms of activity commonly enjoyed by wide variety of groups.

## Study Questions

Following your completion of this unit you should be able to respond to the following questions:

1. Differentiate between physical development and motor development.
2. From the previous discussion, identify the main physical changes that primary school children experience during their primary school years.
3. What does the information presented in this unit suggest with regard to the planning for health and physical education classes? Respond with regard to the three levels of primary schooling.

## Chapter 4

## Motor Learning and Skill Acquisition

While we usually think of purposeful human movement as a physical act it is important to recognise that for movement to occur a cognitive process has also occurred. That is, voluntary movement involves the brain (and the Central Nervous System) in addition to the body's muscles. Thus, in order to successfully teach physical education, we need to have some knowledge of the cognitive process that make human movement possible as well as an understanding of children's physical development.

Teachers are continually faced with the task of making decisions for their class in an attempt to promote their education. For example decisions have to be made with regard to the development of the learning environment, the selection of learning experiences and activities, the provision of feedback and encouragement, and so on. But what type of settings, what type of opportunities, what type of feedback and encouragement, etc., will be the most effective with regard to motor learning and how do we acquire motor skills? To help us to examine the literature in this area we are going to use the following model:

INFORMATION PROCESSING MODEL


The above model suggests that in order to learn a motor skill, and thus to produce an appropriate response, the learner must first receive information about what they are trying to achieve (i.e., they receive an input or stimulus through the sensory organs). This information is sent to the Central Nervous System (C.N.S.) where it is monitored and interpreted and then a decision is made about how to copy or perform the action required. The output (response) is the motor act which is achieved through the effector organs.

Clearly there are several crucial stages:

1. the quality of the stimulus or input;
2. the ability to process the input; and,
3. the ability to utilise and coordinate the motor units (or muscles).

Feedback is also important because this action is also monitored by the receptors and this provides more information again to the C.N.S. for further processing.

While this model is overly simplistic (in reality we have multiple channels and the capacity to process multiple pieces of information rather than being limited to a single channel as shown), it does identify the various components that should be considered in organising and developing lessons that focus on motor learning. These components are briefly examined in the discussion that follows:

## 1. Stimulus and Receptors

Stimulus relates to the input that learners receive from their external environment and this includes information provided through lessons. I have already indicated that the quality of the input is crucial to achieving an appropriate response and a number of points can be made in this regard.
i. Teachers need to understand that information is received by class participants through three main sense modalities;

- visual (what we see);
- auditory (what we hear); and,
- tactile (what we feel).

Teachers should utilise more than one sense modality. That is we are more likely to be successful as teachers if we are able to provide visual information in addition to explaining (auditory). Furthermore, if we can help children to feel or experience the movement (tactile) this will also assist in developing their understanding of what is required.
ii. Learners have varying degrees of sensory capacities (ability to receive information) and we should be cognisant that one child may interpret the sensory information differently to another. How one perceives is based on previous experience, interest, and motivation.
iii. Learners will also receive information that may be unhelpful or distracting. Part of the teacher's role is to filter out unnecessary stimuli so as to maintain the class' interest and motivation and there is also a need to emphasise crucial cues. For example, in a gymnastics lesson using a mini-tramp, it may be desirable to emphasise the need for a two foot take off, not to run too fast on the approach, and for the arms to be
held out on landing to assist with balance.

## 2. The Processing of Information

Despite how it has been depicted in this diagram, the decision making process is a complex operation. As information is received and communicated to the CNS it goes through a number of processes - coding, translating, comparing, organising, etc., before a resultant action is produced. The type or quality of input must be provided in a way that will assist the learners attempts to process the information. The following points are important;

- do not provide too much information at once,
- break the skill(s) down into digestible steps appropriate to the cognitive level of the class,
- reinforce important cues,
- do not go onto the next level until the previous one has been achieved,
- remember individual differences,
- repeat demonstrations a number of times, ideally from different angles.


## 3. Attention

There is clearly a need to maintain the children's interest and attention during a class because if you loose their attention there is the potential for them to miss out on important and possible crucial input. This is particularly important during the input stage. Note that teaching outside poses more problems for maintaining attention, than working inside, because you are competing with a wide range of distractions outside.

Teachers also need to repeat and help students focus on key words or cues as students will often focus on the end product of the demonstration rather than the parts and sequence of the act itself. For example, in the case of teaching swimming, students may focus on the movement of the body from A to B but they have not appreciated the mechanics of the leg or arm actions.

## 4. Output/Response

From the information processing model we can observe that each response generates further information to the receptors (feedback loop). The implication here is that teachers need to offer children as many opportunities to practice (i.e. respond) as possible so as to maximise their opportunities for gaining information.

Feedback is provided in several ways:

- internal mechanisms (kinesthesis or proprioreception);
- from their peers; and,
- from the teacher.

Feedback from a teacher is an important aspect of each lesson. Feedback can provide a number of functions, but most importantly, it should provide further knowledge, reinforce your teaching points and provide any additional information required.

## 5. Motivation and Arousal

From a teaching perspective, providing motivation is really a question of providing experiences and activities that will increase the desire of the learner to learn, As a result motivation will be intrinsic rather than extrinsic. That is, that they want to learn or to be involved.

Sometimes arousal and motivation are used synonymously and at the other end of the continuum we have anxiety. Students' best performance is usually found mid-way between these extremes as illustrated in the 'arousal curve' provided below:


Fig. 4.1. U Shaped Arousal Curve
The implication here is that lessons should be challenging and arousing but not cross the line so as to create anxiety. Note, however, that arousal is specific to the individual and that this will vary from one individual to another. Thus teachers need to develop an understanding of the arousal characteristics of the different children in their class.

## 6. Transfer of Learning

As indicated earlier, during the processing of information the C.N.S. will compare new input with old, ie., compare new information with information that was gained from previous experiences. In some activities, where new skills are similar to those previously developed, we are able to learn the new skill more easily because of this previous experience. For example, the leg action in freestyle is similar to the leg action in backstroke. This is called a "positive transfer of learning"
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Teaching steps (and physical education programs) should be organised so as to utilise this phenomena and teachers need to help children discover the similarities between new and any previously mastered skills.

