

**AN ANALYSIS OF ACADEMIC LEARNING
TIME IN PRIMARY PHYSICAL EDUCATION
CLASSES IN THE STATE OF BAHRAIN**



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ABSTRACT

The lack of sufficient data on how time is spent in physical education lessons at primary schools in the State of Bahrain served as the motivating factor for this study. Specifically, the purpose of the investigation was to investigate how primary school students spend their time in physical education lessons. A secondary purpose was to determine whether there were any differences between the ALT-PE scores for teacher gender, teacher qualification, and subject matter being taught.

Data were collected during the first term of the 1993-1994 academic year at primary schools in the State of Bahrain. The subjects were forty physical education teachers of both sexes (20 males and 20 females). Each teacher was observed teaching one lesson according to the ALT-PE (Version II) instrument developed by Siedentop et al. (1982). A total of 40 lessons were observed. The interval recording technique employed by ALT-PE was an observe/record format (6-second observe, 6-second record). Three target students were observed in each lesson. A total of 7,200 intervals of data were coded for the subjects.

Descriptive statistics included frequencies, percentages and means. These statistical procedures were computed between observational categories in the ALT-PE system to determine how primary students spent their time during physical education lessons. A t-test was computed to test the central questions of the study.

The finding revealed that primary physical education lessons in primary schools in Bahrain appear to be characterized by much larger periods of not motor engaged activity (about 70%) rather than motor engaged. Students spent 30% of lesson time in management and transition activities, 22% in knowledge instruction and 20% waiting to participate or take a turn. The students were coded as motor engaged only 32% of the lesson time. The result of this study demonstrated that of the 32% of the time that primary students in the State of Bahrain were actively participating, they were effectively engaged in motor appropriate activities, which reflects the amount of ALT-PE, only 19% of the time.

A t-test computed for this study showed that no significant difference was found between the ALT-PE scores of students of male and female teachers. With regard to teacher qualification, a significant difference ($p < .001$) was found between the BPE and DPE teachers. BPE teachers had significantly higher ALT-PE than DPE teachers. Significant differences in ALT-PE were also evident across the two activity lessons observed ($p < .05$). These results suggest that teacher qualification may have an impact on the amount of ALT-PE. Also, the results indicated that ALT-PE might be influenced by the nature of the activity taught.

CHAPTER - 1 -

INTRODUCTION AND BACKGROUND

1.1- Introduction

1.2- General Background of Bahrain

1.2.1- Historical Overview

1.2.2- Education System

1.2.3- Physical Education in the Primary School

1.2.4- The Status of the Primary PE Teacher

1.3- Statement of the Problem

1.4- The Purpose of the Study

1.1- INTRODUCTION

The last fifteen years has seen a marked shift in the interest of education researchers. In the past, most of the research on teaching has focused upon interactive teaching, that is, the event that occur when the students are present in the classroom. In addition to providing a description of classroom processes, examination of student/teacher interaction has focused on the question "what teaching strategy works best?" Recently, researchers have narrowed the focus of their attention to systematically observing the classroom with an eye towards relating particular observed variables to student learning and thus, indirectly producing estimates of teacher effectiveness. This systematic observation has provided a valuable techniques for studying and describing real-world events in the classroom or gymnasium and even produces surprising accounts of what actually happens in the class. When what happens in the classroom are carefully and systematically observed and analyzed, teachers are enabled to make enormous improvements in their own performance. By carefully using such a system, one may be able to describe the learning and teaching in terms of reality rather than rhetoric.

The development of systematic observation systems enabled the physical educationist to collect descriptions of behaviours, events and time utilisation, for example. Teachers were observed in naturalisation setting and analyzed for type of feedback they offered students, how often information was offered and whether they initiated moves or responded to students

initiatives. Correspondingly, Students behaviours were also observed and data analyzed to see whether they spent their time waiting, engaged in "on-task" or "off-task" activity or involved in different stages of game playing. In fact, the development of systematic observation were undertaken in the belief that such systems could be used to describe real-word events in the classroom or gymnasium and analysing these events in a way that lead to a better understanding of what transpired.

Several systematic observation systems have been developed especially for observing and measuring student behaviours in physical education. These systems have been based on observation instruments used in the earlier classroom research. Perhaps the best known system is the Academic Learning Time in Physical Education (ALT-PE) observation system. The ALT-PE instrument has been used to provide researchers with simple evidence of what students are learning or whether learning is actually taking place; it has also been used to provide an indicator of teacher effectiveness.

The ALT-PE system provided a slightly different emphasis on the focus of attention. In the past, teacher behaviour was the first focus of the teaching process and student behaviour was the second. Now the two were seen as being inextricably linked and an ALT is used to measure student achievement and effective teaching. ALT-PE observation instrument collects information about students' "time-on-task" with the working hypothesis that students of effective teachers will spend significantly more time on learning tasks than the

students of ineffective teachers.

The ALT-PE system observing student behaviour (waiting, practising, listening, playing...etc), and also collects indirect information about teacher behaviour (organizing, providing information,...etc). Thus, ALT-PE examines the relationship between what teachers are doing and the amount of time students spend on learning specific movement tasks. For example, when teachers organize their lesson well, they will increase the amount of ALT-PE. Also, when they minimize the time spend on the transition between activities and dealing with disruptions, they will be more effective. Therefore, the use of ALT-PE systematic observation instrument can assist the teacher not only in designing practices to maximize students development but to effectively use the time allocated for practice.

The range of interests represented among ALT-PE researchers has produced remarkably extensive and relatively consistent body of knowledge about teacher behaviours and student time-on-task variables in physical education. Reliable ALT-PE records now exist for primary (elementary), secondary, and college students; traditional and movement education approaches to primary physical education; and a representative variety of movement forms including team and individual sports, gymnastic, dance, swimming and fitness activities.

Therefore, the behaviours of students or teachers can be systematically observed, recorded and analyzed. This kind of data collection can give high reliability about effective teaching. Considering the importance of systematic observation, it is somewhat surprising that little research work in Bahrain has examined the student or teacher in a naturalistic setting. Inevitably the behaviour of one is reflected in the behaviour of the other and the two are inextricably linked.

A number of questions arise from the above comments. For example, how much time is spent by primary physical education students:

- practising motor appropriate
- waiting in a line
- waiting for a turn
- listening to the teacher
- managing and organizing equipment
- transition from one place to another
- playing game

These are some of important questions to which, in Bahrain, we currently do not have sufficient information to be able to give a definitive answer. Some information and guidelines are available from other parts of the world which are extremely helpful. However, it is sometimes difficult and often inappropriate to interpret data from one culture and transpose the results into another culture. Indeed this can sometimes prove to be

misleading.

It is clear that it is necessary to carry out some kind of research in this area in Bahrain and to collect some data regarding how students spend their time in physical education lessons and to determine the amount of ALT in primary PE lessons. The need for analysis and measurement the ALT-PE is evident because of the changes which are occurring in the physical education field in Bahrain society.

In the researcher's opinion the analysis of ALT-PE will help to evaluate the present status of physical education in the primary school in Bahrain and to provide information for future consideration. This study will also help to provide the authorities and teachers in the State of Bahrain with a sufficient data on how time is spent in physical education lesson.

1.2- GENERAL BACKGROUND OF BAHRAIN

1.2.1- HISTORICAL OVERVIEW

The State of Bahrain comprises an archipelago of thirty-three small islands, and is situated roughly half-way down the Arabian Gulf -24 Kilometres from the eastern coast of Saudi Arabia and 18 Kilometres north of the Qatar. The state takes its name from the largest island Bahrain, which is 586.5 square Kilometres. The total population is estimated to be 518,000 (1992 figure) two-thirds of whom are Bahrainis and the remainder foreigners (KPMG, 1992).

Al-Bahrain literally, "a pair of sea", owes its name to two water flows that washes its destiny; the warm salt sea around it and the deep fresh water tables bubbles forth in scores of artesian wells to nourish green orchards of date palms. A growing consensus among modern scholars identified Bahrain with the ancient trading centre of Dilmun, cited in the epic of Gilgamesh. Other Sumerian legends speak of "The Land of Life" (Ministry of International, 1985). Researchers link "The Land of Life" to modern Bahrain, pointing out the existence of two vital elements of life -water and agriculture which the other land of the Gulf lacked.

After its conquest by Islam after 600 A.D., Bahrain remained its place as a famous commercial centre on the trade routes between the East and West. Its pearls were sought by merchants around the world, and this

contributed to a cosmopolitan atmosphere.

Up until the 18th century Bahrain was conquered and changed hands many times. From 1726 the Al-Khalifa family inhabited Bahrain. When India became important to the British Empire, Bahrain became an important stopover on the main route to India. In 1861 a treaty of peace and friendship was signed between Bahrain and Britain.

The year 1932 marked the dawn of a new era for Bahrain when oil was discovered. This triggered the search for other reserves and the later discovery of vast oil fields in Saudi Arabia, Kuwait, and Iraq. The revenues generated from oil enabled Bahrain to progress from a poor small island without administrative public and social services into a modern country with many facilities. The Bahrain government has used the income to finance schools and education, roads, houses, and hospitals. In 1971 Bahrain gained full independence from Britain.

1.2.2- EDUCATION SYSTEM

Bahraini education is a centralized system. The Ministry of Education administers the system, supervises the curriculum and pays teachers' salaries in all government schools. The historical roots of education in Bahrain can be taken back to 1919 when the first public boy school was opened. It was the first public school in the Arabian Gulf. Teachers were recruited from

Lebanon, Syria and Egypt. The first girls' school opened in 1928 and the first secondary school for boys in 1940.

Education is totally free. Students are not only provided with textbooks, but they also receive transportation. The education system is non-compulsory, although almost all the school aged children are in attendance. The school education system is separated into three levels, primary, intermediate, and secondary (see Appendix 1). The primary cycle is 6 years in duration while the intermediate and secondary cycles are both 3 years in duration. In addition, today almost all children under 6 years old attend nursery (kindergarten) school, which is private. For the first three years, in primary schools students are normally promoted at the end of the school year. However, public examinations are held at year 4 in primary school up to last year in the secondary school and promotion to the next grade, or year, is usually dependent on the result of these examinations.

The Department of Curriculum at the Ministry of Education defines the organization of the curriculum and the courses of study for the three level of school students in Bahrain. There is a National Curriculums for each subject and all schools follow the same syllabus during the school year. Schools throughout Bahrain follows the same yearly schedule. The school year (for students) begins on 1st October continue until the end of June and is divided into two terms separated by one vacation (spring vacation). Schools are in session five days a week, Saturday through to Wednesday. The daily

schedule at all three school levels consists of six to seven classes. Each class period is 45-50 minutes in length and classes are separated by a 5-minute recess. Generally the school day in the three school levels starts at 7:20 in the morning and finish at 1:45 in the afternoon.

The subjects at all school levels are taught by specialist teachers. The passing of the early 1980s policy of the Ministry of Education, introduced classroom teacher in the primary school system. Today, all subjects in primary school are taught by classroom teachers except physical education which is taught by the specialist PE teacher.

1.2.3- PHYSICAL EDUCATION IN PRIMARY SCHOOL

The physical education programme in all government schools is under the central control of the Department of Physical Education (DPE), which is under the leadership of the Ministry of Education. Physical education is a compulsory subject in the primary school. It is taught three times per week in the first, second and third years of primary school and two times per week in the fourth, fifth and sixth years. Individual class periods are 45 minutes in length for the primary school (see Appendix 1). In addition there is a special sports period conducted each school day following regular class work. This period allows for maximum participation by a large number of students.

There is a National Curriculum for physical education and all PE teachers in primary school follow this curriculum during the working day. In the lower primary PE programme, physical education is in the form of structured play and games, developing basic motor skills through movement education activities such as running, skipping, jumping, throwing, kicking and catching. These skills are to be taught to prepare the student for the next level of physical education. In the upper primary programme, sports and games of various kinds such as football, basketball, handball, volleyball, and athletics are introduced. A breakdown of the various activities is presented in Appendix 2.

The subject physical education in primary school is credit earning. Although the grade is included in the student's overall average, some teachers do not assess the students honestly. In fact the grade in physical education is a passing mark as a prerequisite for promotion to another level. Therefore, there is no fail in physical education in the primary school.

The physical education facilities in the primary school are generally adequate for class work. Most of the schools have a hall (gymnasium) for teaching the physical education, which usually includes a volleyball court, basketball court, and badminton court. All the schools have good outdoor playgrounds (e.g. volleyball court, basketball court, handball court). All schools in Bahrain do not have a swimming pool.

The above picture may not only help an awareness of the status of physical education in the primary school, but may also explain how the general status of PE is adequate for the teacher to teach more effectively. In fact all these facilities which are available in the school can help the PE teacher to use allocated time in a very effective way

1.2.4- THE STATUS OF PRIMARY PE TEACHER

Teachers obviously have a central role to play in the success physical education lessons. Physical education in primary schools in Bahrain are taught by the specialist PE teachers. The PE teachers in primary school today have different types of qualification. Most primary teachers are qualified and they hold either a Bachelor Degree in Physical Education (B.PE.) or Diploma Degree in Physical Education (D.PE.). There are a few only secondary school graduates (SSG). Most of the male PE teachers are Bahraini. There are quite few Egyptian teachers. The shortage of qualified female PE teachers in primary schools led the DPE at the Ministry of Education to the importation of PE teachers from Egypt. The majority of the Bahraini PE teachers who hold B.PE., received their qualification from the University of Bahrain. The remainder received their qualification either from Egypt or Iraq. A type of qualification and the nationalities of PE teachers at primary school in Bahrain are presented in Appendix 3.

The PE teachers in primary schools in Bahrain usually teach from 20 to 24 lessons per week, with a class size of anywhere from 30 to 45 students. Within the teaching function are tasks such as attendance taking, record keeping for the purpose of grading, fitness testing, equipment supervision, as well as the instructional functions. In addition PE teachers should plan all their lessons. They are often required to supervise the hall (sport hall) during working day. They are also required to supervise the daily competition between the classes which are organized by each school. They often have to perform other administrative functions.

Anyone who reads through these many different types of teacher qualifications may ask one question "Are there any differences in the level of active learning time for students in PE lessons taught by PE teachers with different qualifications?". It is important therefore to consider how students spend their time in physical education lessons that taught by teachers with different qualifications. Teachers are the key in increases the amount of learning time in a lesson. Not only will they decide on the objective to be achieved but they should also organize the learning experiences in the most efficient way in an attempt to increase academic learning time for every students in the class.

1.3- STATEMENT OF THE PROBLEM

During the past fifteen years a number of researchers in physical education have completed large descriptive studies that include observation of how students spend their time in the PE lesson. The results appear to be fairly consistent from place to place. It is clear that student spend more time in management, transition, and waiting than they do engaged in the subject matter. One of the most significant finding from these descriptive studies using the ALT-PE systematic observation was that the more time students spend appropriately practising a task, the greater the learning of the task. Therefore, students of effective teachers consistently spent more of their lesson time in practising appropriate motor tasks.

Considering the importance of this relationship between time and learning, it is surprising that such measurements of how time is spent in physical education lessons by using ALT-PE instrument have not been used in any educational setting in the State of Bahrain. This is because the Arab countries have only recently become interested in the systematic study of teaching through the observational analysis of teacher and student behaviour.

At present, the problem is that there is no much evidence of how time is spent in primary physical education lessons in Bahrain. Also there is no much data on the amount of time-on-task that students are involved with the subject matter (ALT-PE), and, of course no much data on how much time is

spent by the student practising motor inappropriate tasks, waiting in line, waiting for a turn, listening to the teacher, transition from one place to another, and managing the equipment. However, systematic observation appeared to offer an accurate evidence of how time is spent in physical education lesson. The researcher assumes that physical education lessons in the primary school are not arranged in such a way that the students spend as much time as possible in activities that directly contribute to learning. In addition, the actual amount of practice time that students get in most primary lessons is less than optimal.

The investigation of this area - academic learning time in physical education- can serve a diagnostic purpose to see the relationships between what teachers are doing and the amount of time students spend on learning specific movement tasks. The result of analysing ALT-PE may also show where remedial development is necessary in order to improve the quality of physical education teachers in the State of Bahrain. Further, the result of this study can be used as a personal evaluation of effective teaching and of the suitability of the organization strategies for the lesson. Above all, this study seeks to contribute to research in teaching education in the State of Bahrain through using the ALT-PE systematic observation instrument which could be used to provide a descriptive of teacher and student behaviours in the physical education lesson.

1.4- THE PURPOSE OF THE STUDY

This study was devised in an attempt to acquire more data about how time is spent in physical education lessons at primary school in the State of Bahrain. There are little evidence about the amount of ALT-PE in primary schools and how students spend their time during physical education lessons. This study will attempt to provide insight into some of this area. The purpose of this study, therefore, was to investigate how primary school students spend their time in PE lesson in the State of Bahrain. A secondary purpose was to determine whether there were any different between the ALT-PE scores for teacher gender, teacher qualification, and subject matter being taught. The investigation addressed three central questions:

1- Are there significant differences in each category of ALT-PE for students in physical education lessons taught by male teachers against those taught by female teachers?

2- Are there significant differences in ALT-PE for students in physical education lessons taught by BPE teachers versus those taught by DPE teachers?

3- Are there significant differences between ALT-PE scores for individual and team sports?

The result of this study will provide the authorities and teachers in the State of Bahrain with a more comprehensive understanding of the ALT-PE

concept. The study will also open up new avenues of inquiry for how time is spent in the PE lesson in the State of Bahrain.

CHAPTER - 2 -

REVIEW OF THE LITERATURE

- 2.1- Introduction
- 2.2- Overview of Systematic Observation
- 2.3- Academic Learning Time in Physical Education (ALT-PE)
- 2.4- Limitations of ALT-PE Instrument
- 2.5- Components of PE Lesson
- 2.6- Related Studies
 - 2.6.1- How Time is Spend in PE Lesson
 - 2.6.2- Relationships between ALT and Learner Outcome
 - 2.6.3- Relationships between ALT and Achievement

2.1- INTRODUCTION

During the past fifteen years much attention has been given to use of student learning time as a variable in teaching research. Learning time or engaged time, a proximate measure of student involvement with subject matter, has been the focus of many studies, theses, and dissertations in physical education, particularly in the United States and has helped explain some of the complexities of teaching and learning in the gymnasium. In reviewing the history of learning time as an educational variable, it became evident that engaged time simply emerged as a refinement of instructional time. The phrase Instructional time has been used to refer to the number of days in the school year, number of hours in the school day, minutes of time scheduled for instruction, and amount of time a student is engaged in learning (ALT). The essence of time research is observing, sorting, and categorizing teacher and student activities to determine which teacher behaviours are related to desired student behaviours, and in the end to student achievement.

According to Doyle (1978) a key concept of the model of time and learning is that the influence of teaching on student learning is indirect: teacher behaviour affects student's behaviours, and student behaviour (what the student does during lesson time) is directly related to student achievement. If the student is unable or unwilling to behave as directed, or if he follows instructions that are unrelated to curricular goals, little measurable learning will occur. Thus, by observing how the student behaves or how he/she

spends his/her lesson time, it is possible to make judgements about the teacher and teaching effectiveness (Siedentop, 1983). In other words, in order to assess teacher effectiveness, it is necessary to measure what actually occurs during the lesson(s).