However, sometimes previously learnt skills can hinder the development of new skills. For example, students who are proficient in basketball often have difficulty accommodating the stepping rule in netball, while others will forget that they cannot bounce the ball in netball. This is called a "negative transfer of learning" because a previously learnt skill makes it more difficult to learn the new skill. Teachers need to be aware of when this may be occurring and to develop learning strategies to overcome it.

## 7. Scheduling of Lessons and the Distribution of Practice

Research has shown that information processing and learning is facilitated when practice periods are short and frequent rather than long and infrequent. Consequently, in developing numeracy and literacy in primary schools, teachers schedule short daily lessons in these areas. This principle applies equally to the development of motor skills.

Motor skills are unlikely to develop from one lesson per week and children should be involved in a program in which they have multiple opportunities for practice and reinforcement. For example, I would recommend three half hour lessons per week for skill development in physical education. Any attempts to develop students' reading skills through one lesson per week are likely to be ineffective. Equally, expecting students to learn movement competencies in one lesson per week is also likely to be ineffective.

## 8. 'Whole' or 'Part' Learning

As far as developing motor skills is concerned, there is much evidence to suggest that children learn best when they are given an appreciation of the whole skill, followed by a learning of the parts (rather than trying to learn the "whole"), followed by a final stage where the parts are put together. This is known as the whole-part-whole method of teaching.

This can be appreciated by using the example of learning how to swim where the following steps are often used.

Step 1 - demonstrate the whole skill - freestyle
Step 2 - break the skill down and teach the various components, e.g., arm action, leg action, breathing, etc.

Step 3 - put the components together - freestyle
Similarly in teaching a specific dance, provide an appreciation of the
whole, then break down the dance into a number of parts or steps and then put them together. This will assist the learners in their attempts to process the information and to coordinate and utilise their motor units.

## Phases of Motor Development

In addition to having some understanding of the variables that will influence motor learning, it is also useful to have an appreciation of the 'phases of motor development', that were first identified by Gallahue, Werner and Luedke (1975), as this also has important implications for what and how we teach.

Gallahue, et al argued that there are six phases of motor development which can be depicted in the following model:


Fig. 4.1 Phase of Motor Development

## Reflexive Movement Phase

The first movements of the developing fetus as well as the neonate (newborn) are reflexive in nature. That is they are involuntary movements of the body that are subcortically controlled. Many of these reflexes
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resemble later voluntary movements while some, such as the 'sucking reflex', are thought to be survival mechanisms for without them the newborn would be unable to obtain nourishment.

## Rudimentary Movement Phase

Rudimentary movements are the first voluntary movements of the infant, including grasping, crawling, standing, walking, throwing, etc, that develop during the first two years of life. The development of efficient and effective forms of rudimentary movement during infancy form the basic structure of the more demanding movement phases that lie ahead.

## Fundamental Movement Phase

Fundamental movement patterns are an outgrowth of the rudimentary movements developed during the first two years of life. They begin developing during the third year and continue until approximately the seventh year (Year 2). These are the years in which young children explore and experiment with movement potentials of their body. Generality of movement is stressed rather than specificity and children learn to be adaptable in their movement responses. The full range of fundamental movements as suggested by Gallahue, et al (1975) are listed on page 7 cx of this monograph.

## General Movement Phase

The development or refinement of general movement forms the fourth phase of motor development and it begins around the eight year of life (Year 3). General movement skills consist of the same elements as found in the fundamental movements but stress now begins to be placed by both the students and teachers on accuracy and skilled performance. In addition, during the general movement phase children combine together two or more fundamental movements and apply them in a variety of ways. The general movement phase equates with the middle primary school years.

## Specific Movement Phase

Specific movement skills are an extension of the general movement phase but there is now an increased emphasis placed on skill and accuracy and more complex activities are undertaken. In addition, during this stage, competition often becomes more central to the activity. The specific movement phase equates to upper primary and lower secondary school years.

## Specialised Movement Phase

Specialised skill development is the sixth and final phase of motor development. It is similar to the specific skill development in many ways but it is different in that in this phase we typically select and pursue one or two activities at the exclusion of others. The level of performance is
dependent on the individual's talents and interests but it may range from elite performance (for example at Olympic level) to a recreational pursuit (for example surfing or sailing on weekends).

The following observations can be made about the Gallahue et al model:

- the model is triangular shaped for a reason. It suggests that we need a broad base of experiences before we develop specialised skills or interests;
- the model is sequential; it moves from the very simple to the more complex and from the general to the specific;
- the model provides a framework for planning and developing health and physical education programs;
- the development of fundamental movements should be the main priority of physical activity classes in lower and middle primary years;
- specific and specialised movement phases should include the selection and development of recreational skills; and,
- teachers need to help all students, at both ends of the performance spectrum (elite-social), to reach the final phase so that they develop lifelong interests that result in an active lifestyle.


## Stages of Skill Acquisition

The final discussion here provides a brief overview of the three sequential "stages" that we typically pass through in acquiring motor skills (Fitts \& Posner, 1967). As was the case in the previous discussions, this also has major implications for how we teach.

## The Cognitive Stage

This is the initial stage when the motor skill is completely new and the learner is focussing on what needs to be done in order to perform the skill. That is they are attempting to determine how to replicate or reproduce an action with appropriate timing and or sequencing. Typically this occupies all or most of the learner's available processing capacity.

## The Associative Stage

This is the intermediate stage in which the performer has the basic skill but is still fine tuning the motor skill. Often at this stage the performer has developed a specific response or approach to performing the skill and he or she is becoming more able reproduce the skill quickly and consistently. The performer now has some available information processing capacity but attention is still dominated by the demands of the
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motor skill. Many individuals remain at this stage in many activities.

## The Autonomous Stage

This is the final stage in which performance becomes largely automatic as a result of informed practice. Skills are carried out with minimal cognitive demand and an increasing amount of information processing capacity is available for processing information received from the environment. Thus they are able to make tactical and or strategic decisions.

I

Body Composition - the relative amounts of muscle, bone and fat which constitute the body weight;

## Skill Related Components of Fitness

Agility - ability to change direction with speed and control;
Balance- ability to maintain control despite changes in body shape and speed;

Coordination - the integration of the body parts to perform tasks smoothly and accurately;

Power - the total amount of force that can be produced by the body;
Reaction Time - the time between a stimulus and the response to that stimulus;

Speed- the time to cover the distance between two points.

## Requirements for Maintaining and Developing Fitness

For many embarking on an exercise program their primary concern is to maintain their health and to reduce the risk of cardiovascular disease. Regular exercise immediately eliminates one of the accepted cardiovascular risk factors, that of physical inactivity, and can moderate others such as blood pressure, body fat, and stress. However, fitness means different things to different individuals and there is no exercise program which can be prescribed to suit all people. For example, if an individual is concerned about their cardiovascular fitness they will embark on a very different exercise program than those who wish to primarily develop their muscle mass or their strength. However, it is possible to identify some overall guiding principles for fitness development regardless of the overall aims..

The first step in beginning an exercise program is to decide on the components of fitness you wish to develop, what your present level of fitness is, and what types of activities you can do and enjoy. Your exercise plan should answer the following questions:

- how often will I exercise?
- at what intensity will I exercise?
- how long will I exercise?
- what kind of exercise?

These four questions identify the four exercise variables of frequency (how often?), intensity (how hard?), duration (how long?), and type of exercise (what activity?). The discussion that follows provides details about each of these exercise variables.

## Frequency

The frequency of exercise refers to the number of times per week you should exercise. The effects of exercise are not permanent and when physical activity is discontinued your level of fitness drops. It is important then to exercise 3 to 5 times per week, each week. If you exercise less than three times per week there is little or no benefit to your cardiovascular system and no change in your long term body composition.

It may help if you set aside a particular time each day so that exercising becomes a part of your daily routine. If you find it difficult to maintain enthusiasm while exercising alone, join an exercise class or exercise with a friend.

## Intensity

The intensity of exercise refers to how hard you are working. It is based on the overload principle of training: that for an improvement to occur the body or body part must be worked harder than normal. To strengthen the heart and make it more efficient there is a certain heart rate threshold which must be reached during training.

The minimum training heart rate is $60 \%$ of the training Heart Rate (THR) and the maximum training rate is $90 \%$ of training heart rate with $70 \%$ being the heart rate throughout the exercise session $60 \%$ THR is found using the following equation.
$60 \%$ THR $=$ RHR +0.6 (max HR - RHR), where RHR is resting
heart rate and max HR is equal to 220 minus their age in years.

To find $70 \%$ THR and $90 \%$ THR substitute 0.6 by 0.7 and 0.9 respectively. Consider the case for a 20 year old with a resting heart rate of 74 .
de on the at level of ur exercise

The $60 \%$ training heart rate $(\mathrm{THR})=74+0.6(200-74)$

$$
=74+76
$$

$$
=150 \mathrm{bpm}
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The $70 \%$ training heart rate $(\mathrm{THR})=74+0.7(200-74)$

$$
=74+88
$$

$$
=162 \mathrm{bpm}
$$

The $90 \%$ training heart rate $(\mathrm{THR})=74+0.9(200-74)$

$$
=74+113
$$

$$
=187 \mathrm{bpm}
$$

This individual's heart rate while exercising should be at least 150 beats per minute, but less than 187 beats per minute. Their average heart rate for the session should be 162 beats per minutes. At this intensity, changes in cardiac function will occur, namely: a decrease in your resting heart rate a lower working heart rate for a given work load and a more rapid recovery of your heart rate to resting values after exercise

Notice that the Training Heart Rate equation takes into account two important factors: the individuals age and their present level of fitness (i.e. resting heart rate).

## Duration

The duration refers to the period of time during which you exercise. The duration will vary according to the intensity of effort but should fall within the range of 15 to 60 minutes. The duration and intensity are interrelated so that if you work at $90 \%$ training heart rate, you will need to exercise for less time than if you work at $60 \%$ training heart rate.

For unfit individuals who are commencing an exercise program, low to moderate intensity exercise for sixty minutes is recommended. Beginning at a high exercise intensity may result in injury and it may be hard to maintain.

## Type of Activity

Continuous aerobic activities which use large muscle groups are most beneficial, including jogging, swimming, cycling, rowing, skating. etc. Keeping your exercise program varied may help you to maintain it. Note that this does not mean you need to use the same exercise medium for all of your exercise sessions. For example, if you had decided to exercise three times per week you may elect to complete three different activities.

## The Principles of Training

To maximise the benefits of a fitness program, training needs to be conducted in a systematic but fun way based on the following principles which will be described shortly:

1. principle of adaptation
2. principle of progressive overload
3. principle of specificity
4. principle of reversibility
5. principle of retrogression
6. principle of regular participation
7. principle of individual rates of response

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## The Principle of Adaptation

As a result of regular training it is possible to identify many changes in the body's various systems (for example, to the circulatory, respiratory, and skeletal systems). These changes are essentially an adaptive response. That is, the body has adapted to the increased demands that were placed on it through training. Thus by purposefully applying stress we bring about a specific adaptation or change, whether it be increased muscle mass or increased cardiovascular function.

## The Principle Progressive Overload

For improvement in function to take place the body needs to be subjected to a workload slightly beyond its normal level otherwise an adaptation will not occur. Thus "overload" is an important key to a successful fitness program. However, overload is not the same as overwork. Overload involves starting with low levels and gradually increasing the workload or duration of the activity as the body adapts. Through progressive overload enough stress is placed on the body to stimulate the desired response. Overwork on the other hand can lead to exhaustion and/or injury.