2.2- OVERVIEW OF SYSTEMATIC OBSERVATION

Systematic, or direct, observation has enjoyed considerable popularity in such areas as anthropology, social psychology, and educational psychology (van der Mars, 1989). However, not until the early 1960s did systematic observation become an important investigative procedure in the study of classroom teaching; and it was not until 13 years later, in the Second Handbook of Research on Teaching (Travers, 1973), a whole chapter was devoted to the use of systematic direct observation in the study of teaching. Since then, systematic observation has played an important role in the development of teaching behaviour research. It is safe to say that systematic observation, even with its limitation, has indeed played a major role in finding at least of the answer regarding good teaching and has contributed to the development of effective teaching. The major systems developed during the past fifteen years have been brought together in a book by Darst et al. (1989) entitled *Analysing Physical Education and Sport Instruction*. The result from the studies which used these systematic observations provided a great deal of information about the teacher and student behaviour. Teachers were observed in naturalistic settings and the amount of time devoted to such functions

(offering information, providing feedback) were recorded. Correspondingly, student behaviours were also observed and data obtained to see whether they spent their time waiting, engaged in on-task or off-task activity or involved in different stages of game playing. These kinds of studies using observation systems were undertaken in the belief that such systems could be used to :

- describe classroom practices;
- modify teacher behaviour;
- provide a tool for the analysis of teaching;
- give feedback about one's own teaching;
- train student teachers;
- discriminate between patterns of teaching;
- determine the relationship between classroom

behaviours and student growth; and

- help project further teaching patterns.

(Batchelder & Cheffers 1976)

At Ohio State University in the United States, under the leadership of Dr. Siedentop, several systematic observation systems have been developed for studying and modifying teacher and student behaviour. Perhaps the best known is the Academic Learning Time in Physical Education (ALT-PE) system.

2.3- ACADEMIC LEARNING TIME IN PHYSICAL EDUCATION (ALT-PE)

Adhering to a long tradition of observational research in classroom settings, physical education began to focus on the development and standardization of a systematic observation instrument for recording and analysing teacher and student behaviour in the gymnasium (Locke, 1977). One contribution was the modification of the observation system used in the Beginning Teacher Education Study (BTES) for use in physical education. Siedentop, Birdwell, and Metzler (1979) adopted the ALT model for the classroom and presented a series of papers explaining how the ALT-PE concept could be used as a process measure in physical education. Since the original ALT-PE instrument was developed, the model has been applied in physical education research in the United States, Canada, New Zealand, Australia, and Belgium (Tousignant, Brunelle, Pieron & Dhillon, 1983). The original ALT-PE coding instrument was revised and simplified by Siedentop, Tousignant, and Parker (1982).

Although other observation systems have been designed to describe how students spend their time in physical education (e.g., Laubach, 1975), the ALT-PE observation system has been used more often. The main purpose of the ALT-PE instrument is to measure the portion of time in a physical education lesson that a student is involved in motor activity at an appropriate success rate. Thus, ALT-PE refers to the amount of time students spend

working directly on meaningful learning tasks (those at appropriate levels of difficulty or challenge) at a high success rate (Parker, 1989). ALT-PE is determined as a percentage of observed intervals and as the number of minutes accrued during the lessons. It is estimated by categorizing activities that students commonly do in physical education lessons (i.e. participating in games, practising skills, listening to a teacher's explanation/demonstration, waiting turns) and then accumulating the time reported as ALT only from those which directly fit the definition above.

The concept of ALT-PE provides a simple, convenient criterion by which to judge teaching effectiveness in physical education. This means that ALT-PE is a useful indirect measure of teacher effectiveness. Siedentop (1983) suggested that the ALT-PE can be used to describe and evaluate the effectiveness of different teachers in physical education. Mcleish (1985) emphasized this suggestion and claimed that,

"Effective teaching means structuring the lesson so as to maximize the amount of time in direct practice by each individual at a level which ensures a continuing development of skill....it was our major conclusion that the ALT-PE system supplies the missing element, or indeed major component, needed to evaluate effective teaching in physical education. Tim-on-task, academic learning time, opportunities to learn - call it what you will, and measure it if you can - this is the vital component of an effective lesson". (pp.84-85)

Thus, measuring and analysing individual student behaviour by using the ALT-PE system is one of the most important ways to determine teacher

effectiveness in physical education. The most significant finding from the studies taking repeated measure across time was that the student of the more effective teachers consistently spent more of their lessons time practising motor skills. Thus, effective teachers allocate more of the available time to student engagement of specific and appropriate motor activities.

The ALT-PE provides the researcher with a systematic approach for measuring and analysing how teachers and student interaction in the gym, and how they spent their lesson time. In fact, until the development and application of this system in the 1970, Paese (1982) reported that,

"There was no evidence of what students were learning or if learning was actually taking place. Also there was no data on how students were spending their time during physical education lesson".

Most of ALT-PE system strength lay in recording of live teaching situations. This means that the researcher or the observer go out onto the playfield or into the gym to watch and observe what happens in real lessons. Thus, teachers are observed in a naturalistic setting and the amount of time devoted to such functions as observing, describing and providing feedback are recorded.

ALT-PE was first used by Metzler's (1979) to describe how elementary and secondary students spend their lesson time in physical education. A number of research studies have used ALT-PE Version I (Godbout, Brunelle & Tousignant, 1983; Placek, Silverman, Dodds, & Rife, 1982; Silverman,

Dodds, Placek, Shute, & Rife, 1982), while many other researchers are beginning to use Version II (Grant, Ballard, & Glynn, 1989; Placek & Randall, 1986; Randall & Imwold, 1989). There is no a big difference between Versions I and II. The major change is that Version II has been done partly to collect the same information as in Version I but with less time spent making decisions during each observation interval. The clear description of ALT-PE Version II will be discussed in more detail later. In fact, all these studies and the purely descriptive studies that used ALT-PE Version I or II have told us a great deal about what is happening in physical education lessons in many different countries around the world.

2.4- LIMITATIONS OF ALT-PE INSTRUMENT

A review of ALT-PE systematic observation instrument revealed that this instrument has several limitations:

- ALT-PE is not sensitive to differences among motor performances in various physical education activities. A unit of ALT-PE can refer to anything from walking on a balance beam and doing aerobic dance. Further, even within the game setting, ALT-PE does not delineate what players are doing - whether they are playing the ball or playing off the ball waiting for a play to occur (Parker, 1989).

- ALT-PE provides a picture of only a small portion of what happens in physical education (Anderson, 1983).

- ALT-PE does not measure the congruence between learner needs and content goal (Parker, 1989).

- ALT-PE is not sensitive to the goals of a given lesson.

- ALT-PE does not indicate the quality of the practice. success rate may not be a discriminating enough variable.

- ALT-PE is designed to observe up to three students in a physical education lesson and therefore can not measure the amount of ALT gathered by the entire lesson (Metzler, 1983).

- ALT-PE is intended to observe student classroom behaviour. It focuses on teacher behaviour only indirectly, that is, it measure teacher process efficiency as manifested through student behaviour in an observed lesson (Metzler, 1983).

2.5- COMPONENTS OF PE LESSON TIME

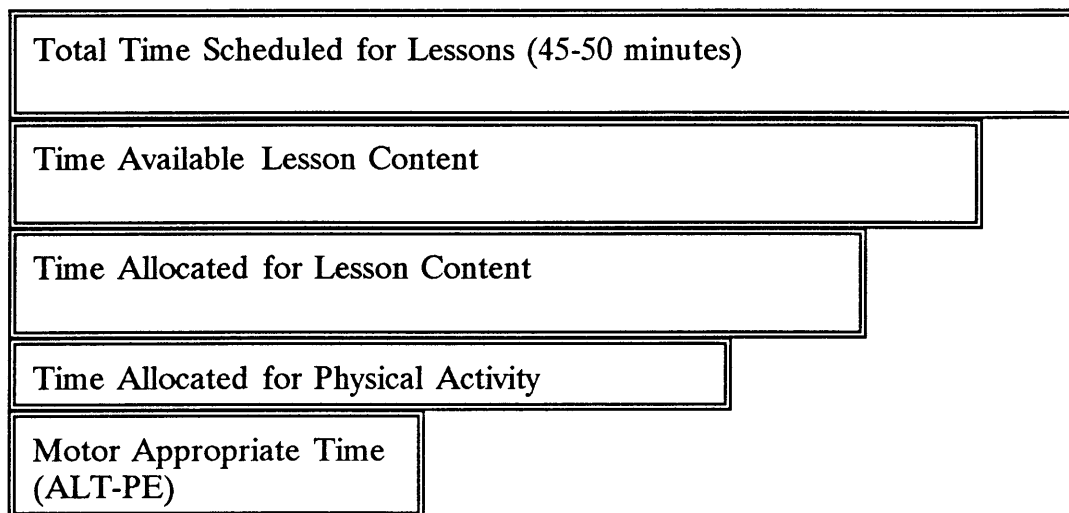
Lesson time in physical education can be classified in several ways. One such way is shown in Figure 1 and explained below.

Total Time Scheduled for Lessons is determined by the DPE at the Ministry of Education or by the education system. Some of the scheduled time is used in getting to and from the place of the venue and for student to get changed before and after the lesson (the total time schedule for lesson is 45-50 minutes in primary school).

Time Available Lesson Content is the amount of total lesson time that

the students are in the presence of the teacher and either waiting to be or are involved in some aspect of the lesson. This time is used for non-instructional activities (e.g. taking attendance, organizing equipment, stopping the class for discipline reasons) and instructional activities (e.g. giving information to the class, students playing a game).

FIGURE 1. Component of PE lesson Time



Time Allocated for Lesson Content is that portion of the lesson time actually allocated by the teacher for student involvement in subject matter. This includes all instructions (i.e. verbal and demonstrations) and organized physical activity.

Time Allocated for Physical Activity is that portion of time the teacher allocates for the student to actively participate in the learning tasks. However, the opportunity to participate does not imply all students are in motor-on-task activity. For example some students may be waiting for a turn or assisting another to perform a task.

Motor Appropriate Time (ALT-PE) is the amount of lesson time a student is actively performing the learning tasks or practising the prescribed motor skills. This does not include time when the student is indirectly involved (e.g. not part of a rally in volleyball, fielding in game but not in class proximity to the action, spotting for another student, waiting for the group to have their turn).

2.6- RELATED STUDIES

2.6.1- HOW TIME IS SPENT IN PE LESSON

Most teachers think they know how students spend their time in the PE lesson. Usually this is based on a global impression of the activity of the whole class. However, they may not be completely accurate and it would be more sensible to concentrate on one or a few students over extended periods of time or record accurately the behaviour of all class members at a particular moment. This would result in a more sensitive measure.

Any form of motor activity is not acceptable. It must be related to the objectives of the lesson and quality practice should be aimed for. Activity which does not meet these elements is likely to be irrelevant. If measures are taken in the ways outlined above then it is likely that the amount of purposeless activity will be greatly reduced. This then raises questions about what students are doing in the remainder of the lesson under the management strategies. Obviously lesson in which students spend less time in organization

and instructional situations will give them more opportunities to practice their motor skills.

A review of related studies related to the present study revealed a lack of studies using ALT-PE instrument in the Arab countries. There have been very few studies on how time is spent in primary physical education lessons previously in the Bahrain Society. However, since the original ALT-PE instrument was developed, this instrument has been applied in physical education research in many different countries around the world such as the United States, Canada, Australia, New Zealand, and Belgium.

Beginning with Metzler's (1979) initial foray into public school gymnastics in Ohio city to determine whether the original ALT instrument developed for use in classroom research could be used in physical education. The findings provided by descriptive analysis show certain regularities. In general, the amount of successful movement time engaged with appropriate instruction tasks provided for most students is far less than commonly imagined, and much of the ALT produced in physical education is cognitive rather than motor responding. Metzler's found the percent of total class time the students spent engaged in physical education content at an appropriate level of difficulty ranged from low of 10% to a high of 20%. He pointed out that the structure inherent in the observation system captures this situation in a characteristic funnel effect, that is successively decreasing amounts of time on Content-PE, Learner Engagement, and Successful Engagement leads to

figures for Successful Motor Engagement, which are a small proportion of available class time.

Another study by Shute, Dodds, Placek, Rife, and Silverman (1982) examined the ALT-PE in elementary school movement education. The investigation employed the ALT-PE observation instrument as a descriptive-analytic product for collecting data describing time-on-task learning behaviour of elementary schools. They reported that elementary school students in a movement education class were engaged in management and partial or total game-play 25% of the allocated time. Students lost much engaged time chasing the ball. Nonspecial-needs children were engaged 45% of the time and had an ALT-PE time of 13% compared to 35% and 6% for the special-needs children. They also found that boys and girls had similar engagement and ALT time, as did children of different skill levels.

The same research team Placek, Silverman, Shute, Dodds, and Rife (1982) conducted another study at a primary school. They examined the ALT-PE in a traditional primary physical education setting. They found that the teacher spent only 15% of the total lesson time in the Content-General category, most of this for changing activities or regrouping. Students spent more than a third of their time in Game play situations, a bit less than a third in Scrimmages (teacher-directed practice in a partial game context specific feedback related to psychomotor or strategic skills), and about an eighth of the time in Skill Practice. They also found that all students (male and female)

were involved for 19-28% of the lesson time (Learner Move-Engaged) in doing activities directly related to learning about physical education as a unique and specialized subject matter which were quite low. In conclusion, they suggested that teacher organization of students and equipment might affect learning opportunities (ALT-PE) more than any other single teacher-related variable. In addition, content variation in instructional units might differentially affected student time-on-task. Furthermore, changing particular teacher behaviours might cause subsequent changes in student ALT or ALT-PE patterns.

Godbout, Brunelle, and Tousignant (1983) conducted a study to determine how much academic learning time was experienced by elementary and secondary school students during a regular physical education classes. All 61 classes were observed according to the ALT-PE observational instrument. They found that the ALT-PE (the percentage of class time during which students were effectively and successfully engaged into physical education content activities) mean result were 31.3% and 36.5% respectively for the elementary and secondary school level. Students spent from 19% to 34% of the class period, on average, in other than P.E. content activities. They also found that secondary students spent as much of the class period time in non-engaged activities as in engaged activities (40%), while at the elementary level they found that students were more often engaged than non-engaged. Godbout et al. findings indicated that when students were engaged, they spent twice as much time in motor responding as in cognitive engagement. In

conclusion, they pointed out that;

"The determination of the percentage of ALT-PE offered to students in elementary and secondary school physical education class proved to be a worthwhile endeavour. On the average, the students were found to experience ALT during approximately one third of the class period....ALT-PE data might be influenced by factors such as the nature of the activity taught, and others."

(p.18)

Dodds (1983) studied a varsity lacrosse coach and 17 female students in a class composed of college physical education majors. Students spent 85% of class time in physical education content (46% in skill practice and 37% in knowledge-related activity), and 55% of the allocated time engaged in cognitive (35%) and motor (16%) activities, of which 49% was ALT. Only 11% of class time was ALT-PE. Students spent much time in non-motor-activity such as waiting in line, waiting for a turn, and organizing equipment. Dodds findings indicated that when students were engaged, they spent more time in cognitive engagement than in motor responding.

Far less, ALT was found in physical education than had previously been imagined and much of it was cognitive rather than psychomotor in nature. Siedentop, Mand, and Taggart (1986) summarized six studies on academic learning time done between 1978 and 1983. They found that 6-22% of class time was spent on management and transition activities, 15-25% in receiving information, and 22-32% waiting to participate or take a turn. Students were engaged in motor activity only 21-30% of the lesson time.

Macleish's (1985) analysis of 104 lessons suggested that appropriate practice of motor skills (ALT-PE) averaged out at 25%. Similar proportions were also found by Pieron and Haan (1980) in the observation of 300 students in school, and by Dodds, Rife, and Metzler (1982) in a review of nine studies in a range of schools with a variety of activities. One study which produced higher percentages of ALT-PE was conducted by Vasrstala, Pankku, and Telama (1983) in Finland and reported an average of 48% for time-on-task or ALT-PE.

Overall, there is a surprisingly low motor involvement and it is relevant to ask what the students are doing during the remainder of the lesson which involves the majority of the time. There will obviously be occasions when students are listening to explanation and watching demonstrations of the skill to be learned and these are essential elements of the learning process. However, there will also be other time such as waiting for a teacher to give instructions, waiting to take part in an activity or off-task behaviour which could be regarded as "unproductive time".

One study conducted by Halliwell (1986) in Australian society reveals the student activity time (ALT) in six primary school physical education lesson as measured by the ALT-PE instrument. The results, which are almost identical to the findings of similar studies conducted in different parts of the world, show a range of ALP-PE from 48% of total lesson time to 13% of lesson time. This represents an average of 29%. What this means is that the

children would actually be getting only about nine minutes of activity time in a thirty-minute lesson!

A variety of studies have made comparisons across teacher student subgroups. A smaller number of studies have examined differences in settings. Studies comparing teachers most often have examined the differences in teaching behaviour between specialists and nonspecialists and between experienced and inexperienced. One study comparing ALT-PE of elementary students in physical education classes taught by specialists with those taught by classroom teachers conducted by Placek and Randall (1986). Physical education classes of 7 specialists and 13 nonspecialists (classroom teachers) observed using the revised ALT-PE instrument. Placek and Randall found no significant difference between physical education specialists and classroom teachers in the ALT-PE of elementary school students. They reported that the student of specialists devoted about 30.8% of their time to general content, or nonphysical education content, whereas nonspecialists students spent 26.5% of their time in same category. Regarding the learner involvement category, they reported that students of specialists were more engaged 27.5% of the time and not motor engaged 72.5%. The nonspecialists students were more engaged 32.5% of the time and not motor engaged 67.5%. In conclusion, Placek and Randall pointed out that,

"...the knowledge of subject matter and instructional strategies implied by possession of a physical education degree did not seem to ensure optimal ALT-PE in physical education. Teachers must be able to plan and effectively manage time to provide maximum

opportunity for individuals to respond in appropriately designed tasks."
(p.163)

In two studies involving collegiate basketball and lacrosse players Wuest, Mancini, Frye, and Murphy (1985), and Thomas, Mancini & Wuest (1984) found high-skilled students to have higher motor engagement and ALT-PE than their lower skilled students. Thomas et al. also found that males spent more time in game playing and had higher motor engagement and ALT-PE than females. In a similar secondary school basketball unit, Wuest et al. (1984) observed the same results. They also found that the male teacher spent more time in management and scrimmage play, while the female instructor spent more time on warm-ups, giving skill information, drills, and game play. Metcalf et al. (1986) conducted a similar study with elementary school physical education teachers, finding that high-skilled students had more ALT-PE than lower-skilled students.

In Taiwan, Chao (1987) conducted a descriptive study of student ALT-PE in physical education classes in Taipei City. The aim of the study was to learn how students spent their lesson time, with special regard to their motor engagement time. He collected a total of 28,800 intervals and reported that Taipei City students were not very active. Students were engaged less than one-third of the total observed time in motor activities (Gross ALT = 30.2%; Net = 27.2%). Students spent more than one-half (57.5%) of their time inactive, either waiting (22.6%), or listening to teachers (34.9%). They also spent a considerably large portion of lesson time (10.5%) in management

activities. Chao further reported that student ALT-PE in the sample were quite different from class to class for different subject matters. They also spread out across student gender, grade level, teacher gender, class size, facility used, and class segment.

ALT-PE, a proximate measure of student involvement with subject matter, has been the focus of many dissertations in physical education in the United States. Cessna (1986) conducted his research project for a Ph.D. degree in measuring ALT-PE. The main purpose of the investigation was to determine ALT-PE in relation to teacher performance level and student achievement ratings. Data collected during the spring term of the 1985-1986 academic year at eighteen schools in the State of Maryland. Fifty physical education teachers of both sexes participated in the study. Each teacher observed during two separate class sessions and the amount of ALT-PE recorded using the interval recording system. Findings revealed a significant correlation between the amount of ALT-PE and student achievement. This study led to the conclusion that, the greater the ALT-PE, the greater the student achievement.