Progress needs to be measured in some way so that the workload can be frequently increased (otherwise we will plateau). Measurements can be time taken or an amount lifted. In general, the size of the training improvement depends on the amount of overload. In weight lifting, if athletes work with a weight only slightly heavier than they are used to, then the training improvement is only small. However, we need to guard against overwork.

## The Principle of Specificity

The results achieved from physical training are specific to those body systems, or parts thereof, that are actually being subjected to overload. In addition, the body only responds to the way it is being exercised. For example a person who trains with weights will increase the strength and endurance of the muscles involved in lifting those weights and to the way they are being lifted. This is the principle of specificity.

Thus the aspect of fitness to be developed must be determined so that a program can be developed which will achieve the desired result. Generally speaking, an individual wanting to improve cardiovascular endurance must include activities involving large muscle groups and that result in some elevation of heart rate for an extended periods of time ( $30-45 \mathrm{mins}$ ). Frequency of training (how often) is also important. For athletes, their training must simulate their competitive activity as closely as possible.

## The Principle of Reversibility

The effects of training are not permanent. When training ceases, levels of performance drop relatively quickly toward pre-training levels. This is
because the body is adapting again, but this time to the lower work levels. However, to maintain a certain level of fitness once it is achieved, requires a lower level of training than was needed for its initial development. It is difficult to quantify rates of reversal once training has stopped, however, the rate of decline is normally lower than the rate of increase. Structural changes in muscle will persist for many months, perhaps even years, while increases in cardiovascular function are reversed more quickly.

## Principle of Retrogression

During a program of intensive training an athlete can experience a decrement in his performance. This is called retrogression and is due to a delay in the body's ability to mobilise its resources for meeting the imposed overload. This drop in performance may last from a few days to a week but the body adapts and performance eventually improves. Additional periods of retrogression may be due to the athlete having inadequate sleep, inadequate nutrition, lacking motivation, or not having sufficient rest intervals with the exercise intervals. You may have heard of an athlete becoming 'stale'. When these factors are modified progressive improvement generally follows.

A classic example is the first class cricketer who runs into a period when they are unable to make runs despite previous excellent form. Selectors are usually patient with these players knowing the lack of form is usually short term. An additional example is a person who goes to their regular aerobics workout and finds the going harder than normal on one day but is back to normal involvement the next. In some cases this may be caused by over training.

## Principle of Regular Participation

In order to achieve the objectives of training, participation must be on a regular basis. An exercise programme can be considered regular when participation occurs at least three times a week.

A programme of less than three days per week is unlikely to produce any physiological changes (i.e. no adaptation occurs). Training more than three times per week does provide additional benefits but the extra benefits become marginally less. Unless you are a top competitive athlete, three days per week is a good goal.

## Principle of Individual Rates of Response

Individuals respond differently to the same training programme. This is the result of differences in hereditary factors, previous environmental influences and age. The individual's level of nutrition, rest and sleep habits, previous injury and disease, stage of training and emotional health may also influence their physiological response to a training program.
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Thus when conducting a program or a lesson we must accept that some individuals will be more successful than others. This does not necessarily mean that the "slower" student is not trying. It may just means they have a different response (this will be examined further in the discussion that follows). Teachers, coaches, trainers and fitness instructors need to deal with their students/players/clients as individually as possible if they are to maximise the effects of training.

## An Overview of Factors Affecting Performance

The physical performance an individual is capable of producing ultimately depends on the interaction of many factors including mental characteristics, physical characteristics, and environmental influences. Some factors, such as the level of fitness, can be greatly improved through training. However, some factors, such as body type, muscle type and sex, cannot be modified and our training response and performance generally may be affected these factors which are a function of our genetic endowment. The purpose of this final discussion is to identify and discuss a number of factors which affect performance.

## Gender

There are numerous differences in the physical structure of males and females which have a major consequences for maximal physical performance. For example, males generally develop a larger muscle mass than females, and females do not possess the absolute strength of males, particularly in the upper body. Lung volumes also vary between females and males with females registering lower scores for the various lung volumes and capacities. Males also have higher blood haemoglobin content which gives them an advantage in aerobic activities. Even among trained athletes the male female aerobic capacity difference is $15 \%$ to $20 \%$. Some skeletal differences between males and females are also evident, for example hip angle, and women generally have greater flexibility.

## Height

Height affects performance in specific sports to varying degrees. The obvious advantage of height to physical performance occurs in basketball players and volleyballers. Body surface area and strength vary in relation to height.

## Age

As a general rule with increasing age, body functions and performance decline. Cardiac function, strength, lung capacity and aerobic fitness have all been shown to peak at about 25 years. This drop in function is particularly apparent where the person in under physical stress. However the effects of age can be avoided or at least reduced by maintaining an active lifestyle and an appropriate nutritional balance. Smoking, alcohol
and various other substances should also be avoided.
In terms of world class competition, most athletes reach their peak in their twenties, particularly in sports that require a combination of experience and brawn. In several sports such as gymnastics and swimming, particularly for females, best performances are recorded much earlier.

## Body Type

Certain body shapes suit particular sporting and recreational events. Somatotyping is a means of classifying individuals according to their body shape. Body types are classified as follows:

> Endomorphic types - high body fat, round, low muscle mass suited to low endurance activities such as shot put.

> Mesomorphic types - low body fat, muscles clearly defined, square, strong body suited to strength and power activities.

> Ectomorphic types - low body fat, low muscle mass, angular body suited to endurance type activities.

When somatotyping we usually allocate a primary and secondary classification, for example a Meso-Endomorphic.

## Flexibility

There is great variation between individuals with regard to their flexibility and, as indicated earlier, women are generally more flexible than men. Flexibility is limited by genetically determined factors such as bone structure, the arrangement of ligaments and the length of muscles and tendons. Flexibility can be improved through training. Too little flexibility can result in muscle strain, while too much flexibility an predispose the individual to an injury. Some sporting activities, such as gymnastics, demand good flexibility.