In Britain, Underwood (1988) conducted a study which examined and analyzed students' behaviour in physical education lessons at secondary school. He recorded and analyzed students' behaviour by using videotape. The results did represent an accurate account of student behaviour in PE lessons and indicated a consistently high commitment to cognitive aspects which ranged

from 42% to 48%. Waiting and on-task behaviour each accounted for 14% but there was a much greater range for the later category (8% to 21%). Underwood reported that the motor component of the lessons averaged out below a quarter at 24%. Male students were involved in motor appropriate behaviour (ALT-PE) for 28% of the lesson time whereas the female students were only involved for 19% of the lesson time. Game lessons accounted for much greater range of ALT-PE than gymnastic lessons. There were a few recording for off-task behaviour and none for motor inappropriate and supporting categories. In conclusion, He pointed out that,

"In spite of all the reservations, it was felt that ALT-PE data did give a more valid account of student behaviour than previous attempt described under the heading "engaged time". The system did include thousands of recording of actual student behaviour.....It was certainly felt to be more appropriate to use this method of measuring student involvement in the future". (p.62)

In a small descriptive study of PE lesson students in Bahrain Kamel (1985) found that 36% of class time was spent in management activities, 16% in receiving information and 23 % in waiting to participate. Teachers devoted 25% of lesson time to motor-on-task activities.

In New Zealand, Grant, Ball, and Glyum (1989) provided data on student behaviour over a series of related physical education lessons. They observed 8 teachers while they taught classes in their school gymnasium. They used a modified version of the ALT-PE observation system to collect the data. The findings indicated that teachers allocated less than one half of the

available lesson time for student participation with learning tasks. Across all classes, students spent less than 20% in motor-on-task behaviour (ALT-PE) with a range of 18% (11.2-29.2%). Grant et al. found that cognitive behaviour was the most dominant category in all classes and recorded as accruing for over one quarter (28%) of the total lesson time (e.g. receiving instructions, watching a demonstration). Students spent one tenth (9%) of the time in organization behaviour (e.g. putting up a net). To summarise the findings, they pointed out that,

"The present study support the view that observing both the quality and quantity of student motor-on-task behaviour across time provides worthwhile data on student learning behaviour...Many of PE teachers were not aware that the students spent only limited amounts of time directly engaged with motor skills."

2.6.2- RELATIONSHIPS BETWEEN ALT AND LEARNING OUTCOME

It is clear from the correlational and descriptive research that ALT is not necessarily a predictor of student achievement (Metzler, 1989). It is, however, an important process variable that contributes to achievement (Siedentop 1983).

A review of literature on the relationship between time and learning outcome or achievement, reveals that there were many studies reported

moderate to study correlations between ALT-PE and student achievement. Graham (1983) summarized five studies (Graham, Soars, & Harrington; Yerg; Pieron; Uoung & Metzler; Kellor) using experimental teaching units to teach psychomotor skills to students of various age levels. He found in all five studies that the amount of time students practised the criterion task correlated with student learning. Metzler (1989) reviewed 11 studies regarding the relationship between ALT and student achievement. He found that all 11 studies illustrate this relationship. Dodds et al. (1982), in a paper which summarized the results of 9 ALT-PE studies, stated that,

"Because of the expressed motor performance focus of physical education, ALT-PE is now considered the best evidence of student opportunity to learn in physical education."

Silverman, Derillier, and Ramirez (1991) studied the validity of ALT-PE system (Version II). The main purpose was to determine whether ALT-PE is valid as a process measure of student achievement. They found that both total motor appropriate and practice-motor appropriate intervals were related to student achievement. However, negative relationships were found for transition on-task and scrimmage or routine-waiting. In conclusion, they stated that,

"...the validity of the ALT-PE system as a process measure of achievement can be partially substantiated." (p.324)

Physical education lessons appear to be characterized by much longer periods of non-motor engagement than motor engagement. The evidence cited

above appears to suggest that an increase in the amount of time students spend in motor appropriate behaviour could show an increased level of learning.

2.6.3- RELATIONSHIPS BETWEEN ALT AND EFFECTIVENESS

The most important result relating to the nature of time was that students who learned more, had teachers who provided them with more time to practice the criterion skill. Students who learned less, spent more time waiting, listening, managing and organizing than their counter parts. Perhaps the key point is practising "the criterion skill". It is essential that students do practice the specific task set by the teacher, which is consistent with the objectives of the lesson. A study by Phillips and Carlisle (1983) used judges ratings of teacher effectiveness of the instructional process and reported student ALT was three time longer in classes taught by "more effective" than "less effective" student teachers. The general trend of this study indicated that the most effective teachers used more of their teaching time to present materials and provide performance feedback. They also appeared to manage the time more efficiently and as a result, students spent less time in management activities. A different grouping of teachers by Mancini et al. (1983) made a comparison of low and high "burn-out" physical education teachers using ALT-PE methodology and found that students in low burn-out teachers' lessons spent 48% of their time in the motor appropriate category as opposed to 25.7% for the high burn-out group. Naturally, this reflected in

longer periods of time students spent in the interim, off-task and waiting categories of high burn-out teachers. Thus the enthusiasm and efficiency of the teacher is reflected in the behaviour of the students and will inevitably influence learning opportunities.

The evidence cited above appears to suggest that providing students with the opportunity to learn and keeping them involved in appropriate learning behaviour (ALT-PE) is an important characteristic of teaching effectiveness in physical education. Therefore, an effective teacher should devote a large percentage of lesson time to content, spend minimal time on management tasks, provide students with optimal practice time, and ensure high rates of on-task behaviour.

From the related studies reviewed above, the researcher can conclude that students only spend a small proportion of time in motor activities related to motor skill achievement. In other words, ALT-PE in physical education classes is typically quite low. Students in PE lesson spend somewhere in the vicinity of 28% of their lesson time waiting for something to happen (waiting in line, waiting for turn, waiting for equipment and so on). They spend up to 20% of their time involved in managerial tasks, such as choosing teams, moving from place to place or being organized for practice. They spend around 20% of their lesson time receiving information from the teacher about such things as how to play the next game, and only about 25% of the time in motor-on-task (ALT-PE).

CHAPTER - 3 -

THE METHODOLOGY OF THE STUDY

3.1- Choice of Data Collection Instrument

3.2- Preliminary Procedures

3.3- Pilot Observation

3.4- Subject and Setting

3.5- Observation Instrument

3.6- Using Audiocassette Recorder

3.7- Data Collection

3.8- Statistical Analyses

3.1- CHOICE OF DATA COLLECTING INSTRUMENT

The reason for the ALT-PE interval recording instrument used in the study emanated from the view made in the previous chapter, which identified methodological priorities in research in physical education. Perhaps the most important point which influenced the design of this investigation was that the study should be conducted in a naturalistic setting. This obviously meant observing the teaching of physical education as it actually happened. With the development of several observation systems it was therefore possible to make an accurate record of what actually happens in the gymnasium and how time is actually spent in the physical education lesson. After considering the several observation systems which can be used for studying real-world events in the classroom or gymnasium, it was decided to use the ALT-PE Version II interval recording instrument. The ALT-PE system was chosen because of the large ALT-PE data base that could be utilized for comparative purposes.

ALT-PE Version II was developed by Siedentop, Tousignant, and Parker (1982). The purpose of the ALT-PE instrument is to measure the portion of time in a physical education lesson that a student is involved in motor activity at an appropriate success rate. The instrument takes into account all the time that is allocated to the physical education activity in the actual setting (gymnasium, playfield, or swimming pool).

Siedentop et al. (1982) refers to the instrument as being conceptualized at two levels. The first level of the system requires a decision on the context of the setting under observation. This level decision requires scanning the whole class to determine the principal ongoing type of activity (e.g. management, game, etc.). The second level involves observation of the individual learner's involvement. This level decision narrows the observational focus to the behaviour of a single student. Within the context level, decisions are first made among the categories of general content (generic incidents expected in any class, regardless of subject matter), subject matter knowledge (cognitive information the student receive about physical education), and subject matter motor (movement-oriented student activities). Once a subcategory within one of these major groupings is coded for tier 1, a second tier decision is made at the learner involvement level between the not motor engaged or motor engaged categories. Figure 2 provides an overview of the ALT-PE (Version 2) coding system categories and subcategories.

FIGURE 2. ALT-PE coding Categories and Subcategories

CONTEXT LEVEL	LEARNER INVOLVEMENT LEVEL
<i>General Content:</i>	<i>Not Motor Engaged:</i>
Transition	Interim
Management	Waiting
Break	Off Task
Warm Up	On Task
	Cognitive
<i>Subject Matter Knowledge:</i>	
Technique	<i>Motor Engaged:</i>
Strategy	Motor Appropriate
Rules	Motor Inappropriate
Social Behaviour	Supporting
Background	
<i>Subject Matter Motor:</i>	
Skill Practice	
Scrimmage/Routine	
Game	
Fitness	

A definition of each category and subcategory is to be found in Appendix 4.

3.2- PRELIMINARY PROCEDURES

Having established the procedures for the investigation, the researcher collected all the information regarding the number of primary schools in Bahrain, number of male and female PE teachers in primary schools, and types of teacher qualification (see Appendix 3). Prior to the investigation, the researcher met with the Chairperson of the DPE at the Ministry of Education to discuss with her the purpose of the study and the procedures for the investigation. Since the researcher had been employed at the University of Bahrain, the Chairperson of the DPE asked for a formal request from the university. After the researcher had provided the request, approval for the study was issued to conduct an investigation in both male and female primary schools in Bahrain. After that the DPE informed primary PE teachers about the purpose of the study and the researcher's interests. Specifically, they were told that the researcher was interested in learning about how students spend their time in physical education lessons. Also, they were informed that some PE lessons would be recorded on videotape. An approval for the study, which was issued by the DPE at the Ministry of Education, is to be found in Appendix 5.

3.3- PILOT OBSERVATION

Having established the procedures for using the ALT-PE (Version II) interval recording instrument, the researcher conducted a small pilot study in two schools. The main purpose of the pilot study was to investigate whether the methodology of ALT-PE instrument and the coding procedures that had been adopted would give a valid and accurate indication of how students spent their time during physical education lesson. Four physical education teachers of both sexes participated in the pilot study. Each teacher was observed teaching two lessons. A total of eight lessons were observed for an average duration of 25 minutes. Three target students in each lesson were chosen for observation by random selection. Data for all teachers were coded for a total of 1000 intervals.

The findings revealed that there were slight differences between the student of male and female teachers. The time devoted to motor content was quite consisted between the two groups (from 50-55%). Motor engaged time at an appropriate level of difficulty (ALT-PE score) varied from 21 to 28%, whereas the students spent a great percentage of the lesson periods waiting or interim (35 to 40%).

The results of the pilot study shown that ALT-PE data did give a more valid account of students behaviour. The context and learner involvement categories of ALT-PE instrument was felt to give a reasonable accurate

indication of how time is spent in physical education lesson. Although some difficulties were felt over the distinction between on-task and off-task behaviours, and motor appropriate and motor inappropriate behaviours, the instrument reflect what was happening in physical education lessons. In addition, the recording procedures of ALT-PE was found reliable and relatively easy to use. As far as possible, the pilot study reflected the observation technique that were to be used in the main study. From the data of the pilot observation, the ALT-PE scores might be influenced by factors such as the nature of the activity. This means that not all the ALT-PE scores are the same for all activities. As a result, it was felt that the pilot study had achieved its main purposes.

3.4- SUBJECTS AND SETTING

Teachers: Following the above procedure, an attempt was made to make as accurate a record as possible of how time is spent in physical education lessons in primary schools. Subject in this study were male and female PE teachers from all cities in the State of Bahrain. Forty PE teachers, ranging in age from 24 to 40 years, were involved in the study. All of them were specialist primary PE teachers. They were 20 (50%) male PE teachers and 20 (50%) female PE teachers. Of these 40 teachers, 20 were B.PE. teachers and 20 D.PE. teachers. A breakdown of the subjects (teachers) by gender and teacher qualification is shown in Table 1.

TABLE 1. Total subjects (teachers) by gender and teacher qualification

Teacher Gender	B.PE	D.PE	Total
Male	10	10	20(50%)
Female	10	10	20(50%)
Total	20	20	40

Key: B.PE= Bachelor in Physical Education; D.PE= Diploma in Physical Education.

The subjects for the study (40 teachers) were randomly selected from a total (N= 198) of PE teachers in primary schools in Bahrain. Another 15 teacher substitutes (3 males, 12 females) were randomly selected. For every teacher selected, proper authorization to proceed was obtained from the DPE. All teachers who selected to participate in the study then met with the researcher during preparation periods. The teachers were given an explanation about the nature and the purpose of the study, and the sampling procedures which had been used. In addition, they were given a copy of the permission from the DPE to conduct this study at primary schools in Bahrain. In order to minimize the effects of the investigator's presence on observed behaviours, the subjects were not informed which of the specific target behaviours (management, waiting, practising...etc.) were being observed. Since it was not possible for a man to watch a PE lesson in most girl schools in Bahrain, the female teachers were asked if they would agreed to participate in the study.

In fact, most of the originally selected female teachers readily agreed to participate, but in nine instances, previously selected substitutes had to be used. On the other hand, since the researcher had prior good relationships with most male PE teachers and school administrations, all originally selected male subject immediately agreed to participate. All the teachers who participated in the study were observed teaching third, fourth, fifth, or sixth grade students.

Students: All participating students were in the third, fourth, fifth, and sixth grades (Years 3,4,5, and 6) at primary schools in Bahrain. They were male and female students. For each lesson the researcher selected three target students for observation (one high-, one medium-, and one low- skilled). In order to obtain the teacher's perceptions of the three students high, medium, and low skill levels, he/she was asked to list the names of six students (two high-, two medium-, and two low-skilled) for the lesson before the beginning of the observation procedure. From each of these three groups the researcher randomly selected one high-, one medium-, and one low-skilled students to be subjects for the study lesson. This procedure was followed for each of the 40 lessons. Sometime the researcher asked the teacher to list the six students, a day prior to an intended visit to the school, by the telephone. The teacher was not informed which students were chosen nor the specific behaviours or events being observed during the observation. The 40 separate lessons provided a sample of 120 students. A breakdown of the students targeted across different teacher qualification is shown in Table 2.

TABLE 2. The total of student targets in two different lessons

Lesson Taught by	Boy	Girl	Total
B.PE	30	30	60
D.PE	30	30	60
Total	60	60	120

The observations were conducted during October 1993 at primary schools in Bahrain. The researcher decided to observe a total of 40 lessons. All the lessons were taught in the natural setting of each school gymnasium. Most the observations were conducted during the first four lessons of the daily school schedule. Data were gathered through field observations by using the systematic observation instrument. The researcher observed from 3 to 4 lessons every day and the observation schedule began with female teachers.

3.5- OBSERVATION INSTRUMENT

The revised ALT-PE system developed by Siedentop, Tousignant, and Parker (1982) was used in the collection of data for this study. The ALT-PE (Version 2) coding system categories and recording sheet was translated from English into Arabic in order to reduce any difficulty arising from language problems during observation procedures. The complete ALT-PE categories and recording sheet in Arabic is shown in Appendix 6.

The ALT-PE observation system is an interval recording system by which an individual or group is observed for a specific length of time and a decision is made as to what behaviour category best represents the behaviour of the individual or group during that time (Parker, 1989). The typical interval length for the ALT-PE instrument is 12 seconds. The interval recording technique employed by ALT-PE is an observe/record. The first 6 seconds of the interval is used to observe and the second 6 seconds to record the observation on the coding or recording sheet, leading to the collection of five samples of behaviour during each minute.

Following the ALT-PE instrument, an attempt was made to make as accurate observation as possible of how students spent their time in the PE lesson. In each observation interval (6 sec. observe/ 6 sec. record), the observer was required to make two decisions. First, the content level of the class situation was determined (general content, subject matter knowledge, or subject matter motor), an indication of how the teacher had structured the lesson. Second, the learner involvement level of a single student was determined (motor engaged, not motor engaged), indicating what the observed student was doing within the class context. The decision system which was used during the investigation is summarized in **Figure 3** on step-by-step basis.

FIGURE 3. Decisions system step-by-step.

Step 1: Context level decision.

What is the context of the class? What is the class doing as a whole?

Choices:	<u>General Content</u>	<u>Knowledge</u>	<u>Motor</u>
	Transition	Technique	Skill Practice
	Management	Strategy	Scrimmage/Routine
	Break	Rules	Game
	Warm Up	Background	Fitness
		Social Behaviour	

Step 2: Learner involvement decision.

What is the nature of the individual learner's engagement? What is the individual student doing?

Choices:	<u>Not motor Engaged</u>	<u>Motor Engaged</u>
	Interim	Motor Appropriate
	Waiting	Motor Inappropriate
	Off Task	Supporting
	On Task	
	Cognitive	

The coding formality of this two-level decision system is straightforward. For each observation interval, the context was first noted by the observer and then the specific student behaviour was observed to determine the nature of his or her involvement. If a general content or subject matter knowledge category was chosen at the context level, the second-level decision was from categories in the not motor engaged group. If a subject matter motor category was chosen at the context level, the second-level decision used the entire learner involvement category system. Any observation sample in which motor appropriate was chosen in the second level decision became a unit of ALT-PE. An example of a completed recording sheet in English, similar to that suggested by Siedentop et al. (1982) which was used in the study, is set out in Appendix 7.

After making the appropriate decision in each interval, the observer had to write the appropriate symbol in the appropriate box for each observation interval. If adjacent intervals (across rows) had the same category, the observer had to write a dash (-) rather than repeating the symbol (see Appendix 7).

A coding sheet (English version) the same as that suggested by Siedentop et al. (1982) was used to collect ALT-PE data and is shown in Appendix 8. It contained space to identify the teacher, sex, qualification, date, school, activity, observer name, and time begin and end. Intervals were placed vertically on the sheet in rows of 20. The C and LI corresponded to the

Context Level and Learner Involvement Level, respectively, and designated a box for entering the appropriate code for each decision level. The categories were written at the bottom of the coding sheet with an appropriate symbol for each category.

In this study three target students were observed in sequence for an entire class period. The first row of intervals was assigned to Student 1, the second row to Student 2, the third row to Student 3, the fourth row to Student 1, and so forth. The actual coding was moved down columns before moving across rows. The first observe-record interval was focused on Student 1, the second on Student 2, the third on Student 3, the fourth on Student 1, and so on (see Appendix 7).

All the data for the study were collected by the researcher who was quite proficient in the use of the ALT-PE instrument. Prior to the beginning of the study, the researcher also practised using the revised ALT-PE observation system. Practising consisted of studying the defined categories and coding procedures, practising using the system in a variety of physical education settings for short periods, practising using the system in different schools in Bahrain and Manchester, practising the coding technique in direct observation, practising using the audiocassette recorder, practising analysis of the data, and observing complete lessons similar to those included in the study.

3.6- USING AUDIOCASSETTE RECORDER

To keep the observer in the proper order and pacing for each interval a pre-programmed audiocassette, with an earphone, was used to provide the observer with observe/record cues. The photograph of the audiocassette that was used in the observation is shown in Appendix 9. Cues signalling the ends of each interval (after each 6 seconds) were prerecorded on audiotape, thus, this audiocassette helped the observer to keep his attention to the student behaviour and time without need of a stopwatch.

The audiotape was programmed so that the observer heard the following sequence of cues: "Observe S1 6 sec Record..... 6 sec..... Observe S2 6 sec Record..... 6 sec Observe S3 6 sec..... Record..... 6 sec Observe S1 6 sec..... Record..... 6 sec", and so on. Since each individual physical education lesson period is 45 minutes in length for the primary school in Bahrain, the audiotape was programmed with the format observe/ record to run on for more than 45 minutes. The "observe" cues in the sequence was constituted at the start of the first interval. Upon the "record cue", the observer had to record on the coding sheet. During the preparation of the cues tape, the researcher tried to make sure that the clock provided a consistent account of time.

3.7- DATA COLLECTION

All the teachers who participated in the study were notified by the DPE at the Ministry of Education that observation would take place during October 1993. A week prior to the observation schedule, the researcher visited all the teachers who participated in the study. The teacher was asked to indicate his or her working timetable for the academic year 1993-1994 and was told that the researcher (observer) would call in some time during the following days to inform his or her about the definite time for observation. Prior to the beginning of the observation, thus, all the teachers were informed of the designated time for observation. Within the parameters of this applied research, it was not possible to determine the nature of activities taught. Therefore, the teachers were asked not to deviate from the nature of activities and the organizational patterns they typically included in their physical education lessons.

Each of the 40 teachers included in the study was observed teaching one physical education lesson. The researcher attempted to observe all teachers for two lessons, but lack of time allowed one observation in all cases. A total of 40 lessons were observed. Each lesson lasted approximately 40 minutes and observations were recorded for an average duration of 36 minutes. A variety of activities was observed for both male and female teachers. Movement education, gymnastics, volleyball, and basketball were taught by both male and female teachers. In addition, male teachers were

observed teaching football, athletic, and handball. Data for all the teachers was coded for a total 7,200 intervals (5 intervals per minute X 36 minutes per lesson X 40 lessons = 7,200 intervals).

The three students selected for observation (one high-, one medium-, and one low-skilled) were listed alphabetically on the coding sheet. Each of the selected students was observed in turn throughout the lesson period, so that each of the three selected students was likely to be observed during 1/6 of the class period, another 1/6 being used to record his or her behaviour. Thus the three students were observed on a 36 second cycle. The observer observed Student 1 for 6 seconds, then recorded the information on Student 1 during the next 6 second interval, followed by observation of Student 2 for 6 seconds and then 6 seconds to record, and likewise for Student 3 always in that order. This sequence was repeated for the observation period. A prerecorded audiotape was used for cuing observational intervals. Observation began when the teacher started the lesson. In each one minute 5 observation intervals were coded, providing a total of 180 coded intervals for each lesson (5 intervals X 36 minutes = 180).

3.8- STATISTICAL ANALYSES

The data from all recording sheets were transferred on to a coding sheet that had been prepared when the instrument was designed. This data was then keypunched for computer analysis using the SPSS programmes. Two main statistical methods were used for the purpose of analysing the ALT-PE. The first utilized descriptive statistics and included frequencies and percentages for each category in the ALT-PE system. The descriptive statistics were computed to determine how many times each one of 21 specific categories had been coded. Five composite scores were also computed, by adding together various specific categories; they were general content, subject matter knowledge, subject matter motor, not motor engaged, and motor engaged. This was done for each lesson, and the frequencies were summed over all the observed lessons. The ratio of the final frequency count for each category, or composite score, over the total number of observation intervals (once multiplied by 100) yielded a percentage of class time devoted to a given or a given group of categories. The second method used an analytic approach using t-test to examine the main central questions of this study.

CHAPTER - 4 -

RESULTS AND REPORT OF THE DATA

4.1- Descriptive Data

4.1.1- Number of Intervals

4.1.2- Percentage of ALT-PE Categories for All Lessons

4.1.3- Percentage of ALT-PE Categories for Male and Female Teachers

4.1.4- Percentage of ALT-PE Categories for BPE and DPE Teachers

4.1.5- Percentage of ALT-PE Categories for Individual and Team Sports

4.2- Differences in ALT-PE

4.2.1- Gender and ALT-PE

4.2.2- Teacher Qualifications and ALT-PE

4.2.3- Subject Matter and ALT-PE

4.1- DESCRIPTIVE DATA

4.1.1- NUMBER OF INTERVALS

As mentioned previously, each of the 40 teachers involved in the study were observed teaching one lesson. A total of 7,200 intervals were coded for the 40 teachers. Of these, 3,600 were coded for male teachers and 3,600 for female teachers. The number of intervals coded were 3,600 for the B.PE. teachers and 3,600 for the D.PE. teachers. A total of 3,960 intervals were observed for team activity lessons (basketball, volleyball, football, handball). A total of 3240 intervals were observed in individual activity lessons (athletic, gymnastic). The distribution of the total number of intervals across teacher gender, teacher qualification, and lesson content is shown in Tables 3 and 4.

TABLE 3. The total number of intervals across teacher gender and qualification

Teachers	B.PE	D.PE	Total
Male	1,800	1,800	3,600
Female	1,800	1,800	3,600
Total	3,600	3,600	7,200

TABLE 4. The total number of intervals in different Subject Matter

Subject Matter	Male and Female
Team Activity	3,960
Individual Activity	3,240
Total	7,200

4.1.2- PERCENTAGE OF ALT-PE CATEGORIES
FOR ALL LESSONS

The overall percentage of observed intervals for ALT-PE and for each category and subcategory in the system, for the forty lessons taught by the male and female teachers in the study, are presented in Appendix 10 and summary in Table 5 and 6. These various percentages and intervals represent the proportion of the total lesson period devoted to any particular category or subcategory of the ALT-PE system.

Table 5 contains the percentage of lesson time and the number of intervals devoted to ALT context level categories and subcategories over forty lessons. The descriptive analysis of the data in this table show that about 36.8% of the total context level time (2,653 intervals) was spent on general content or nonphysical education content. As expected in any physical education lesson, some time was spent in organisational details such as taking attendance and lecturing about appropriate behaviour in the gymnasium.

**TABLE 5. Percentage of Lesson Time and Number of Intervals Spent in
ALT-PE Context Level Categories Over Forty Lessons.**

Categories	Total Interval	Context Level %
<u>CONTEXT LEVEL</u>		
Transition	1682	23.4
Management	474	6.5
Break	22	0.3
Worm-Up	475	6.6
<i>General Content (total)</i>	2653	36.8
Technique	1426	19.8
Strategy	159	2.2
Rules	9	0.1
Social Behaviour	10	0.1
Background	25	0.3
<i>Subject Matter Knowledge Content (total)</i>	1629	22.6
Skill Practice	1591	22.1
Scrimmage/Routine	156	2.2
Game	477	6.6
Fitness	694	9.6
<i>Subject Matter Motor Content (total)</i>	2918	40.5
Total Context Level	7200	100

Approximately 6.5% of the general content time (474 intervals) was devoted to this behaviour. These results are consistent with the results of other research outside Bahrain (Godbout et al., 1983; Placek et al., 1982).

The most obvious observation relating to the general content subcategories, is that students at primary school in Bahrain spent much of their time in transitional activities. They spent approximately 23.4% of the lesson time (1682 intervals) in transitional and organisational activities such as changing activities, regrouping, placing equipment, changing formation, and receiving direction from the teacher. It must be noted that much of the transition and management time was spent carrying equipment from either the store or some area around the gymnasium especially during the gymnastic lessons. The proportion of transition and organisation activities is higher than the 21.7% of Cousinean and Luke (1989), 11.8% of Godbout et al. (1983), and the 19.1% Placek and Randall (1986) found in elementary school physical education lessons in the United States. On the other hand this proportion of transitional activity is lower than Kamel (1985) found in elementary and intermediate school physical education lessons in Bahrain.

Physical education lesson at primary schools in Bahrain appears to be characterised by very little time devoted to break behaviour. Only 0.3% of the general content time (22 intervals) was spent in break behaviour. This means that the students wasted very little time in non-subject matter related issues such as getting a drink of water or telling jokes during the lessons.

The data for the general content category revealed that students spent about 6.6% of all lesson time (475 intervals) in warm-up activities. These activities were provided at the beginning of the lesson and were not directly related to the learning of the skills. However, the purpose of the warm-up activities was to prepare the students for engaging in further activity.

It can be seen that about 36.8% of the context level time was spent in general content. These figures compare favourably with the results from other primary physical education studies outside Bahrain, with Godbout et al.(1983) and Placek et al. (1986) reporting similar percentages of time for general content, and Placek et al. (1982) reporting less time for general content. The activity patterns used for warm-up subcategory in each lesson in this study may have served to increase the time spent on general content while decreasing the time spent on physical education content either motor engaged or not motor engaged.

A glance at Table 5 reveals that a wide variation was evident among the lessons in the amount of time spent in the subject matter knowledge category. The teachers spent little of the lesson time providing their students with information regarding strategy, rules, social behaviour, and background subcategories but instead gave time exclusively to the technique behaviour. The forty teachers in the study spent approximately 22.6% of the context level time (1629 intervals) in the subject matter knowledge category. Approximately 19.8% of the time (1426 intervals) was devoted to relating information about

motor skill technique. Only about 2.2% of the subject matter knowledge time (159 intervals) was spent discussing various strategies with the team and about 0.3% (25 intervals) of the time was devoted to providing students with background information about the activities being taught. In all lessons, taught by both male and female teachers, very little time was devoted to social behaviour such as explanation of what constitutes sportsmanship in game. Virtually little time was devoted to providing students with information about the rules of team activities (see Figure 4).

With respect to the subject matter motor, Table 5 also shows that less than half of the lesson in primary school was devoted to motor involvement and participating in physical education activities. Overall, about 40.5% of the context level time (2918 intervals) was spent in the subject matter motor category. Most physical education teachers in the study allocated the greatest amount of subject matter motor time to skill practice (time devoted to practice the of skills outside the applied context with the primary goal of skill development). Slightly more than half of the time (about 22.1%, 1591 intervals) was spent in skill practice. It was somewhat surprising that scrimmages, in which students primarily rehearsed various skills while receiving feedback from their teacher, occurred slightly less than 3% of the time (156 intervals). This means that physical education teachers in Bahrain primary schools do not emphasize scrimmage during the planning of the lesson. Time devoted to the application of skills in game and competitive settings when the students perform with intervention from the teacher

accounts only for 6.6% (977 intervals). Each lesson in Bahrain primary schools should include some physical fitness activity, and 9.6% of the time (694 intervals) was spent in the development of fitness.

A report of the overall percentage of observed intervals as well as the number of intervals devoted to learner involvement categories by all the teachers in the study is presented in Table 6. As can be seen from the table, the students at primary schools in Bahrain spent more time not actively engaged in motor activity than actively engaged in motor activity. Bahraini primary students were not engaged in motor activity for 67.9% of the time in physical education lessons (4891 intervals). The students in all lessons spent very little time in the interim subcategory (0.8%, 62 intervals) such as retrieving ball or fixing equipment. As was expected, Bahraini students in primary schools spent about one-fifth (about 20%, 1390 intervals) of every PE lesson in waiting for something to happen (waiting in line, waiting for the next teacher direction, waiting for the ball to come and waiting for an activity to begin). In some lessons waiting behaviour reached an acceptably high level of 44%. This figure (20 %) is quite high than the 9.9% Cousinean & Luke (1990) and Shute et al. (1982) found in primary physical education ALT studies in the United States. However, it is slightly less than the 24% Godbout et al. (1983) and the 23% Kamel (1985) found in primary physical education ALT studies. Off-task behaviour, in which the student was either not engaged in an activity he or she should be engaged in, occurred slightly more than 7.3% (527 intervals) of the time. The great majority of the not motor engaged

time was devoted to on-task activities. For all primary school physical education students in Bahrain, close to 19.6% of the time (1412 intervals) was devoted to performing transitional, managerial, and worm-up tasks in the prescribed manner (on-task). These activities were not related to the learning of skills. Cognitive behaviours such as listening to teacher instructions, watching a demonstration or discussing a group task was the most dominant category in all lessons and was recorded as occurring for 20.8% (1500 intervals) of all lessons time. This figure of cognitive behaviour is similar to that reported in other studies outside Bahrain in which more time was reported for cognitive behaviour. For example, Metzler (1979) and Cousinean and Luke (1990) found that when students were engaged, they spent more time in cognitive engagement; the result of this study showed that Bahraini students in primary schools spent much time in cognitive engagement especially in receiving instructions before beginning the activities. That is, much of ALT produced in physical education lessons at primary school level in Bahrain are more likely to be cognitive rather than motor.

According to Table 6, approximately one-third (32.1%, 2309 intervals) of the learner involvement time was deemed to be motor involvement with subject matter oriented motor activities. Approximately more than half of the motor engaged time (about 19.9%, 1435 intervals), primary students judged to be in the motor appropriate category reflecting the amount of Academic Learning Time in Physical Education (ALT-PE) which, by definition, suggested that the students were involved in motor activity in such a way as

to produce a high degree of success. Motor inappropriate, in which students were engaged in subject matter oriented motor activity but the activity was either too difficult or the activity was so easy that practising it could not contribute to lesson goals, was reported for close to 11.2% (808 intervals) of the time. In the present study little time (about 0.9%, 66 intervals) was devoted to motor supporting -where the student was engaged in a subject matter activity the purpose of which was to assist other learner (see Figure 5).

As can be seen from the results cited above, the ALT-PE score for student of primary physical education teachers in Bahrain was typically quite low, often no more than 8 to 10 minutes per student per 40-50 minutes lesson. This score compares with results from other primary physical education ALT studies outside Bahrain in which Cousinean and Luke (1990), Godbout et al. (1983), Metzler (1979), and Placek et al. (1982), Placek and Randall (1986) and Randall and Imwold (1989) reported slightly higher percentages of the ALT-PE scores. A comparison of ALT-PE scores for primary students in Bahrain and in other primary physical education ALT studies is set out in Appendix 11.

In spite of low success rates found in the physical education lesson in Bahrain (Kamel, 1985), the results obtained in this study were even lower. These results confirm the tendency of primary school physical education lessons in Bahrain to devote very little time students spending in motor activity at an appropriate success rate (ALT-PE).

**TABLE 6. Percentage of Lesson Time and Number of Intervals Spent in
ALT-PE Learner Involvement Level Categories Over Forty Lessons.**

Categories	Total Interval	Learner I. Level %
<u>LEARNER INVOLVEMENT LEVEL</u>		
Interim	62	0.8
Waiting	1390	19.3
Off Task	527	7.3
On Task	1412	19.6
Cognitive	1500	20.8
<i>Not motor Engaged (total)</i>	4891	67.9
Motor Appropriate	1435	19.9
Motor Inappropriate	808	11.2
Supporting	66	0.9
<i>Motor Engaged(total)</i>	2309	32.1
Total Learner Involvement Level	7200	100

Figure 4: Percentage of intervals spent in ALT-PE context level categories

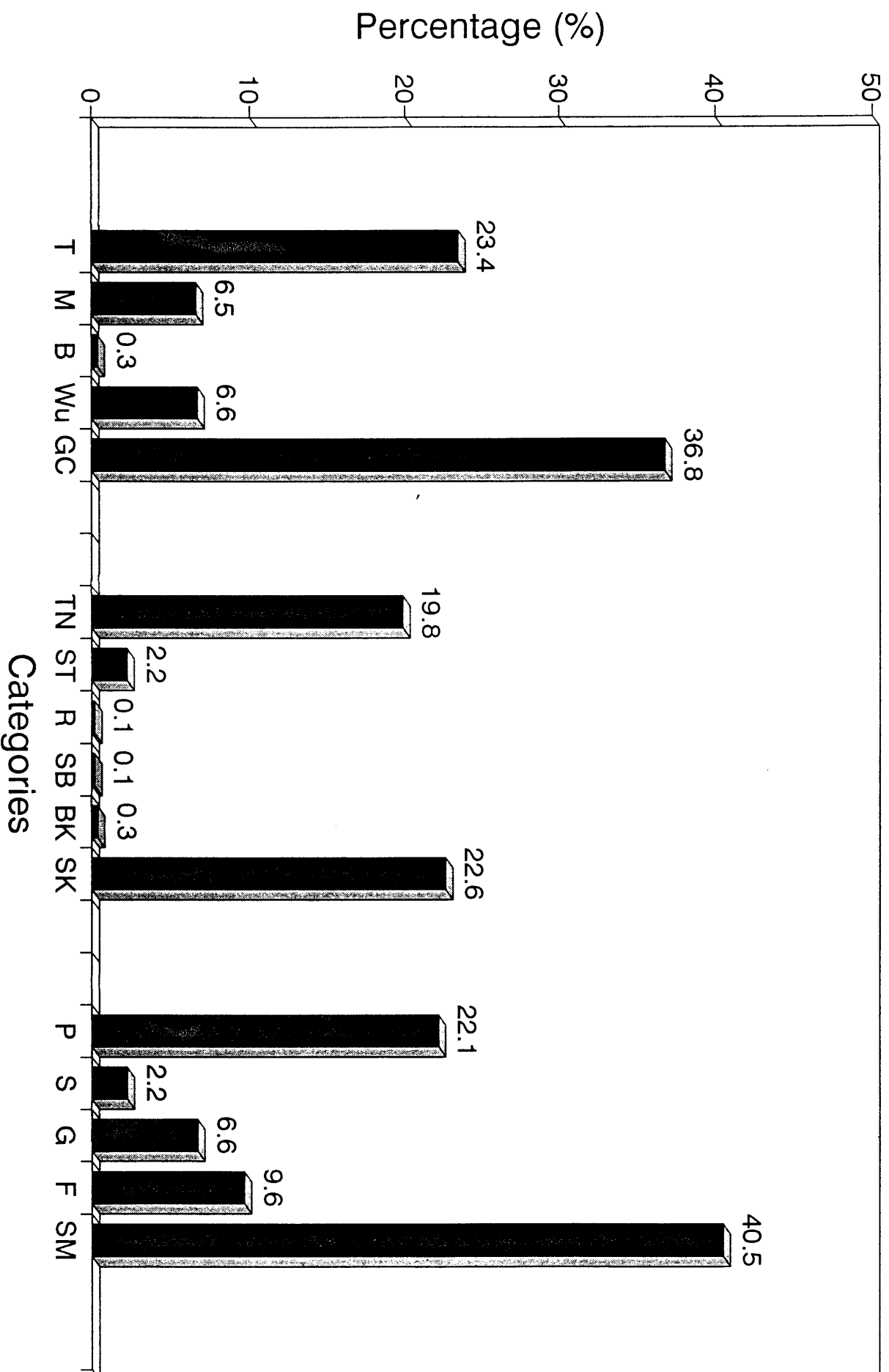
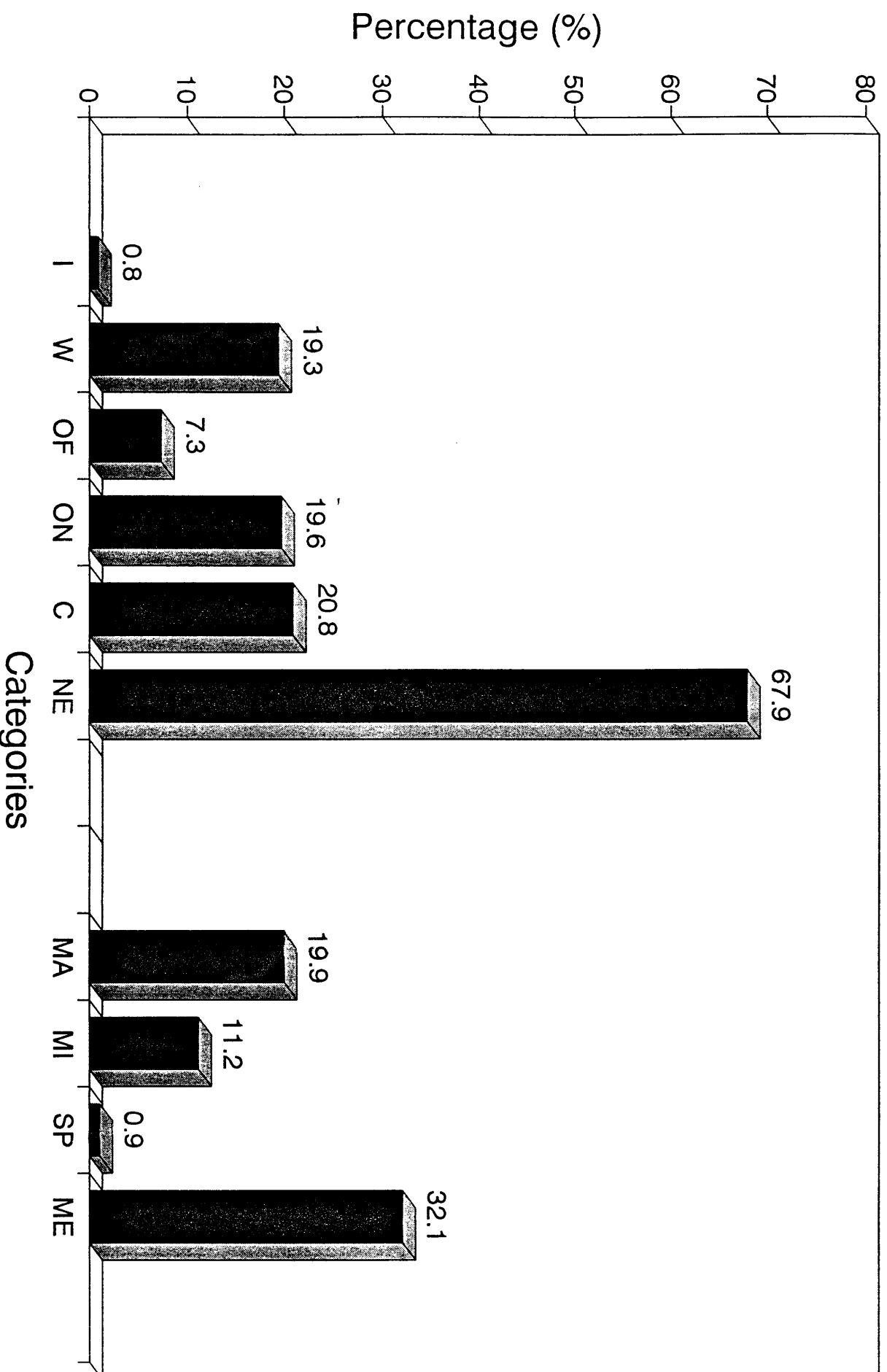