## Muscle Fibre Type

Muscle fibres are of two main types: fast twitch and slow twitch and most muscles have a mixture of fast twitch and slow twitch fibres. The actual proportions are genetically determined and this cannot be changed through training. Fast twitch fibres are larger and stronger and are used in sprinting, jumping and throwing events. Slow twitch fibres are thinner and not as powerful but they can contract for long periods without becoming fatigued. A significantly larger proportion of one muscle fibre type (say greater than $70 \%$ ) will predispose that athletes to succeed in activities appropriate to that fibre type. For example, successful sprinters will have large proportion of fast twitch fibres in their quadriceps and hamstrings

## Chapter 6

## Development of Programs for Health and Physical Education

## Introduction

The purpose of this Chapter is to examine the different levels at which planning should be completed for the successful development of a Health and Physical Education program in primary schools. While during your initial school experiences your attention may well be focused on the development of a single lesson plan, for a lesson that you have been asked to implement, the intent here is to examine planning from a much wider perspective. In this wider perspective, individual lesson plans represent the final outcome of the planning process. Following an overview of the different levels of planning, each of the identified levels will be discussed in some detail. This chapter also provides examples of planning instruments appropriate to the different levels.

## Levels of Planning

The starting point for the development of a school's Health and Physical Education programs, in theory, should be the approved syllabus, or curriculum document, which indicates the program outcomes and content that schools should adopt. In Queensland, this is the new Health and Physical Education: Years 1 to 10 Syllabus (Queensland School Curriculum Council, 1999). Schools are charged with the responsibility of planning and developing their programs so that they meet the requirements of the current syllabus document (these were identified in Chapter 1).

In completing this task it is possible to identify the following five levels of planning:

```
- Overall Plan - operates at the school level
- Year Plan - year level
- Unit Plan - class level
- Lesson Plan - class level
-Weekly Plan - class level
```

Planning for each of these levels is influenced by a range of factors, including,:

- childrens' level of physical growth and development;
- childrens' level of skill development;
- our knowledge of motor learning;
- childrens' previous experience;
- climate and weather;
- school size (student numbers and the number of classes to be catered for);
- school calendar and school events (sports day, school dance, class camp or excursions);
- schools' agreed objectives or outcomes for the Health and Physical Education program;
- school policy relating to other areas, such as outdoor education and sport;
- staff levels and teachers competencies;
- equipment and facilities available; and,
- childrens' interests.

How some of these factors influence planning for health and physical education will be examined in the discussion of the five levels of planning that follows.

## Overall Plan

An "overall" plan, sometimes referred to as a "school plan", provides an overview of a school's Health and Physical Education program. Overall plans for physical education and health education are sometimes developed separately depending upon the relationship that exists between these areas within a particular school. For example, in those schools that have a physical education specialist, it is not uncommon for the specialist teacher to develop a school physical education overall plan and for the classroom teachers to develop the schools' health program.

An overall plan (or plans) would normally indicate the main areas of content that have been identified for the school program and the scope or level of treatment of each of these areas of content for each school year. In addition to reflecting the state syllabus for health and physical education, these plans should also reflect our understandings of childrens' growth and development and theories relating to skill acquisition. They should also build upon the childrens' previous experiences and attempt to offer a wide range of activities and experiences. Some schools use their overall plans to develop a school
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## Year Plan

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## Unit Plan

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For examples, of Councils web sit Education project
based "Health and Physical Education Policy" document which indicates the school's aims and objectives, or 'outcomes', for Health and Physical Education, the contribution of the various areas of content, the time allocation and the roles of teachers with regard to Health and Physical Education. Overall plans are more likely to be successful when they have been developed by all teaching staff with assistance from appropriate resources or personnel.

An example of an overall plan for physical education is provided on page 48. Individual year' and 'class programs' should be developed from the schools' overall plan.

Health and
education
nd physical of planning
orovides an am. Overall sometimes sts between chools that e specialist and for the
n areas of re scope or chool year. d physical andings of to skill previous vities and a school

## Year Plan

A year plan' represents a single year (for example, Year 2) from the overall school plan but expanded to provide more detail regarding the content and scope for a particular year or grade. Objectives or outcomes for a particular year/class may also be developed for this level. Year plans may be divided into terms (see page 49) or semesters or even 'units' and it may be developed with consideration of other class activities such as outdoor or environmental education excursions, class or year camps etc.

I would argue that year plans should be developed by teachers at the class or year level (ie if there are four Year 2 classes as a school that they should develop a year plan as a group). That is that classroom teachers make decisions about what their class will achieve in Health and Physical Education and when. Classroom teachers may need some support, however in determining how. The latter is the purpose of Unit Plans and Lesson Plans.

## Unit Plan

A 'unit plan' represents a series of lessons in one area of content and quite often this is developed around a particular theme. For example, a unit on 'Throwing and Catching' for a Year 1 class might be developed based on using bean bags. Most unit plans contain between four and eight lessons. This provides children with sufficient time for practice and reinforcement while maintaining their interest and motivation. I would argue that classroom teachers 'source' unit plans rather than accepting the responsibility for writing them. However, it is important to realise that plans obtained from 'curriculum packages' will require adjustment and modifications.

For examples, of unit plans refer to the Queensland School Curriculum Councils web site (http://www.qscc.qld.edu.au). The Health and Physical Education project team is in the process of completing a range of modules
for use by teachers throughout Queensland. When finalised these modules will cover all of the core learning outcomes listed in the Years 1 to 10 Health and Physical Education Syllabus. Alternatively refer ACHPER's 'Physical Education: Primary" series which includes modules in gymnastics, dance and fitness .

## Lesson Plan

A lesson plan is a plan for a single lesson. Its structure will vary according to the area of content and the teaching strategies to be utilised but the planning sheet provided on page 50 contains commonly used headings. Lesson plans may vary in length according to the lesson type and duration. For example, fitness sessions which normally last for 15-20 minutes would require less details than a physical activity or a health lessons which has been allocated 30-45 minutes.

A common breakdown of a physical activity lesson would be as follows;

$$
\begin{aligned}
45 \text { minutes - } & \text { 5-10 mins warm up game/activity } \\
- & 20-25 \text { mins skill development } \\
- & 10-15 \text { mins game or activity which } \\
& \text { incorporates the skill being developed. }
\end{aligned}
$$

Time for changing and showering may also be required depending upon the activity.

Lesson plans require a significant amount of time to prepare, and arguably, greater knowledge and experience in health and physical education than is possessed by many classroom teachers. Therefore, again it is suggested that lesson plans be provided by a physical education specialist, or alternatively sourced from Queensland School Curriculum Councils web site (http://www.qscc.qld.edu) or ACHPER's 'Physical Education: Primary" series.

## Weekly Plan

A weekly plan indicates how the time allocated to Health and Physical Education is allocated to the various components of the curriculum area each week. This would normally be completed at a class level by the class teacher.

It can be argued that Health and Physical Education should be allocated between 120 and 180 mins per week and the following has been suggested as one example of how this time could be used (numbers indicate minutes per session or lesson):
lised these the Years 1 atively refer les modules
e will vary be utilised monly used lesson type st for $15-20$ or a health
follows;
ed.
ng upon the
epare, and id physical Therefore, al education Curriculum s 'Physical

|  | Mon | Tues | Wed | Thurs |
| :--- | :--- | :--- | :--- | :--- | | Fri |
| :--- |
| Fitness 15 <br> Motor Skill |
| Health |
| Sport/Rec. |

## Planning Instruments

On the pages that follow, an indication of the detail required at each of the different levels of planning has been provided. At the school level, the starting point for panning is a school based program (Plan A) which is based on the approved curriculum. From this, each year level is able to identify their areas of concern and develop their objectives and content.

From the year plan, a term programs can be developed (Plan B) and subsequently unit and lesson plans (Plan C). I would argue that classroom teachers should be involved in developing School policy and overall plans for Health and Physical Education and for determining year and term plans. I believe that unit plans and lesson plans should be provided by either a Physical Education specialist or obtained from a resource. I do not believe that teachers have the time nor the experience to write individual lesson plans. Teachers determine what should be taught and when and resources provide the how to achieve this. Of course teachers will need to monitor their classes response to the lesson during the lesson and modify it as required.
nd Physical culum area by the class e allocated n suggested ate minutes

## Example of an Overall (or School based) program (Plan A)

Source: South Australian Department of Education, (1982) Daily Physical Education program, ACHPER, Adelaide. Note that "Health" was not included in the "Daily Physical Education program" and that physical education was seen to contain five main areas of content (listed in the left hand column).


## Planning Sheet for a Term program (Plan B)

tily Physical ot included acation was left hand


## more complex

 ire dances.ent, music and rmance and

## ing atrokes.

This can be reduced to develop an overview for a shorter period. For example, a six or four week block. Alternatively, it can be extended to develop a year program for a particular class or year level.

## Health and Physical Education Program: Term Overview

Class: ........... Teacher: ............................................ Term: .......... Year:


## Planning Sheet for a Unit and Lesson Plans (Plan C)

A number of these sheets would normally be required to develop a Unit plan, possibly one or more for each lesson. (Note: this sheet has been reduced to fit onto this page and that it should be used as a guide for headings and general layout)


## Plan C)

develop a Unit sheet has been 1 as a guide for

## Study Questions/Activities

Following your completion of this unit you should be able to respond to the following questions/activities:

1. Describe the five levels of planning that have been suggested.
2. List and discuss factors that influence planning at the year or class level.
3. Visit the Queensland School Curriculum Councils web site at http://www.qscc.qld.edu.au and identify what modules are available to teachers and how these may be used.

## Chapter 7

## Evaluation in Health and Physical Education

## Introduction

Evaluation is an important part of the professional activity of most teachers and it may serve a number of functions. At one level, it may serve as a process for evaluating the success, or otherwise, of students in a section of work, and this often provides the basis for reporting to parents and others. At another level, it provides information regarding the success, or otherwise, of the teaching of a unit of work, and this provides the basis for reviewing and improving teaching performance. Evaluation is arguably the most obvious and most common form of research completed by teachers.

Most physical education teaching methodology texts will tell you that it is important to evaluate students for the following reasons:

- to determine if program objectives have been met;
- to identify children's learning difficulties;
- to sort children into ability groups;
- to determine if children are ready for the next learning experience;
- to assess the suitability of programs;
- to evaluate the appropriateness of teaching strategies;
- to determine the needs and interests of specific groups;

The "Daily Physical Education program" (South Australian, Dept. of Education, 1982, Vol. 4 p $14-16$ ) provides some appropriate advice for teachers wishing to conduct evaluation for these purposes:

## ASSESSING STUDENT PROGRESS

## Fitness Testing

Attainment of a reasonable level of physical fitress is a major goal of the programme. It is important for teachers to have knowledge of each child's fitness level and to be in a position to give individual children assistance and encouragement.

## Skills Testing

During physical education skills lessons the children are constantly being asked to respond to movement tasks. The challenges inherent in these tasks can often be interpreted as skills tests because they provide feedback to children as to how well they are progressing.

Day to day opportunities for children to assess how well they are performing their skills in terms of accuracy and control also provide the teacher with an indication of how effective their teaching has been.
Periodically it might be necessary to assess the performance level of the children in a more formal way. Information gathered in this way can be used to illustrate to parents and school administrators that the skill levels of the children are improving. A more formal approach to skills testing will identify those children who have co-ordination problems and need specialised assistance and those children wo are highly skilled and need extra challenge and encouragement.

A wide range of specific skills tests are available in texts and from advisory personnel. Teachers can also develop their own, in accordance with the skills they wish to test. Some tests are included at various stages in the lessons.

There will be other opportunities during the year-for teachers to assess the progress of the children (sports days, athletics days, swimming days . . .).

Involvement in sports teams, dance or gymnastics clubs also provides information about the skill level of the children.