Figure 5: Percentage of intervals spent in ALT-PE learner involvement level categories



4.1.3- PERCENTAGE OF ALT-PE CATEGORIES FOR MALE AND FEMALE TEACHERS

Apart from presenting a descriptive account of how time is spent in physical education lessons in primary schools, an attempt was also made to ascertain the nature and degree of teaching differences between male and female teachers. An overall percentage of observed intervals devoted to the various ALT-PE categories by male and female teachers is presented in Appendix 10 and summary in Tables 7 and 8. A comparison of the total percentages for the context level subcategories -general content, subject matter knowledge, and subject matter motor- reveals only slight differences, less than 5%, occurred between the male and female teachers. However, the data for the categories within these major subdivisions reveals a difference between the students of male and female teachers. The students of female teachers in this study spent slightly more of their time in general content (37.7%) than the students of male teachers (35.4%). Thus large periods of female lesson time were devoted to organizational activities related to instruction, changing groups and activities, and providing equipment. The students of female teachers spent more time in transition (24.5%) and management (7.1%) than did the students of male teachers (22.3% and 5.4%, respectively). Both male and female teachers lessons spent approximately 6-7% of their lesson time in warm-up activities.

TABLE 7. Percentage of Observed Intervals Spent in ALT-PE Context Level

Categories for Male and Female Teachers.

Categories	Male		Female	
	%	SD	%	SD
<u>CONTEXT LEVEL</u>				
Transition	22.3	7.45	24.4	7.75
Management	5.8	4.53	7.1	3.96
Break	0.1	0.74	0.5	0.81
Warm-Up	7.7	4.10	5.5	2.68
<i>General Content (total)</i>	35.4	6.41	37.7	.99
Technique	20.	5.88	19.8	6.39
Strategy	0.9	1.06	3.7	3.26
Rules	0.1	0.50	0.1	0.22
Social Behaviour	0.0	.0	0.3	0.71
Background	0.7	2.27	0.0	.0
<i>Subject Matter Knowledge Content (total)</i>	21.7	.11	24.	5.43
Skill Practice	22.2	7.90	21.4	6.10
Scrimmage/Routine	1.3	2.44	3.1	3.47
Game	8.4	8.35	6.5	7.77
Fitness	11.5	6.65	7.7	6.63
<i>Subject Matter Motor Content (total)</i>	43.9	6.73	38.7	.53
Total Context Level	100		100	

With regard to subject matter knowledge categories, again female teachers provided 24% of context level time directed to subject matter knowledge, as compared to 21.7% provided by the male teachers. When the subject matter knowledge subcategories were examined, male and female teachers spent same amount of time instructing the lesson in technique (20.5% and 19.8%). The female teachers spent a greater percentage of time relating strategy to the class (3.7% versus 0.9%). For both groups, very little time (less than 1%) was spent in rule, social behaviour and background subcategories.

Less than half of the time in male and female teachers lessons was devoted to motor involvement activities. The male teachers' lessons recorded a slightly greater percentage of time for subject matter motor than did the female teachers' lessons (43.9% versus 38.7%). The male teachers' lessons spent a greater percentage of their time practising specific skills and performing drills as compared to the female teachers' lessons (22.2% versus 21.4%). During scrimmages, students are usually getting feedback from the teacher in order to improve their performance, it is worth noting that when the figure for scrimmage/routine is summed, the students of female teachers spent 3.1% of their time in this category while the students of male teachers spent only 1.3% of their time in this category. The students of male and female teachers spent different time in game play and application of skill, with female teachers' students spending only 6.5% of their time in game play. In contrast, the male teachers' students spent the greater amount of time in

game play (8.4%). There were some difference in the percentage of time students of male and female teachers devoted to fitness activities. Fitness was the emphasis for 11.5% of the time in male teachers' lessons as compared to 7.7% in female teachers' lessons (see Figure 6).

Regarding learner involvement level, there were a few number of differences in students behaviour dependent on the sex of the teacher and these are summarized in Table 8. It was somewhat surprising that student were not engaged in motor activity for 70% of the time in the male teachers' lessons. Students in male teachers' lessons spent slightly more time performing interim and off-task activities than did the students in female teachers' lessons. For both male and female teachers lessons, approximately 20% of the lesson time was spent in waiting behaviour such as waiting in line or sideline for an activity to begin. Similar percentages (about 19%) were recorded in on-task activities such as performing a management, transition, or worm-up task. Male teachers appeared to engaged students slightly more in cognitive behaviour (21.2 to 20%). It appeared therefore that both Bahraini male and female teachers at primary schools spent more time involving students in cognitive tasks such as listening to teachers' instructions or watching a demonstration.

Descriptive data revealed that students participated in motor engagements for 34.6% in female teachers' lessons, whereas the students in male teachers' lessons participated in motor engagement for only 29.6% the lesson time. Examination of the amount of ALT-PE score revealed that more

than half of the motor engaged time was recorded for the students ALT-PE score in the male and female teachers' lessons (about 19-20%). In this study a larger amount of inappropriate activity was recorded for students of female teachers as compared to students of male teachers (13.7% and 7.8% respectively). Since motor appropriate behaviour is indicative of the academic learning time in physical education provided, the comparison data revealed that the Bahraini male and female teachers were equal in terms of this primary criterion. One interesting comparison showed that in spite of male teachers spending smaller amount of time in management and transition activities, no differences were apparent in the rate of ALT-PE. This result gave strong support towards the notion that male and female teachers provide similar ALT-PE rates. Figure 7 shows comparisons of ALT-PE learner involvement level categories between male and female teachers.

TABLE 8. Percentage of Observed Intervals Spent in ALT-PE Learner Involvement level Categories for Male and Female Teachers.

Categories	Male		Female	
	%	SD	%	SD
<u>LEARNER INVOLVEMENT LEVEL</u>				
Interim	1.4	2.59	0.4	0.73
Waiting	19.9	11.14	19.1	6.34
Off Task	8.2	4.81	6.0	4.52
On Task	20.	3.46	19.2	4.71
Cognitive	21.2	6.48	20.5	4.81
<i>Not motor Engaged (total)</i>	70.7	8.58	65.5	.64
Motor Appropriate	20.1	6.91	19.9	4.45
Motor Inappropriate	7.8	4.28	13.7	4.45
Supporting	1.7	3.83	1.0	1.24
<i>Motor Engaged(total)</i>	29.6	7.89	34.6	5.62
Total Learner Involvement Level	100		100	

Figure 6: Comparison of ALT-PE context level for male and female Teachers

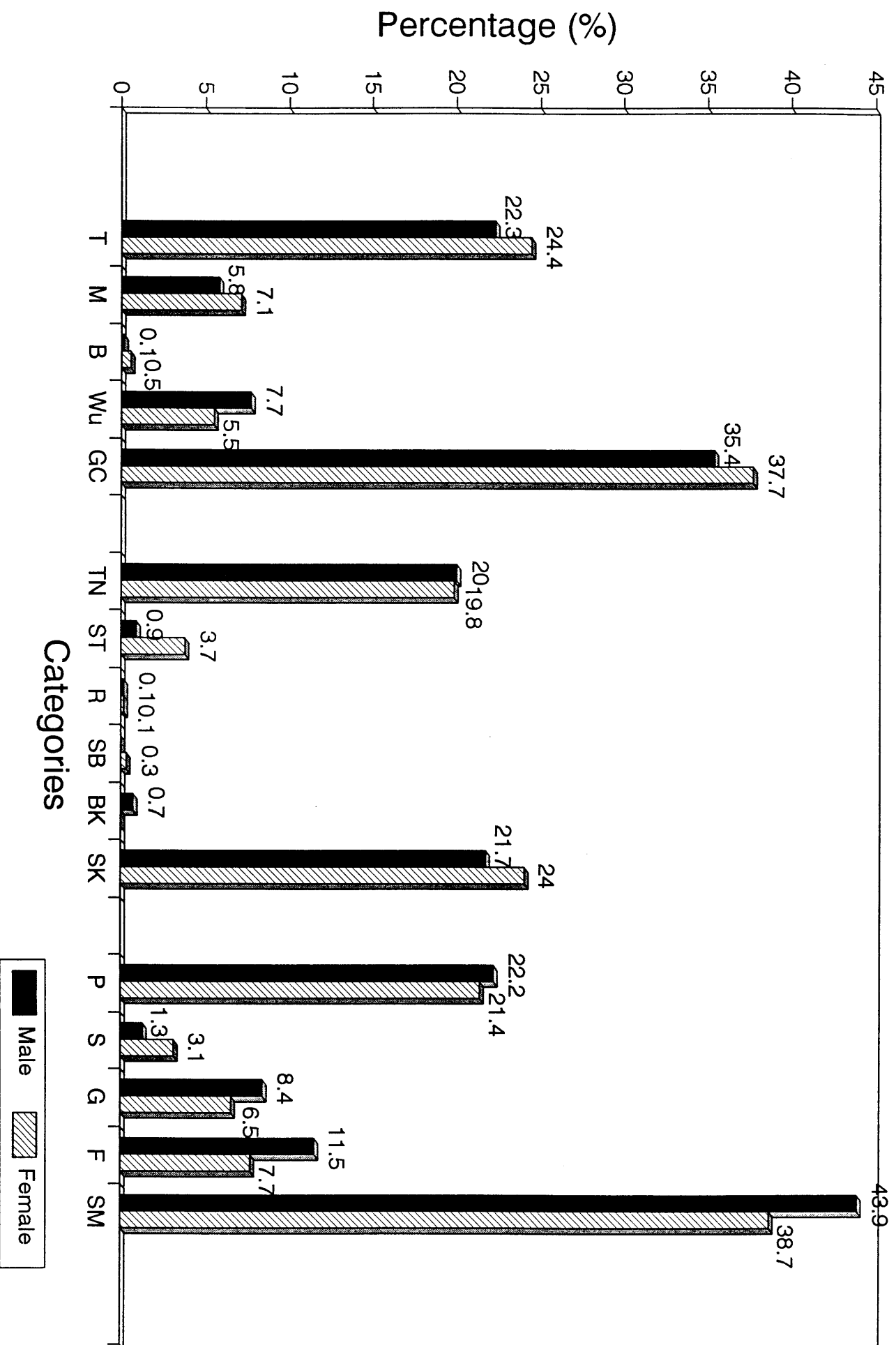
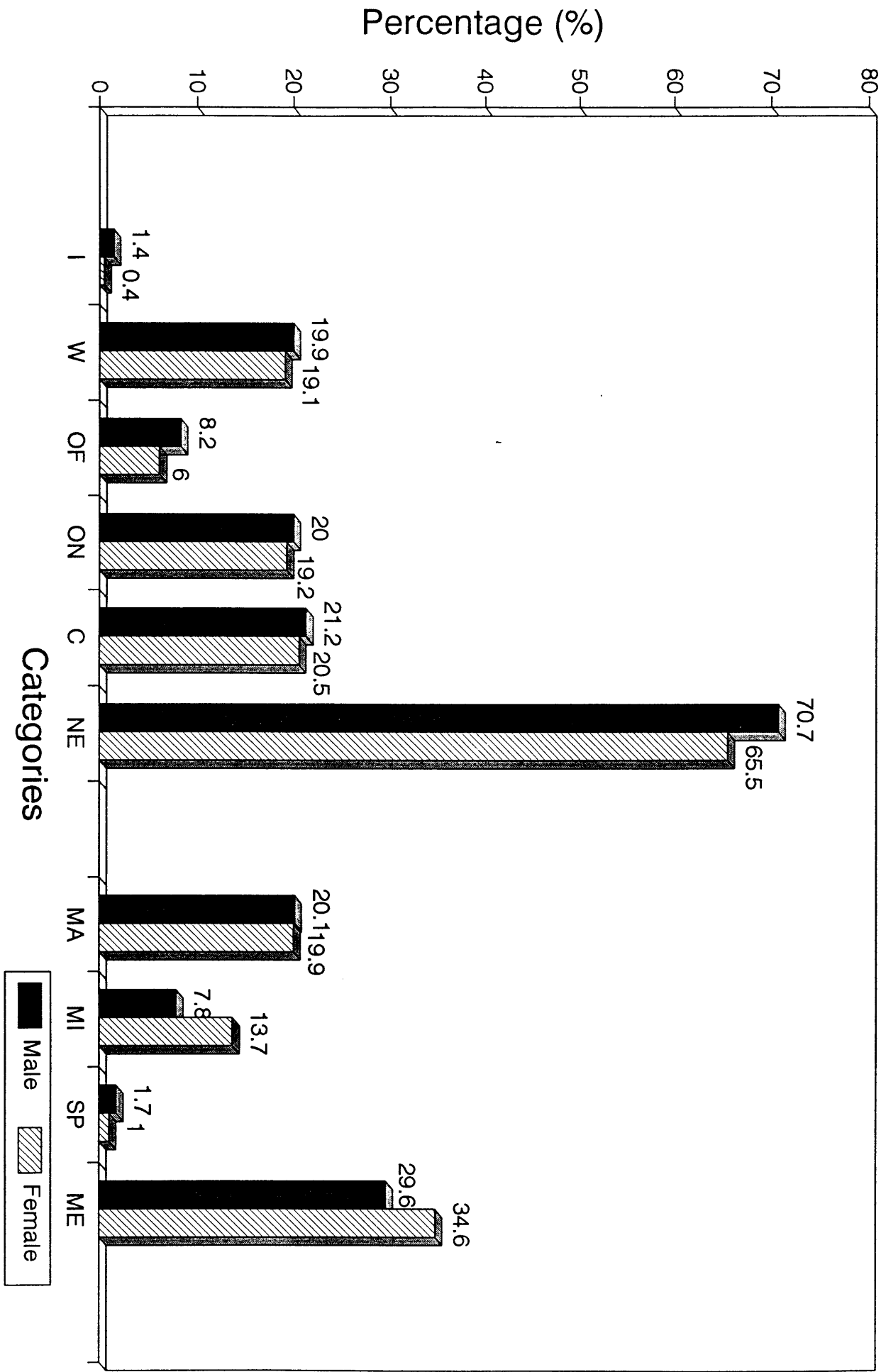


Figure 7: Comparison of ALT-PE learner involvement categories for male and female teachers



4.1.4- PERCENTAGE OF ALT-PE CATEGORIES FOR BPE AND DPE TEACHERS

One of the most important aspects to be examined in this study is whether or not students of BPE and DPE teachers experience the same portion of ALT-PE. The context and learner involvement levels of ALT-PE data for BPE and DPE teachers are summarized in Tables 9 and 10 for the complete data in Appendix 10. The analysis of the data, obtained for the two teacher qualifications, revealed differences in the context level category. Students of BPE devoted 32.6% of their time to general content, while students of DPE teachers spent about 40.1% of their time in this category. A closer examination of the subcategories of general content indicated that, primary school students of DPE teachers spent large percentages of lesson time in transitional activities, about 28%, whereas students of BPE teachers spent less time in this subcategory, about 19%. The majority of the transition time in DPE teachers lessons was spent in organising students and managing equipment. This result tended to suggest that the BPE teachers had slightly more idea about how to minimize transition and management time. It is noteworthy that primary school students of both BPE and DPE teachers spent equal percentages of lesson time in management activities, about 6%. Most of this time was spent in taking attendance. Both groups devoted approximately 6% of their time to warm-up activities and about 0.7% to background.

TABLE 9. Percentage of Observed Intervals Spent in ALT-PE Context Level

Categories for BPE and DPE Teachers.

Categories	BPE		DPE	
	%	SD	%	SD
<u>CONTEXT LEVEL</u>				
Transition	19.4	6.26	27.3	6.73
Management	6.8	4.43	6.4	.20
Break	0.3	.94	0.3	.59
Warm-Up	6.1	3.43	6.1	3.73
<i>General Content (total)</i>	32.6	7.10	40.1	6.10
Technique	22.1	5.83	17.9	5.65
Strategy	2.0	1.67	2.7	3.52
Rules	0.2	0.51	0.0	.0
Social Behaviour	0.1	.62	0.1	.41
Background	0.1	.49	0.6	2.24
<i>Subject Matter Knowledge Content (total)</i>	24.5	6.12	21.3	6.38
Skill Practice	22.8	5.11	21.3	8.54
Scrimmage/Routine	2.6	3.23	1.6	2.94
Game	4.1	5.79	9.4	9.04
Fitness	13.4	7.10	6.5	.12
<i>Subject Matter Motor Content (total)</i>	42.9	8.12	38.8	6.12
Total Context Level	100		100	

There was a slight difference in the amount of time devoted to subject matter content related to knowledge. It appeared that BPE teachers spent a greater proportion of this time (22.1% to 17.9% for DPE teachers) on techniques associated with practical activity. For both groups approximately 2% of the time was spent in strategy behaviour. As expected, very little time was dedicated to the rules and background of the task being taught in the two groups. Possibly the shortage of time spent in these two behaviours may be due to lack of sufficient information about the subject matter being taught and therefore the teachers in the two groups may have felt better to not emphasize these behaviours during the lessons.

Further examination of the categories of context level ,which are presented in Table 9, indicated that the BPE teachers devoted a greater percentage of time (42.9%) to subject matter motor than did the DPE teachers (38.8%). The BPE teachers spent slightly more than half of the subject matter motor time (about 22.8%) in practising specific skills related to content of the lesson as compared to the DPE teachers (21.3%). This in turn resulted in a slightly higher motor appropriate recording of learner involvement for students of BPE teachers' lessons. As expected, a higher game play portion (about 9.4%) did appear in DPE teachers' lessons against the BPE teachers' lessons (4.1%). In the two groups, similar time was devoted to scrimmage behaviour, about 2%. It was somewhat surprising that BPE teachers devoted the same amount of time to this behaviour as DPE teachers. The time devoted by the two teacher qualification groups to the fitness

subcategory was not consistent between the two groups. The BPE teachers devoted 13% of the time to develop the student fitness level, whereas DPE teachers spent about 6% in this subcategory. Figure 8 shows the percentage of context level categories of ALT-PE across the two teachers qualifications.