## Attitudes to physical education

Children's general attitudes can be gauged from day to day. If children are observed to be interested, involved and keen to show what they can do, then teachers can be reasonably assured that the effect of the programme is positive.
Are the children:

- active and energetic
- responding to challenges with enthusiasm
- well and happy(no anxiety about the activity)
- enjoying physical activity
- curious, questioning
- keen to show what they can do
- avoiding any activities
- naturally playful
- learning to work together
- willing to try new challenges?

If assistance is required concerning the attitude of the children toward aspects of the programme, it is recommended that advice be sought from colleagues or advisory personnel.

There is a wide range of rating scales and attitude checklists available to assess the children's attitude toward vigorous physical activity, skills, individual and group involvement.

## Knowledge of Physical Education

The programme emphasises the importance of knowledge and understanding as children advance through the primary school. During lessons (and particularly during demonstration) teachers should question children, observe and note the responses they make about their bodies and performance, pointing out correct techniques when necessary and explaining principles of movement in-simple terms.

In physical fitness lessons discussion concerning reasons for vigorous activity required at a level commensurate with t children's intellectual development. Leve and 7 children make logical cognitive lin between their physical experiences and
environment, while Level 4 children would discussion on their immediate experienc

During the upper primary years
comprehension and application of knowl become important in Physical Education children begin to deal in a more sophistic way with concepts like the elements and strategies of team play, dance, games making and body functioning.
It is not expected that children be formal tested in terms of knowledge and understanding of all the concepts on a regular basis. However, there may be tim during other lessons (health, science, vis art, music . . .) when knowledge and understanding related to physical educat can be reinforced through questioning, written exercises and discussions.

## RECORDING INFORMATION

The Record of Progress provides a sugge format for recording the children's progre and could be used to compile the Report Teachers should compile a Record of Progress at least twice during the year.
The example provided indicates the type assessment opportunities which could b used in addition to day to day observatio
A daily allocation of time for physical education suggests an obligation to info parents about the progress and involvem of their children. Because daily physical education concerns a variety of experien and involves a significant amount of time effort, thoughtful and sensitive reporting required. Parents appreciate the concern shown when reporting is specific, inform honest, encouraging and positive.
When deciding on a method of reporting children's progress to parents, care mus taken to ensure that it is compatible with school's general method of reporting, an that it contributes to a total educational profile of the child.

## Report Card



## Comments

## Record of Progress

NAME

## PROGRAMME GOALS

ASSESSMENT OPPORTUNITIES
COMMENTS

Body management and control

- movement control and efficiency
- co-ordination
- using body parts on both sides of the body
- inventing and performing simple movement sequences

Sequence building in Gymnastics
Athletics 5 Star Award Scheme
Swimming Ability Assessment

Hand-eye \& foot-eye co-ordination

- skills of handling small equipment (balls, bats, ropes, hoops . ..)
- sports skills
- knowledge of games/simple rules


## Rhythmic ability

- appreciates rhythm and tempo
- response on cue
- knowledge of use of different basic steps, holds

Basic Skills Test in Games Skills

Performance in modified games

Performance of folk, social and square dances

Movement inventiveness

Games making
Dance making
Sequence building in gymnastics

Physical growth and development

- posture
- height
- weight


## Physical fitness

- sustaining vigorous activity
- for long periods.
- developing strength
- extending joint mobility
- basic knowledge of effects of exercise on the body

General Attitude

- involvement and enthusiasm

Daily class observations

- enjoyment
- initiative

Specific
Dance, Fitness ...
Social competence and confidence

- in small groups
- in large groups


## Safety aspects of movement

- awareness and understanding of safety measures.
- performs movernents safely

Daily class observations

Attitude inventory
Observation checklist

Swimming Ability Assessment<br>Gymnastics Record of Progress.

Fitness 4-item test
Distance run times
Circuit scores
Clros

School Health Service

However, we need to take care in the development of evaluation strategies. When we read most physical education texts, or curriculum materials like the 'Daily Physical Education program, you may get the impression that teachers should evaluate their teaching simply by determining to what extent your objectives have been met. While this is technically very simple and easy to administer it is not that simple as Tinning (198, p 90) has indicated:
'...if an objective of a PE program was was to get the the class fit then a series of fitness tests at the conclusion of the term might be all that is needed to evaluate your teaching effectiveness. (If you were really keen you might even start with a pretest so that you have data that can be used as a basis for making comparisons.) You could even rank the kids in your class from the most fit to the least fit and then compare the fitness of your class with the fitness levels of other children in the nation using standardised national fitness tests such as the ACHPER tests. You could send reports home to parents to let them know how how their children have performed - all in the best tradition of curriculum experts.

Lets say that you are even more progressive and can see the problems in using normative standardised tests and you decide instead to test them on their improvement over the duration of the term. To your great pleasure you find that all of them have improved over the duration of the term which substantiates your view that you are an effective teacher.

Or does it? What if I was to tell you that in the process of achieving your objectives the kids were turned off fitness for life, avowing never to run laps or jog or do chin-ups ever again.

This is not as far fetched as it might sound. Many children are failed by the system because teachers have been insensitive to the hidden learnings that have taken place. That is, in addition to the formal learnings that will be experienced through participating in your lesson, your classes will also be developing a whole range of hidden learnings. These hidden messages may well be more critical in the long term than the short term behavioural objectives that you may have established for a lesson.

Furthermore evaluation need not be confined to the formal evaluative techniques that have been suggested thus far. The Heath Education Curriculum Guide (Department of Education,1982), which has been supplanted by the Health and Physical Education: Years 1-10 Syllabus, (Queensland, School Curriculum Council, 1999) suggested the following approaches (p 41) for health which could equally apply to physical education:

```
EVALUATION
should not focus simply on factual
recall. Although an effective health
program will increase children's
knowledge, teachers should evaluate
changes in attitudes that may have
been influenced by teaching approaches
and assess whether children have
improved present skills and developed
new skills
```

Knowledge/Understanding

- Short Answer
- Matching
- Demonstration
- Multiple Choice
- Free Response
- True/False Questions
- Oral Questioning
- Picture Tests
- Appraisal of Children's Projects
- Sentence Completion
- Essay Questions
- Self Assessment Cards
- Questioning
- Observation
- tuckshop
- playground
- classroom
- Essays

Competence - Skill

- Observation check list
- Demonstration
- Performance Rating Scale

The new Health and Physical Education syllabus also provides a discussion of assessment (Queensland, School Curriculum Council, 1999, pp 28-31), including a discussion of techniques for gathering information about student learning. This will be examined in tutorial sessions.

## Study Questions

Following your completion of this unit you should be able to respond to the following questions:

1. Describe and discuss reasons for conducting evaluation in Health and Physical Education.
2. Discuss the different approaches that can be used in evaluation.
3. Differentiate between formal learning and hidden learning. What are implications with regard to evaluation in Health and Physical Education.

## Chapter 8

# Medical Considerations and Adaptive Physical Education 

## Introduction

'Mainstreaming' in Queensland schools effectively means that children with disabilities ranging from partial hearing losses to cerebral palsy will be integrated into regular classes. As a result, teachers need to be aware of how they can accommodate the needs of children with a range of conditions into their class, and what information might exist to assist them.

The purpose of this Chapter is to provide some details regarding the range of medical conditions that are now likely to be encountered in schools and the implications for students with these conditions for their involvement in physical activity. Note that mainstreaming is sometimes referred to as 'integration', a term which is also used in reference to cross curricular approaches to teaching (this is examined in Chapter 10).

For this topic you are referred to a reading developed by David LaPere regarding children with disabilities facilitating their involvement in physical education. Based on a publication of the Australian Sports Commission, LaPere identifies a large range of medical conditions that are likely to be found in schools and provides practical strategies for involving persons with these conditions in physical activity.

Reading 3: LaPere, D. (2000) Children with Disabilties: Guidelines for Teachers of Physical Education.

## Study Questions

Following completion of this unit you should be able to respond to the following questions:

1. What are the implications for 'mainstreaming' with regard to teaching Health and Physical Education?
2. List and describe the range of medical conditions that may be found in schools.
3. What are benefits of regular physical activity for children with medical conditions?

## Chapter 9

## Health Education in Queensland Primary Schools

The purpose of this Chapter is to provide a brief overview of policy and practice relating to health education in Queensland primary schools. At one level this is an historical account but there some important insights here for health education in the immediate future.

As you would be aware from your previous reading, the new Health and Physical Education syllabus (Queensland School Curriculum Council, 1999) foregrounds health and lifestyle as key foci. While some may view this as a sudden and radical reorientation of health and physical education, an examination of curriculum policies for health and physical education reveals that staff of the Department of Education have been attempting to do this for over three decades. For example, the 1972 Health and Physical Education Curriculum Guide (Queensland, Department of Education) provided the following initial statement (p 1):

> Health and physical education has a distinctive role to play in individual growth and development. It focuses on the increasing need to equip young people with the knowledge, skills and attitudes to make rational, informed decisions about their own health and the health of the community at large, and to appreciate the importance of developing lifelong patterns of physical activity. It provides opportunities for young people to learn about health, to practice desirable health behaviours, to demonstrate health care skills, and to develop responsibility for personal and social health. It also provides opportunities for them to experience different forms of physical activity, recognise the value of physical fitness in maintaining health and well being, and develop the necessary physical and social skills for lifelong participation in physical activity.

Despite this clarity of this statement, investigations into practices in Queensland schools over the decade that followed its publication suggests that there been little success in achieving the above. Consequently, staff of the Curriculum Branch published a curriculum policy document specifically for health education in 1983. This document, which, interestingly, did not include any discussion of physical education,
lists the following objectives for Health Education (p 3.):

1. develop knowledge that when applied promotes health;
2. recognise the relationship between behaviour and health;
3. identify desirable health behaviours;
4. identify and resolve personal health problems; and,
5. develop an awareness of community health services.

The Health Curriculum Guide also indicated that these objectives could be achieved through the following nine areas of content, which were referred to as nine 'main ideas' (Queensland, Department of Education, 1983):

1. patterns of growth and development;
2. recreation and relaxation needs;
3. nutrition;
4. health standards;
5. environmental hazards;
6. lifestyle;
7. consumer education;
8. self concept and health; and,
9. drugs.

To support teachers in their development and implementation of health education programs and lessons, the Department published twenty seven "Source Books" (see for example, Queensland, Department of Education, 1989) which contained sample numerous lessons and learning experiences for each of the nine main ideas for each level of primary school (lower, middle and upper). In addition, the release of the Source Books was supported by a squad of support teachers to inservice classroom teachers in their use. Thus, it could be argued that the Department had put in place all that might be required to assist teachers in the development of lessons in health education.

In the mid-1990s, I conducted some research to obtain some insights into
insights into what was occurring with regard to Health Education in Queensland schools. This research included visiting $15 \%$ of the 102 primary schools in this region and interviewing $20 \%$ of the classroom teachers at the sample schools about their classes health education. The following notes provide a summary of the teacher's responses to the key questions.

Question 1. How often does your class have a health lesson?

| Options | \% of teachers |
| :--- | ---: |
|  |  |
| Daily | $0 \%$ |
| Weekly | $14 \%$ |
| Fortnightly | $7 \%$ |
| Occasionally | $21 \%$ |
| Combined with other subjects | $58 \%$ |
| Other | $0 \%$ |
| Never | $0 \%$ |

What does this suggest regarding the status of Health Education primary schools?

Question 2. Are these lessons part of a year or class Health Educationprogram?

Options $\%$ of teachers

| Yes | $16 \%$ |
| :--- | :--- |
| No | $84 \%$ |

What does this suggest regarding the status of Health Education in primary schools? What might this mean with regard to planning for Health Education in primary schools?

> Question 3. Do you plan your class's Health Education individually or is it part of a 'school-based program?

Options
\% of teachers
Individually 87 \%
School Based $13 \%$

The Health Curriculum Guide and indicated quite strongly of the need to develop school based programs to ensure that all areas were covered and that the primary school students had the benefit of a sequential program.