Comparison of the percentage of total observed intervals spent within the two categories of the learner involvement level revealed some differences between the BPE and DPE teachers (see Table 10). As expected, the DPE teachers spent more time (71.3%) not actively engaged in motor activity than BPE teachers (63.9%). Mostly this difference was due to the larger time DPE teachers spent in waiting behaviour, about 25%. The high percentage of waiting time for this group lesson was mainly due to students sitting out waiting for a turn or a trial. In some lessons this reached an acceptably high level of 44%. On the other hand, students of BPE teachers spent less lesson time in waiting activity (13.9%). It appeared therefore that BPE teachers spent more time involving students in motor engagement related to the goal of the lesson than to the waiting activity. Generally, both figures of waiting time are quite high when compared to what was found in the literature. Excessive periods were spent in transitional and organizational activities by both BPE and DPE teachers (on-task). This figure revealed that BPE and DPE teachers encouraged more on-task behaviour from their students and this was directly linked to their greater use of transitional and organizational factors. These periods accounted for 20%. This in turn resulted in a very low percentage of-task behaviour regarding both BPE and DPE teachers, about

7%. The DPE teachers spent slight less time in cognitive behaviour (about 22.6%) than BPE teachers (19.4%). However the average percentages for the two teacher qualifications indicated that both teachers spent much of the lesson time talking rather than practising.

As indicated in Table 10, approximately half of the learner involvement time was spent in motor engaged activities. As expected, the students of BPE teachers spent more time actively engaged in performing motor skills (Motor Engaged) than did DPE teacher (36.1% versus 28.5%). During this time students of BPE teachers experienced more success and accrued more ALT-PE (Motor Appropriate) (23.8%) than the students of DPE teachers (16%). The students of BPE and DPE teachers experienced similar amounts of inappropriate motor activity, about 10.5%.

The data cited above appears to suggest that although the two figures of the ALT-PE scores are quite low, BPE teachers were more effective in which they spent less time in management and organization tasks, provided more motor engaged time, spent less time in waiting behaviour, and gave more practice opportunities at an easier level of difficulty (ALT-PE score) than the DPE teachers. Figure 9 shows the percentage of learner involvement level categories of ALT-PE across the three teacher qualifications.

**TABLE 10. Percentage of Observed Intervals Spent in ALT-PE Learner
Involvement level Categories for BPE and DPE Teachers.**

Categories	BPE		DPE	
	%	SD	%	SD
<u>LEARNER INVOLVEMENT LEVEL</u>				
Interim	1.3	2.16	0.5	.76
Waiting	13.9	6.61	24.9	7.53
Off Task	6.5	.38	6.9	4.29
On Task	19.6	4.20	19.6	4.09
Cognitive	22.6	.19	19.4	.76
<i>Not motor Engaged (total)</i>	63.9	6.13	71.3	6.67
Motor Appropriate	23.8	4.76	16.	3.90
Motor Inappropriate	10.5	.50	10.5	.02
Supporting	1.7	3.87	2.0	1.04
<i>Motor Engaged(total)</i>	36.1	5.45	28.5	6.68
Total Learner Involvement Level	100		100	

Figure 8: Comparison of AL-T-PE context level categories for BPE and DPE teachers

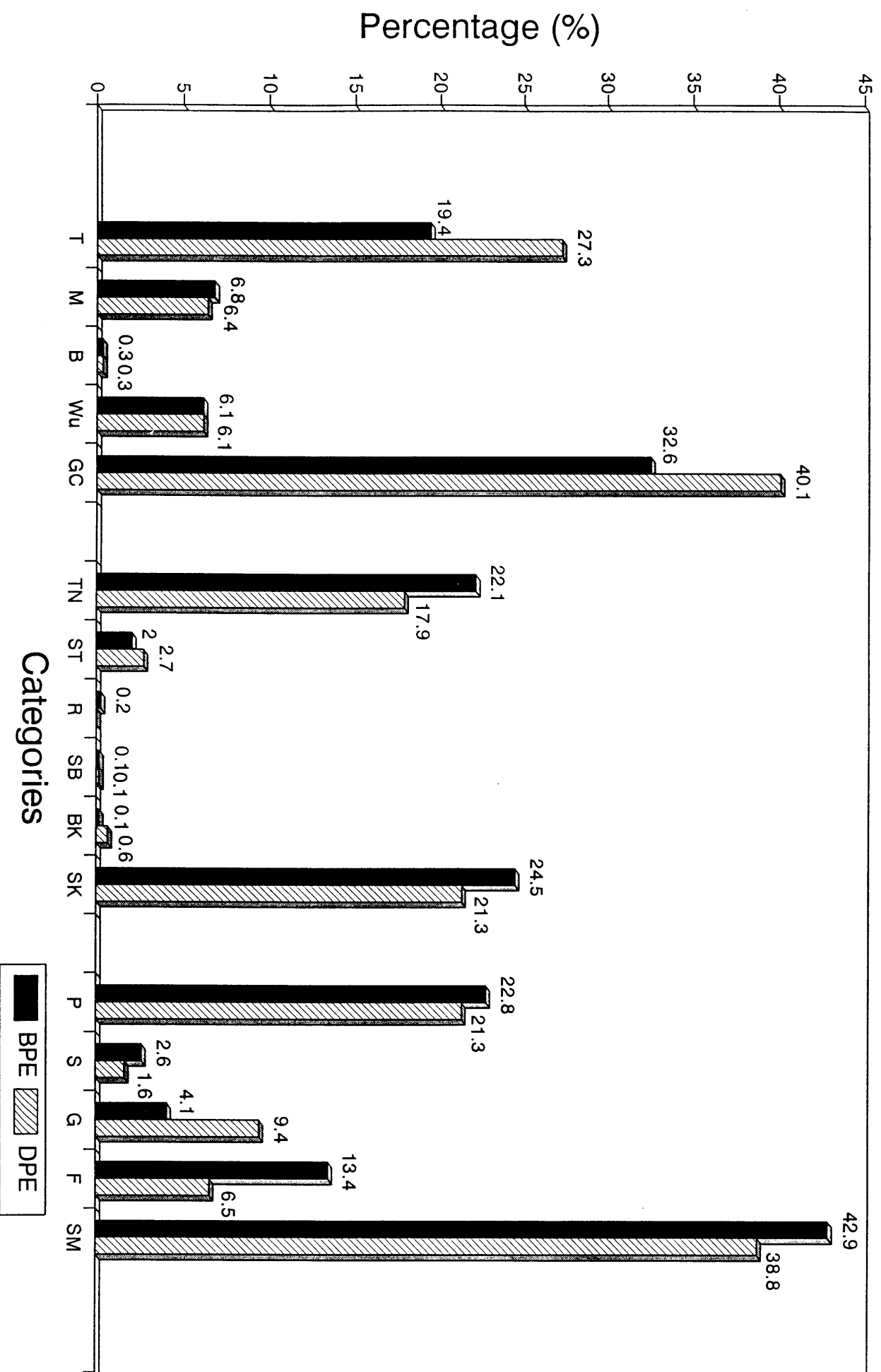
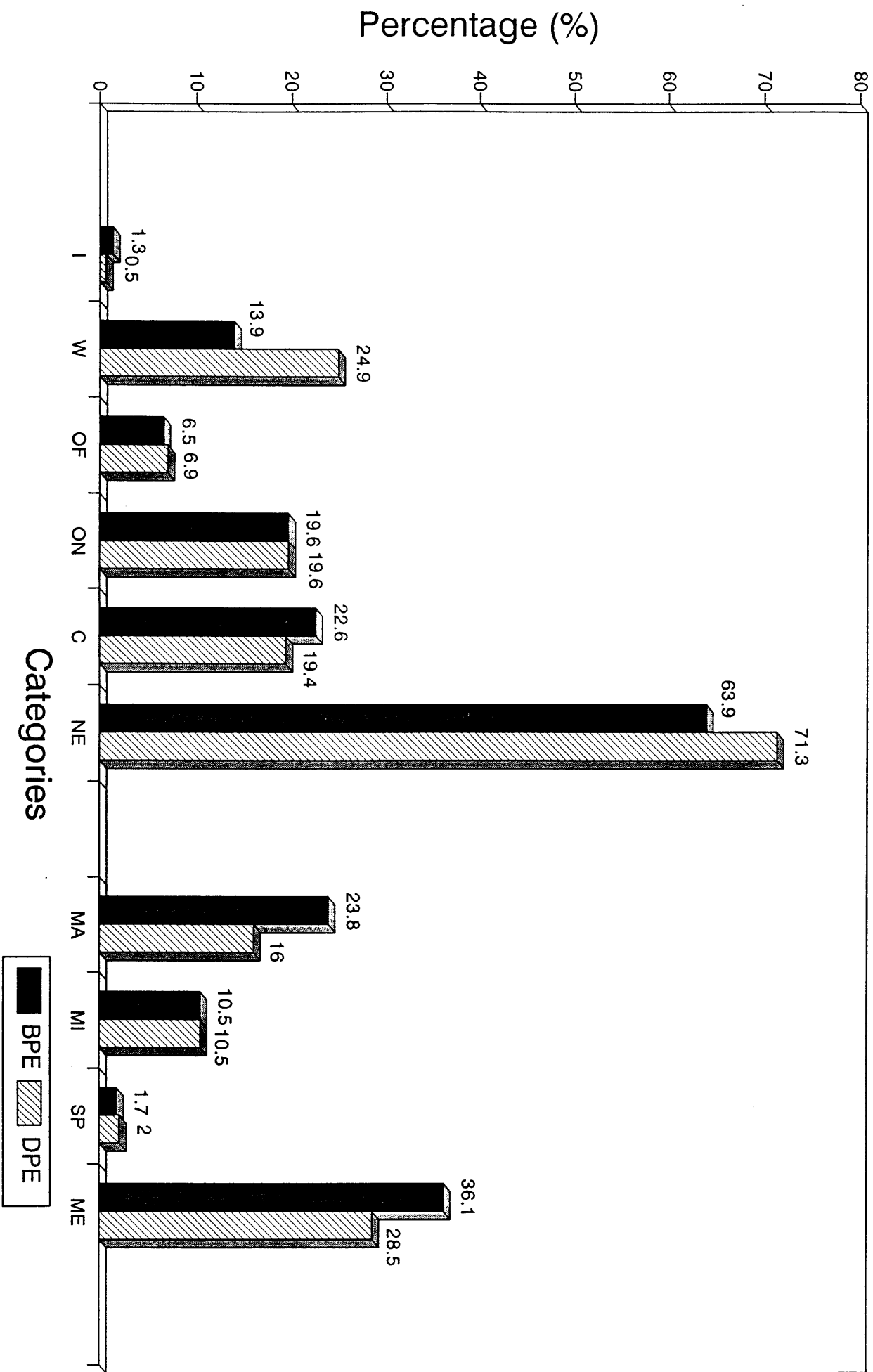


Figure 9: Comparison of ALT-PE learner involmen categories for BPE and DPE teachers



4.1.5- PERCENTAGE OF ALT-PE CATEGORIES FOR INDIVIDUAL AND TEAM ACTIVITIES

Another aspect to be considered in this study is whether or not teachers devoted the same amount of lesson time to each category of ALT-PE regardless of the activity being taught. The purpose of this part is to ascertain whether there are any differences in the ALT-PE category relating to the teaching of an individual and team activities.

Summary data of percentages for ALT-PE categories at the context and learner involvement levels for individual and team activities are presented in Tables 11 and 12 from the complete data in Appendix 10. The result for the individual and team activities showed slight differences in the time devoted to the general content category (39.9% to 34%). Students in individual activity lessons (e.g. gymnastic and athletic) spent larger amount of general content time in transition and organization management activities than did student in team activity lessons (27.1% to 19.8%). This may have been because the tasks and performances in individual activity, especially in the gymnastic lesson, were often need much equipment and the students spent a great deal of time preparing and getting the equipment. Students in both individual and team activity lessons spent similar amounts of time in management and break activities (about 6% and .5%). Although the content of the primary physical education curriculum determined the amount of lesson time which should be devoted to warm up activities, teachers of team activity lessons spent larger

**TABLE 11. Percentage of Observed Intervals Spent in ALT-PE Context Level
for Individual and Team Activities Lessons.**

Categories	Individual A.		Team A.	
	%	SD	%	SD
<u>CONTEXT LEVEL</u>				
Transition	27.1	6.49	19.8	7.10
Management	6.8	4.23	6.4	.39
Break	0.5	.92	0.1	.60
Worm-Up	5.	2.24	7.9	3.99
<i>General Content (total)</i>	39.9	6.12	34.0	7.48
Technique	19	7.04	21.0	5.25
Strategy	2.5	3.39	2.0	2.21
Rules	0.1	.52	0.1	.21
Social Behaviour	0.1	.43	0.0	.0
Background	0.7	2.38	0.2	.36
<i>Subject Matter Knowledge Content (total)</i>	22.4	6.54	23.3	6.25
Skill Practice	22.9	8.67	20.9	5.31
Scrimmage/Routine	1.9	2.58	2.4	3.51
Game	5.8	7.88	7.5	8.13
Fitness	7.5	6.02	12.0	7.09
<i>Subject Matter Motor Content (total)</i>	38.1	5.88	42.8	7.80
Total Context Level	100		100	

amounts of lesson time in these activities than did the teacher of individual activity lessons (7.9% versus 5%).

The results of the subject matter knowledge were mainly contrary to what was expected, that the higher subject matter knowledge time did appear in individual activity lessons. The findings of this study indicated that both lessons devoted almost the same amount of time to this section (about 23%). It appears that more information related to technique was give in team activities (about 21%). It was not surprising that no time was devoted to social behaviour and background in both individual and team activity lessons. However, the low 2% for the rules subcategory in team activity is rather surprising, since logic leads one to expect some detail of the rules of the game to be taught.

For the subject matter motor section, Bahraini primary students spent their time slightly differently depending on the unit being taught. In the individual activity lessons, the majority of time was split between 22.9% skill practice and 7.5% fitness activities. A similar time split occurred in team activity lessons (practice skill 20.9%, game play 7.5% and fitness 12%). The of skill practice in both individual and team activity lessons was similar in the manner in which they conducted their practice of technique or chain of technique outside the applied context. However, they differed in the time devoted to the application of skills in a competitive game setting and fitness activities in which team activity lessons devoted much time to game and

fitness activities. The low 2% for the scrimmage subcategory in team and individual activities is rather surprising, since logic leads one to expect some practice with receiving feedback of component sport skills. The results of this study indicated that the teachers of team activity lessons were more likely to encourage their students to participate in activities designed to develop physical fitness level than did teachers of the individual activity lesson. Figure 10 shows the percentage of context level of ALT-PE for the individual and team activities lessons.

Results for learner involvement level are presented in Table 12. They show that students in both individual and team activity lessons spent approximately 70% of the learner involvement time in not motor engaged section. However, the results for the categories within this level reveals some difference between individual and team activities lessons. Students in individual activity lessons spent a high percentage of time in the waiting subcategory (about 22.4%). This could largely be attributed to the time that was spent waiting in groups of nine students in front of the apparatus in the gymnastic lesson. For both activity lessons, approximately 7% of the time was spent in off task behaviour. On-task behaviour which involved students carrying out a non-subject matter task averaged 20%.

One of the important categories in the not motor engaged section was involved students in cognitive tasks such as listening or watching associated with the learning of movement tasks. Here the students in individual activity

lessons spent slightly more time in this behaviour as compared to the students in team activity lessons (21.9% versus 19%). Generally, the teachers in both lessons appeared to talk a lot.

In the motor engaged section, there were slightly higher motor appropriate recordings for the students in team activity lessons (21.6% to 18.1%). Since the teachers of individual activity lessons devoted much time to transition and waiting activities, this situation gave the students fewer opportunities to perform motor appropriate activities (ALT-PE score). Thus in this study greater emphasis was being placed on motor appropriated behaviours by the teachers of team activity lessons than by teachers of individual activity lessons. The low percentage of motor appropriate in individual activity lessons, raise serious questions about using more apparatus and equipment, especially in gymnastic lessons, for practice when the goal is psychomotor skills achievement. Figure 11 shows the percentage of learner involvement level of ALT-PE for the individual and team activity lessons.

**TABLE 12. Percentage of Observed Intervals Spent in ALT-PE Learner
Involvement level for Individual and Team Activities Lessons.**

Categories	Individual A.		Team a.	
	%	SD	%	SD
<u>LEARNER INVOLVEMENT LEVEL</u>				
Interim	0.2	.38	1.4	2.49
Waiting	22.5	9.26	15.4	8.07
Off Task	7.2	4.36	7.5	5.26
On Task	20.0	4.49	19.3	.33
Cognitive	19.6	4.82	21.9	6.16
<i>Not motor Engaged (total)</i>	69.5	7.29	65.5	7.63
Motor Appropriate	18.1	4.44	21.6	.33
Motor Inappropriate	11.6	5.07	10.9	5.34
Supporting	0.9	1.27	1.9	33.65
<i>Motor Engaged(total)</i>	30.6	7.28	34.4	7.10
Total Learner Involvement Level	100		100	

Figure 10: Comparison of AL-T-PE Context level categories for individual and team activity lessons

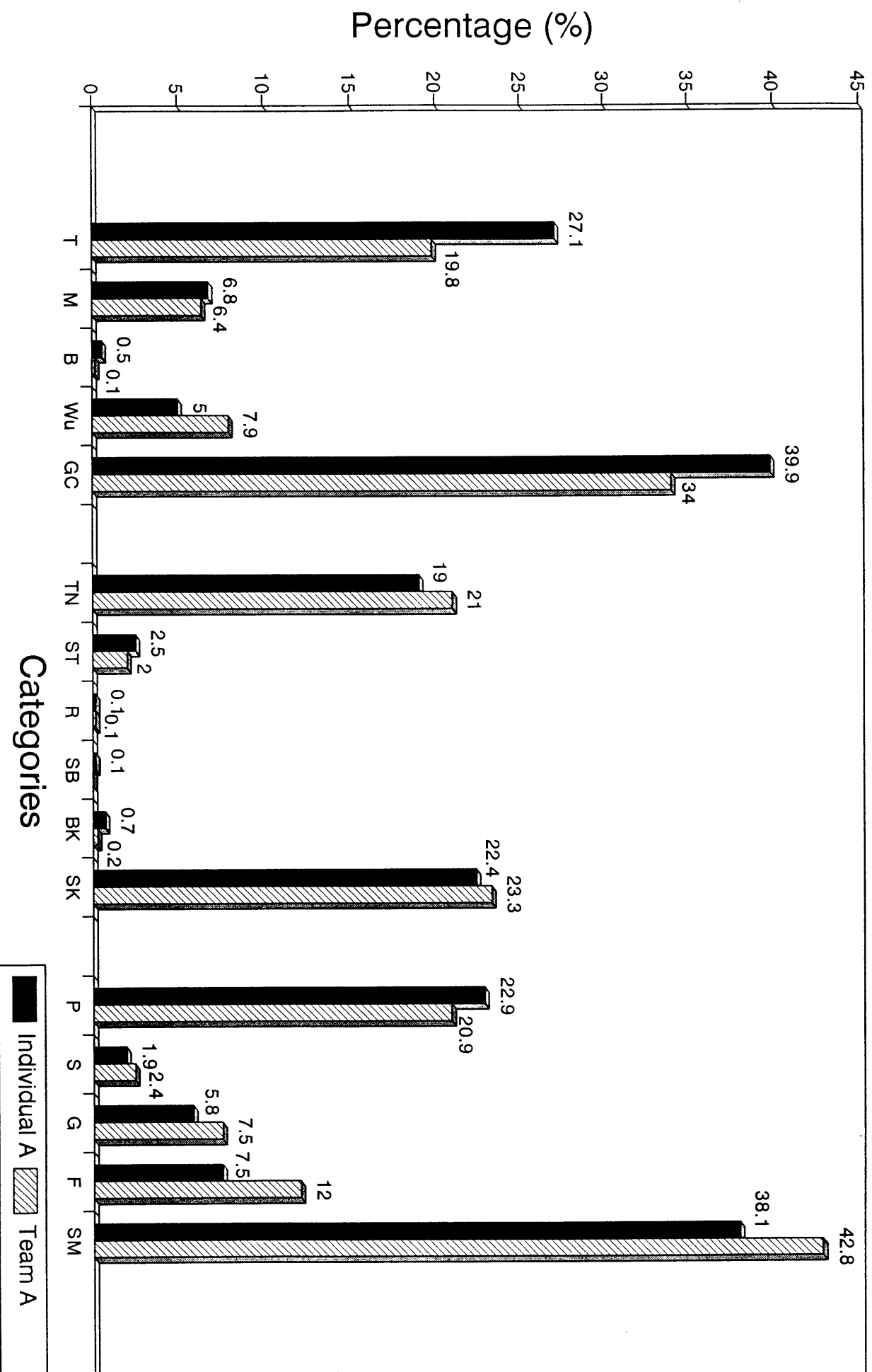
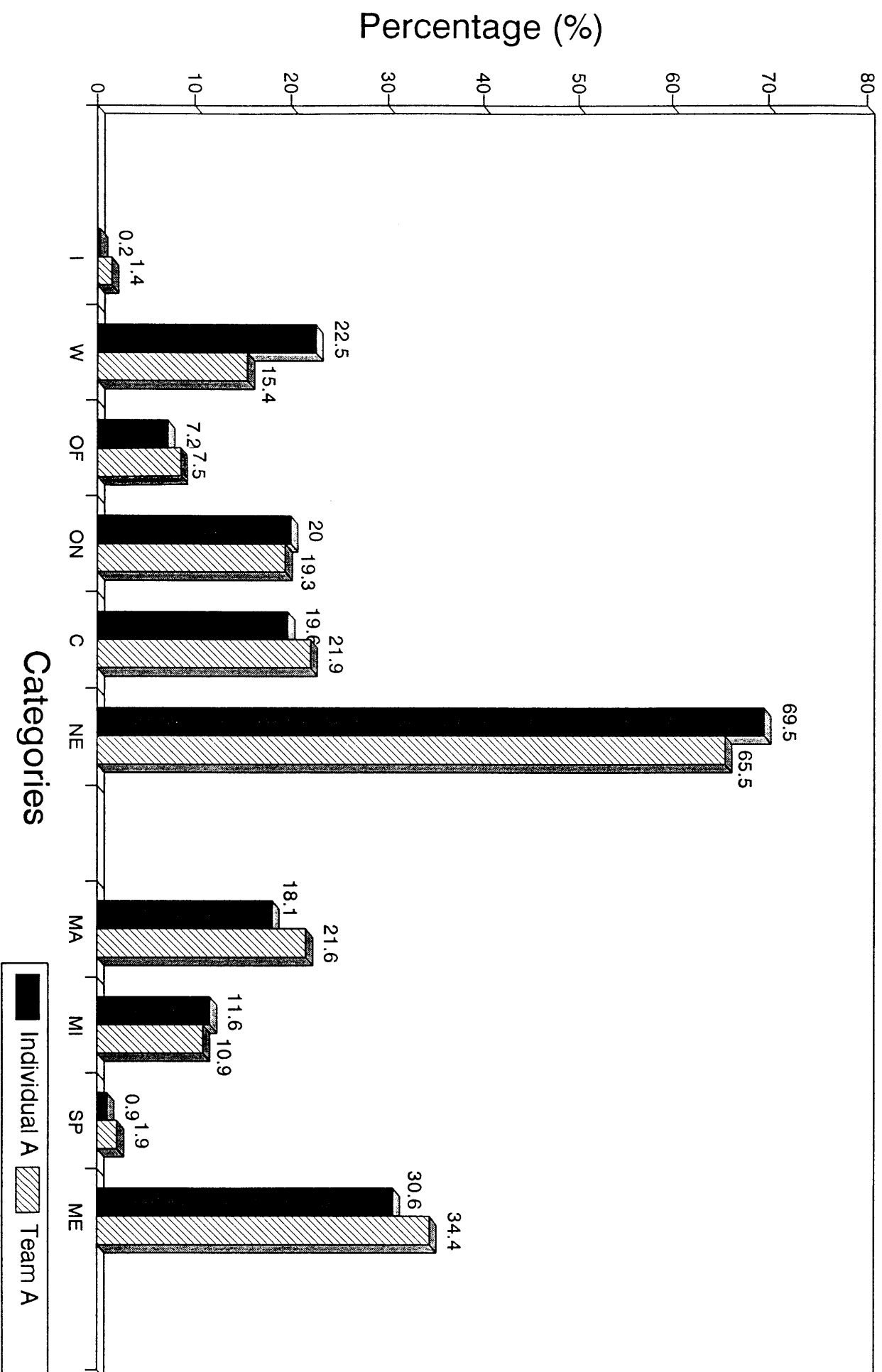


Figure 11: Comparison of ALT-PE learner involvement level categories for individual and team activity lessons



4.2- DIFFERENCES IN ALT-PE

It was necessary to determine the significance of descriptive differences reported previously. A t-test was considered to be appropriate for this purpose. In order to avoid repetition, only those subcategories of the ALT-PE system which contained sufficient data were included in these analyses.

4.2.1- GENDER AND ALT-PE

A t-test was computed on the mean scores of ALT-PE categories to determine significant levels between Bahraini male and female teachers at primary schools and the results are set out in Table 13.

Examining the general content first, this division identified periods of time when students were not expected to be involved in the motor skill element of physical activity. This largely involved the managerial and organizational time of students and equipment. No significant differences were reported for the transition and management categories. A significant difference ($p < .05$) was found for warm up activity in which the Bahraini male teachers spent significantly more time than the female teachers in the study ($t = 1.99, p < .05$).

Clearly the input of subject matter knowledge is an essential element of any teaching-learning process. Two out of five categories were mainly

employed in this division. As can be seen from Table 13, there was significant difference between Bahraini male and female teachers in the strategy category ($t = -3.62, p < .001$) with female teachers spending more time than male teachers.

In the subject matter motor division, the male and female teachers were not significantly different in the way in which they conducted their practice of technique outside the implemented context. Neither did they differ in the time devoted to game play and scrimmage/routine subcategories. Therefore, despite the many different lessons observed in the study, male and female teachers did not differ in the amount of time that they devoted to the subject matter motor category. These results give some support to the belief that male and female teachers provide slightly similar time regarding the context level.

As can be seen from the results of the learner involvement level in Table 13, two out of four categories revealed no significant difference in the amount of time students devoted to waiting, on-task, cognitive, and motor appropriate behaviours regardless of whether they were taught by male or female teachers. The only category which did show a significant difference was in the motor inappropriate subcategory ($t = -4.26, p < .001$). Students taught by female teachers spent more time in this category than students taught by male teachers.

When the categories in the motor engaged section were combined, a significant difference was revealed. The students taught by male teachers spent more time not motor engaged behaviour than did students taught by female teachers ($t= 2.01$, $p<.05$). On the other hand, a significant difference was found between male and female teachers for the motor engaged section ($t= -2.30$, $p<.01$) with female teachers spending more time than male teachers. The findings that there was no significant difference in ALT-PE across gender groups is well supported by other studies outside Bahrain (Shute et al., 1982). Thus the gender of the Bahraini teachers at primary school did not appear to be an important variable in relation to the nature of the students' engagement in physical education lessons.

TABLE 13. A t-test on Mean Score of ALT-PE Categories for Male and Female Teachers.

Categories	Male	Female	F	P
<u>CONTEXT LEVEL</u>				
Transition	22.3	24.5	- .95	N.S.
Management	5.6	7.1	-1.15	N.S.
Warm-Up	7.7	5.5	1.99	<.05
<i>General Content</i>	35.4	37.7	-1.01	N.S.
Technique	20.0	19.8	- .06	N.S.
Strategy	0.9	3.7	3.62	<.001
<i>Subject Matter Knowledge</i>	21.7	24	- .99	N.S.
Skill Practice	22.2	21.4	.27	N.S.
Scrimmage/Routine	1.3	3.1	-1.90	N.S.
Game	8.4	6.5	.22	N.S.
<i>Subject Matter Motor</i>	43.9	38.7	1.81	N.S.
<u>LEARNER I. LEVEL</u>				
Waiting	19.9	19.9	- .15	N.S.
On Task	20	19.2	0.58	N.S.
Cognitive	21.2	20.5	- .35	N.S.
<i>Not motor Engaged</i>	70.7	65.5	2.01	N.S.
Motor Appropriate	20.1	19.9	0.12	N.S.
Motor Inappropriate	7.8	13.7	-4.26	<.001
<i>or Engaged</i>	29.6	34.6	-2.30	<.01

4.2.2- TEACHER QUALIFICATIONS AND ALT-PE

A t-test was computed between the mean scores of the ALT-PE categories coded for BPE and DPE teachers and the level of significance together with the mean scores are set out in Table 14.

The results for the general content category showed no significant difference between the two teacher qualifications for management and warm-up behaviours. However, a significant difference was found between the two groups for transitional activities, ($t = -3.86$, $p < .001$). The BPE teachers had the lowest mean score and were significantly different from the DPE teachers. Thus the managerial and organizational efficiency of the BPE teachers was superior to that of the DPE teachers. The general content section also displayed a significance ($t = -3.01$, $p < .05$) between BPE and DPE teachers, with the BPE teachers spending significantly less time than DPE teachers in this study.

In the subject matter knowledge section, there were no significant difference between BPE and DPE teachers in the time devoted to strategy behaviour. A similar pattern of information concerning plans of action for performing either individually or as a group were apparent in all the lessons taught by the two teacher qualifications. Time devoted to transmitting information concerning the physical form of motor skills relating to instruction showed a significant difference ($t = 2.23$, $p < .01$). The BPE teachers had a

mean score ($M = 22$) which was significantly different from DPE teachers ($M = 17$). In summarise, BPE and DPE teachers both appeared to devote similar amount of time to the input of subject matter knowledge during physical education lessons.

In the subject matter motor section, there were no significant differences between the two groups in skill practice and scrimmage/routine, but significance was reached ($p < .05$) in the game play and ($p < .05$) fitness categories. In the fitness category, students taught by BPE teachers allocated significantly more time to this activity than students taught by DPE teachers. Thus, BPE teachers' lessons had the greatest overall fitness development. Game playing in which there was no feedback and instruction from the teachers showed a significant difference as well ($p < .05$) with the students taught by DPE teachers spending more time in this category than students taught by BPE teachers.

Regarding the learner involvement division, three out of five categories were not significant. The two categories which were statistically significant were the waiting and motor appropriate categories. In the waiting category, a significant difference was found ($t = -4.92$, $p < .001$) between the two groups. It can be seen that the DPE teachers spent a greater deal of time in waiting activities compared to the BPE teachers. The motor appropriate category revealed that students taught by BPE teachers have the highest mean score which appeared to be significantly different from the students taught by DPE

teachers in the study ($t= 5.53$, $p<.001$). Therefore, the amount of time spent practising motor appropriate activities by students taught by BPE teachers was superior to those taught by DPE teachers.

When the categories in the learner involvement level were combined, a significant difference was revealed, In the not motor engaged section DPE teachers had a significantly higher recording ($p<.001$) and the DPE teachers were obviously spending larger periods of time in this section. A significant difference was also found between the two teacher qualifications for the motor engaged section. BPE teachers had a higher mean scores and were significantly different. The fact that this section produced statistical significance was attributed to the great amount of motor appropriate activities in BPE teacher lessons.

TABLE 14. A t-test on Mean Score of ALT-PE Categories for BPE, and DPE Teachers.

Categories	BPE	DPE	F	P
<u>CONTEXT LEVEL</u>				
Transition	19.4	27.3	-3.86	<.001
Management	6.8	6.4	0.36	N.S.
Warm-Up	6.1	6.1	0.95	N.S.
<i>General Content</i>	32.6	40.1	-3.01	<.05
Technique	22.1	17.9	3.32	<.01
Strategy	2	2.7	-1.28	N.S.
Rule	0.2	0.0	.96	N.S.
<i>Subject Matter Knowledge</i>	24.5	21.3	1.27	N.S.
Skill Practice	22.8	21.3	.48	N.S.
Scrimmage/Routine	2.6	1.6	1.02	N.S.
Game	4.1	9.4	-2.22	<.05
Fitness	13.4	6.5	3.10	<.05
<i>Subject Matter Motor</i>	42.9	38.8	1.65	N.S.
<u>LEARNER I. LEVEL</u>				
Waiting	13.9	24.9	-4.92	<.001
On Task	19.6	19.6	.03	N.S.
Cognitive	22.6	19.4	1.61	N.S.
<i>Not motor Engaged</i>	63.9	71.3	-4.01	<.001
Motor Appropriate	23.8	16	5.53	<.001
Motor Inappropriate	10.5	10.5	-.42	N.S.
<i>Motor Engaged</i>	36.1	28.5	3.99	<.001

4.2.3- SUBJECT MATTER AND ALT-PE

A summary data of the mean score and the significant level for the ALT-PE categories for individual and team activity lessons is shown in Table 15.

The results for the individual and team activity lessons displayed a very similar figure to the analysis in the sample, in that the distribution of the time in the six categories (management, technique, strategy, rule, skill practice and game play) was not significantly different. However, the time distribution in the two categories (transition and warm up) was statistically significant at a higher level.

Within the general content, a significant difference was found between individual and team activity lessons for the transitional ($p < .001$) and warm up ($p < .01$) categories. The transition category revealed team activity lessons to have a lower mean score and to be significantly different from individual activity lessons. Therefore, teachers of individual activities spent a great deal of time in managerial and organizational behaviours than the teachers of team activities. No significant differences were found in the management category. The score for the general content section was also significant.

As can be seen from the summary data in Table 15, none of the categories in the subject matter knowledge division revealed significant

differences. Both individual and team activity lessons devoted a similar amount of time to the technique, strategy and rule categories.

Statistical analysis revealed that the teachers of individual activity lessons were not significant in the way in which they conducted their practice outside the implement context. No significant difference was also found for the game category. Only when the categories in the subject matter motor section were combined, a significant difference was revealed ($p < .05$). Team activity lesson had greater overall motor involvement.

At the learner involvement level, each category was analyzed by means of a t-test and the results are set out in Table 15. As can be seen from the results, there were no significant differences in the amount of time students devoted to the on-task, cognitive, and motor inappropriate categories regardless of whether they taught individual or team activities. This suggest that students spent equal amounts of time in these three categories. The only two categories which did show significant differences were waiting ($p < .05$) and motor appropriate ($p < .05$). For the waiting category, the lower percentages were found in team activity lessons and the higher percentage in individual activity lessons. This suggests that the teachers of team activity lessons had been so efficient in involving students in such activities that they did not need to wait for so long. At the motor appropriate category, a significant difference was found between the mean score of individual and team activity lessons. The students in team activities lessons spent more time

in practising tasks than those at appropriate levels of difficulty (motor appropriate). Thus, the result was supporting the notion that the nature of the lesson content might differentially influence affect student motor appropriate level or ALT-PE score.

TABLE 15. A t-test on Mean Score of ALT-PE Categories for Individual and Team Activities Lessons.

Categories	Indivi.	Team	F	P
<u>CONTEXT LEVEL</u>				
Transition	27.1	19.8	-3.8	<.001
Management	6.8	6.4	-.26	N.S.
Warm-Up	5.0	7.9	2.83	<.01
<i>General Content</i>	39.9	34.0	-2.26	<.01
Technique	19.0	21.0	.48	N.S.
Strategy	2.5	2.0	-.55	N.S.
Rule	0.1	0.1	-.56	N.S.
<i>Subject Matter Knowledge</i>	22.4	23.3	.04	N.S.
Skill Practice	22.9	20.9	-1.97	<.05
Game	5.8	7.5	.68	N.S.
<i>Subject Matter Motor</i>	38.1	42.8	2.26	<.05
<u>LEARNER I. LEVEL</u>				
Waiting	22.5	15.4	-1.97	<.05
On Task	20.0	19.3	-.54	N.S.
Cognitive	19.6	21.9	1.30	N.S.
<i>Not motor Engaged</i>	69.5	65.5	-1.29	N.S.
Motor Appropriate	18.1	21.6	2.05	<.05
Motor Inappropriate	11.6	10.9	-.92	N.S.
<i>Motor Engaged</i>	30.6	34.4	1.16	N.S.

CHAPTER - 5 -

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1- Discussion

5.2- Conclusion

5.3- Recommendations and Future Directions

5.1- DISCUSSION

This study was an initial effort to investigate how time is spent in physical education lessons in primary schools in Bahrain. Although the academic learning time concept has become increasingly prevalent in many countries around the world, there is very little research utilizing systematic observation, specifically ALT-PE, to determine the amount of time students spend working directly in motor activity at an appropriate success rate.

Discussion of the data analyses from this study brings us back to the main purpose under investigation, which was how do the Bahraini students spend their time in the PE lesson? The ALT-PE data indicated that the amount of successful movement time engaged in appropriate instructional tasks provide for primary school students in Bahrain is far less than commonly imagined and physical education lessons appear to be characterized by much longer periods of not motor engaged activity (about 70%) rather than motor engaged.

From the analysis of the forty lessons taught by male and female teachers in this study, only about 8-19% of all lesson time can be reviewed as contributing to learning outcome (ALT-PE score). This means that no more than 8 to 10 minutes per student per 45-50 minute lesson are recorded for ALT-PE. Primary school students in Bahrain spent a striking amount of their lesson time in nonfunctional activities -behaviour not likely to lead towards

the intended learning outcome. As a group, physical education students were more likely to be waiting, listening, in management, in transition, and performing unplanned tasks in lesson than to be in skill practice exercise, motor engagement, and motor appropriate activities.

It is clear from the results presented so far that Bahraini teachers spend a considerable proportion of their time organizing students and getting the environment and equipment ready for the lesson. Whilst recognizing the importance of efficient organization on increasing the level of ALT-PE, some teachers, especially those graduated from the University of Bahrain, appear to be more effective in this aspect. It seems reasonable that because those teachers were more familiar with the concept of ALT-PE than were the other teachers, they would spend much less time in transition category.

Teachers can expect to spend some time engaged in transitional and managerial behaviours in physical education lessons in general. In particular, the management and organisation of students and equipment affects the level of student academic learning time. From the observation of lessons studied no obvious strategies for reducing this time were observed by the teachers. In this study, the favoured form of organisation which allows the students to spend more time in management behaviour was where the whole class worked in groups of a large size with little equipment. This form of organisation tend to increase the amount of waiting time. Thus, the way activities were organized in physical education lessons taught by primary school teachers in

Bahrain provided long periods of waiting time. This is one example from the study; student were organised into groups of nine. They were to practice basketball shooting skills. There was only one ball available for each group of nine students. The students took 20 second to shoot three shots and recover the ball. That means that each student in the group had to stand in line for nearly 3 minutes before they received a turn. The drill continued for 15 minutes and each student received only a little more than 1.5 minutes of ALT-PE.

It is possible to cut down the amount of inactive time in lessons by developing good management skills such as routines. In this study, the lessons in which students had a higher ALT-PE rate, teachers had implemented classroom rules and instructional routines. Thus, establishing such routines does appear to be one of the keys to reducing managerial and transitional time in lessons and in turn increasing the time students may spend in leaning.

Most of the primary school teachers in Bahrain spent more time dealing with off-task activities. One way to reduced off-task time and devoted much of lesson time to actual learning is to place the equipment in many locations around the play area. In fact, having distribute the equipment may be high effective in term of time than having the students pick up their own equipment from one area. Teachers in the present study appeared to start lessons slowly, place the equipment in one area, and use large sized groups. Grouping is a variable that is used to describe whether the students spend

their time waiting or not. Thus, in order to allocate most of the lesson time to motor activity, primary physical education teachers need to use small sized groups than large sizes groups and place the equipment in many areas rather than in one area.

From the results of this study it appears that teachers in Bahrain schools are likely to plan and monitor lesson events or activities, not attending to how each student goes through the lesson or how each student spends her/his time during the lesson. It also appears that some teachers may not acquire skills which consistently produce a high rate of ALT-PE. They may not have been taught how to structure and implement lessons to ensure high level of appropriate participation. In addition, one explanation for what seems to be a limited amount of motor appropriate engaged behaviour in this study may be the fact that the content of the primary physical education curriculum allocated only 40% of the total lesson time for skill practice.

Research shows that an effective teacher presents information clearly in a way that increases academic learning time. The concept of clarity simply means that instructions, demonstrations, and discussions are not only clear to the student but also take less time because of their clarity. From our observation it appeared that teachers talked a lot and spent more time in unnecessary conversation. Time spent in cognitive behaviour (students receiving information) does not necessarily mean more student involvement in the learning tasks. Thus, the importing of information, although obviously

necessary, does not seem to contribute to learning outcome and student ALT-PE. Clearly, much of the time spent on cognitive behaviour in PE lessons in Bahrain should be shifted to more practice time.

The findings of this study appear to support other ALT-PE studies in which physical education students accumulated much more cognitive behaviour time than motor appropriate time. Most of the cognitive activity in all the lessons in this study, was the teacher instructing the entire class or a group (instruction about how to organize or watching a demonstration) and explaining the tasks.

Although the primary physical education teachers in Bahrain allocate a percentage of their lesson time for skill practice, discussion held in this part of the study indicated that the activities selected and the way in which they were organized and managed by the teachers provided low ALT-PE. This was the case. Many teachers failed to devote large percentages of time to motor appropriate behaviour. Perhaps they did not fully understand the concept of ALT-PE. Perhaps they were not conscious of either the effects of the lesson structure or lesson momentum on ALT-PE. Whatever the reason, it is clear now that physical education teachers in Bahrain should pay more attention to the amount of time students spend working directly on meaningful learning tasks (ALT-PE).

The data analyses from this study, being to supply accurate evidence of the teaching behaviour of male and female teachers in Bahrain. The first question addressed here was that of the difference in ALT-PE for students taught by male teachers against those taught by female teachers. The findings suggest that no significant difference existed in the ALT-PE provided for students taught by male and female teachers during PE lessons (The only exceptions of these were in warm up and motor inappropriate behaviours). Although the student of female teachers spent more of their lesson time in transition and management activities than the students of male teachers, the gender of the teacher did not seem to make a noticeable difference in terms of student learning time and ALT-PE score. Thus Bahraini male and female teachers appeared to adopt similar teaching approaches and behaviours which in turn led to similar levels of student ALT-PE. The findings of this study were similar to the finding of Godbout et al. (1983) and Placek et al. (1982) who found that male and female teachers devoted similar amount of engagement time. While Silverman et al. (1984) reported differences in the amount of ALT-PE accrued by male and female students.

As much of the lesson time was used in management and transition activities by female teachers, it was reasonable to suggest that male teachers were more effective in class management and student transition than were female teachers; the instruction was designed so that male students spent less time in these two behaviours.

Finally, it should be noted that despite a little difference between male and female lessons, the findings suggested that students had equal amount of time in physical education lesson in which to practice motor skills regardless of the sex of the teacher.

The second question examined in this study, namely the difference between teacher qualification and ALT-PE categories. The ALT-PE data indicated that teacher qualification has an impact on transition, technique, game, waiting and on student opportunity to learn (motor appropriate). Student learning can be enhanced when a teacher carefully designs instruction on order to provide the maximum amount of student engaged time. The BPE teachers were more efficient in class management and student transition than were the DPE teachers. From the observation, DPE teachers did not hurry to start lesson instruction; they spent time in taking roll and in general discussion. When students were in transition, such as changing sides, the DPE teachers observed the students without comment as they casually strolled about. This casual approach to efficiency and management on the part of the DPE teachers undoubtedly contributed to the greater amount of waiting behaviour by students. In addition, the way the activities organized by DPE teachers increased the amount of waiting time. For example, DPE teachers most often selected large sided team game (football, basketball) in which only a few students were participated while the rest were waiting for the ball to come. BPE, on the other hand, were more likely to choose individualized activities or to organize activities in stations to increase the percent of active

time and to decrease the percent of waiting time. Although BPE teachers engaged in a greater percentage of time directing and explaining information than did DPE teachers, their students were still more active because of the class organization they employed.

From the findings of this study it seems that BPE teachers' Knowledge about the range of student activities encountered and their own ability to generate and select alternative activities contribute to their capacity for keeping students focused on motor appropriate activity.

The DPE teachers' lessons were judged to contain more game play activities. In DPE teachers' lessons, though, the teachers organized the students in teams to play "real game", thus giving the students fewer opportunities to practice motor appropriate. Since ALT-PE data indicate severely limited opportunities to practice in a game situation, the data revealed that DPE teachers were not effective in providing their students with opportunities to practice motor appropriate tasks (ALT-PE score). Thus students of BPE teachers were more likely to participate in activities designed to develop specific skills rather than participating in games in which teachers' do not intervene or give feedback designed to help the students learn.

The BPE teachers in this study exhibited significantly higher levels of motor appropriate behaviour (ALT-PE) than did DPE teachers. Motor activity in the BPE teachers was more appropriate and appeared to contribute to the

achievement of the instructional objective. If, as Siedentop (1983), suggests, the ALT-PE reflects the teacher and teaching effectiveness, Bahraini BPE teachers are more effective than DPE teachers.

In this study, the difference revealed by the ALT-PE data substantiated the concern of research that teacher qualification may have an impact on the amount of time the students spend working directly on meaningful learning tasks (ALT-PE).

The third question addressed in this study was of the differences between individual and team activities for ALT-PE. Analysis of the ALT-PE data would suggest that time spent in ALT-PE categories can be influenced by subject matter being taught. This means that not all ALT-PE rate are the same for all activities. Teachers of individual activity lessons spent significantly more time in organisational behaviour and in management equipment than did teachers of team activities. This was probably due to the fact that placing and getting the gymnastic apparatus in individual activity lessons often required a great deal of time. Thus, it appears that ,collectively, the factors of reduced management organization time led to increases in ALT-PE.

Instructional time was typically high in both lessons. This is because a similar pattern of traditional individual and team activity instruction appeared in primary physical education lessons in Bahrain. This involved giving the students information about the technique and strategies of the activity and

then putting them into practice. Generally, instruction time was high at the start of a unit in both lessons and low toward the end of a unit, when students were more likely to be engaged in culminating activities.

The findings from this investigation suggest that students in individual activity lessons had fewer opportunities to actively participate during practices than the students in team activity lessons. Much of this difference was accounted for by the time these students in individual activity lessons spent waiting. The high percentage of waiting behaviour seemed to be related to the many equipment used by the teachers of individual activity lessons. During the time the students in team activity lessons were involved, they experienced greater success performing team activity skills and accrued more ALT-PE than the students in individual lessons. If teachers of individual activity lessons want to increase the amount of ALT-PE, they should cut down on the time spent getting the environment and equipment ready for the lessons. They should also reduce the time students spent waiting to participate or waiting for next event to occur.

In congruence with the findings of other ALT-PE studies (Placek et al., 1982; Metzler, 1989), the results of the present study do not support the theory that the students in individual activity lessons should show greater amount of ALT-PE than students in team activity lessons. In fact, the results indicated that students in team activity lessons spent greater amount of lesson time in motor appropriate activity (ALT-PE) than students in individual

activity lessons.

Thus, there is little doubt that ALT-PE will range according to the nature of activity being taught. Lessons involving high quality individual work such as in gymnastic and athletic activities will obviously have a lower work rate commitment than an activity in game lessons. In this study it was not surprising that a higher percentage of time was spent in the motor appropriate category for team activity lessons than individual activity lessons because of the different organisational and equipment requirement.

The evidence provided by this study indicated that ALT-PE might be influenced by factors such as the nature of activities taught. It is perhaps time to design a careful study in order to determine relative effects of the variable which were shown in this investigation to influence ALT-PE.

5.2- CONCLUSION

The analysis of academic learning time described in this study provides a way to making visible judgements about how time is spent in physical education lessons. Many of the physical education teachers in primary schools in Bahrain were not aware that the students in PE lessons spent only limited amounts of time directly engaged with the motor skills, irrespective of success rate, for those periods. However, providing students with the opportunity to learn and keeping them involved in appropriate learning behaviour is an important characteristic of teaching effectiveness in physical education.

The main purpose of this study was to examine how time is spent in physical education lessons in primary schools in Bahrain. The results showed that the teachers allocated less than one-fifth of the available lesson time for student participation in motor activities directly related to the subject matter being taught which reflect the amount of ALT-PE. Students spent more than half of their time in non-motor- activity such as waiting for the next portion of lesson to begin, organizing equipment, and listening to the teachers. The findings also indicated that when students were engaged, they spent more time in cognitive and on-task engagement than in motor responding.

Comparison analysis across teacher sex has shown that there were no significant differences in the amount of ALT-PE rate for primary school students in physical education lessons taught by male teachers against those

taught by female teachers from the data collected through the ALT-PE instrument. The results of the study suggested that although the amount of academic learning time in physical education was similar, the proportion of time spent in each category of ALT-PE differed. These results give strong support to the notion that male and female teachers provide similar amounts of ALT-PE.

The analysis of the comparison across teacher qualification has shown that physical education teachers who hold BPE degrees produce more amount of motor engagement time than physical education teachers who hold DPE degrees. Additionally, these teachers selected activities and organized the physical education environment in a way that created a higher level of ALT-PE for the students. Thus, if one accepts Berliner's (1979) premise that there is a clear link between academic learning time and students achievement, teacher qualification may well play an important role in increasing student ALT-PE.

Analysis of the ALT-PE data of this study would suggest that time spent in ALT-PE categories can be influenced by the subject matter of the lesson. Statistical analysis revealed that teachers of team activity lessons spent more time practising tasks those at an appropriate level of difficulty, which reflected the amount of ALT-PE. This could largely be attributed to the time that was spent getting the equipment ready for the activities in individual lessons.

Academic Learning Time in Physical Education which enables coding to be made was considered to be a valid and reliable system with which to record and measure how time is spent in Physical education lessons. Data such as this would raise the Bahraini teachers understanding of their teaching strategies and behaviour. Also, information provided from ALT-PE would provide realistic and relevant evidence of teacher and teaching effectiveness in physical education.

As a research tool then, ALT-PE yields valuable data about how students are spending their time during physical education lessons. Since there was a stronger argument in support of the validity and reliability of the ALT-PE system, an acceptable level of reliability was achieved in this study and the results were considered to be a valid of student motor appropriate behaviour.

It should be pointed out that a major difficulty with this system is centred on the definition of the ALT-PE categories. To identify students who fall into some categories of ALT-PE at a specific time was felt to be quite difficult during the observation process. For instance, when the one of target students was sitting in front of the teacher listening to an explanation it was recorded as cognitive. The supposition being that the student was listening and involving in cognitive activities. However, if he was not paying attention and the information was beyond him then he should have been recorded as off-task. There was no way of knowing when and if the student was involved in cognitive or off-task behaviours. Also, some difficulty was felt over the

difference between motor appropriate and motor inappropriate behaviours. The definitions focused on the level of difficulty of the episodes. Therefore, motor appropriate behaviour refers to the time a student spends involving in motor skill at an easy level of difficulty. Anything that is too easy or too difficult should be coded as inappropriate. Without knowing the skill levels of each individual target student, it was not easy for the observer to judge the degree of the difficulty.

Since the ALT-PE observation system included multiple numbers of categories and the observer had to make a decision from a great number of choices, it was felt that the range of interval length needed to be increased. Thus, it was appropriate to employ 10-second observe, 10-second record interval coding system rather than six seconds for each interval. This observation format would enable the observer to look, listen and record without the risk of inaccuracy.

In review the methods used to establish the reliability of data recorded in a natural environment using interval techniques such as the ALT-PE instrument, Siedentop (1983) suggested that collecting the ALT-PE data by more than one observer was a positive strategy to ensure that the codings reached satisfactory levels of reliability. Thus, it would have been appropriate to have observed all lessons in this study with two or three observers instead of one.

Judgements about the amount of ALT-PE in primary schools in Bahrain were made by observing one lesson for each teacher in this study. It could be argued that this was not enough in which to judge the efficiency of physical education teachers and to investigate the amount of ALT-PE in primary schools. Observation of all teachers for two or three lessons would have been preferable, but with the lack of time in this study one lesson for each teacher was considered to be adequate.

Despite of all these reservations, it was felt that the ALT-PE data as well as the observation methods did give a more valid account of student behaviour. The ALT-PE instrument did reflect what was happening in primary physical education lessons in Bahrain and how students spent their time in Physical education lessons. It was felt to be appropriate to use the ALT-PE instrument in the future.

5.3- RECOMMENDATIONS AND FUTURE DIRECTIONS

This study has presented some descriptive data that moves beyond the functionalist approach of many studies in teaching physical education in the State of Bahrain. In the light of the results of the investigation reported in this study, the researcher would like to offer the following recommendations on teaching and observing physical education in Bahrain:

- The ALT-PE score should be used as a criteria for the assessment of physical education teachers in Bahrain schools. The whole idea of ALP-PE is to provide a high percentage of lesson time for motor appropriate physical activity. Thus it is recommended that the supervisors in the Division of Physical Education at the Department of Curriculum in the Ministry of Education should use the ALT-PE score to appraise the teachers and teaching.

- Since many of the primary teachers in Bahrain schools were not aware that the student spent only limited amounts of time directly engaged with the motor skills, PE teachers really need to understand the general idea of the academic learning time in physical education (ALT-PE). Therefore, consideration is needed to make the teachers familiar with the concept and benefits of the ALT-PE.

- The DPE at the Ministry of Education in Bahrain should precipitately qualify those primary PE teachers who do not have BPE qualifications. The results at this study indicated that the knowledge of instructional strategies implied by BPE teachers did seem to ensure optimal ALT-PE score.

- Until the DPE is able to qualify the primary PE teachers and to increase the number of BPE teachers in primary schools, extensive inservice physical education programmes with the new instruction strategy focus should be developed for DPE teachers in the primary schools.

- Since ALT is a relatively new research focus, particularly in physical education, most of the primary teachers are unaware of this research results or its importance. When they were informed of the purpose of the study at the conclusion of the observation, many teachers had not heard of Academic Learning Time concept. Therefore, the university or bodies in Bahrain in which provide or organize courses in professional preparation in physical education should consider the ALT-PE and the results of this study when planning their course.

- It is clear from the correlational and descriptive research that ALT-PE (motor appropriate) is a necessary predictor of student achievement (Silverman et al., 1991). Thus the supervisors at the Division of Physical Education who supervise PE teachers should encourage the teachers during their supervision process to concentrate on increasing the amount of time that

students spend directly involved in physical activity. Without adequate time in the PE lesson, the contribution of physical education programmes to the students is likely to be inconsequential. Students need not to obtain all the activity during lessons, but it should be the teacher's objective to involve students in active learning time for as much of period as possible in bouts of moderate length.

- As a results of this study it appears that teachers organisation of students and equipment may affect learning opportunities (ALT-PE) more than any other single teacher related variable. Teachers must be able to organize and manage lesson time to provide for maximum opportunity for student to learn an appropriate activity.

- The results of this study suggest that supervisor preparation programmes and curriculum packages should include the methodology of ALT-PE system and training in the coding procedures of this system.

- As a result of this study, if we like to increase the rate of ALT-PE in primary physical education lessons in Bahrain, perhaps steps should be taken to review the content of the primary school physical education curriculum and to examine the quality of physical education teachers.

- Since the grade level of students could possibly affect the academic learning time for student, it may need to be studied in future ALT-PE

research.

- Further studies are needed to determine the effects of adaptations and more use of different teaching styles on increasing the percentage of ALT-PE and student achievement. Also, studying should continue in order to identify ALT-PE across different lessons with different activities taught by the same teacher, and in lessons of the same activity taught by different teachers.

- Finally, we need to know why it is that Bahraini physical education teachers as group are such inefficient time managers. Is it a low priority of them? Are they unaware of how time is consumed? Or, do physical education teachers lack the training and skill to use it to student's best advantage consistently? All good questions to which in Bahrain we do not have sufficient information to be able to give a definitive answer.

This study was the initial attempt to study how time is spent in primary physical education lessons in Bahrain. Given the limited data base, there is need for continued researched in this area. Such positive data would certainly provide an motivation for researchers and authorities in their efforts to design strategies to help the Bahraini teachers increase ALT-PE in their lessons.

APPENDICES

APPENDIX -1-

THE SCHOOL EDUCATION SYSTEM IN BAHRAIN

School level	Year Cycle	Student Age
Primary	6	6(7)-12(13)
Intermediate	3	12(13)-15(16)
Secondary	3	15(16)-18(19)

PE CLASSES PER WEEK IN PRIMARY SCHOOL

Year	PE Per Week	Time Per Class
1 - 3	3	45-50 minutes
4 - 6	2	45-50 minutes

APPENDIX -2-

BREAKDOWN OF ACTIVITIES IN THE PRIMARY SCHOOL PROGRAMME

Class	M.E	Gm	Fb	Bb	Hb	Vb	A
1	B&G	B&G					
2	B&G	B&G					
3	B&G	B&G					
4		B&G	B	B&G	B&G	B&G	B&G
5		B&G	B	B&G	B&G	B&G	B&G
6		B&G	B	B&G	B&G	B&G	B&G

Key: M.E = movement education; Gm = gymnastic; Fb = football; Bb = basketball; Hb = handball; Vb = volleyball; A = athletic; B = boy; G = girl.

APPENDIX -3-

THE NATIONALITIES OF PRIMARY PE TEACHERS IN BAHRAIN

(1993 figure)

Nationalities	Male	Female	Total
Bahraini	62	49	111
Egyptian	17	67	84
Jordanian	-	1	1
Moroccan	-	1	1
Tunisian	-	1	1
Total	79	119	198

THE QUALIFICATION OF PRIMARY PE TEACHER (1993 figure)

Qualification	Male	Female	Total
Secondary School Graduate	16	8	24
D.PE.	25	37	62
B.PE.	31	67	98
Others	7	7	14
Total	79	119	198

APPENDIX -4-

ACADEMIC LEARNING TIME-PHYSICAL EDUCATION CATEGORY

DESCRIPTIONS

The ALT-PE interval recording instrument, as currently conceived, is a to level, hierarchical decision-making system. The first level of the system requires a decision on the context of the setting under observation. The second level involves observation of the individual learner's involvement. These two level defined as following.

CONTEXT LEVEL

The context level describes the context of the setting which specific individual student behaviour is occurring. This level is comprised of three subdivisions: general content, subject matter knowledge content, and subject matter motor content:

General Content: class time during which students are not intended to be involved in physical education activities.

Subject Matter Knowledge Content: class time when the primary focus is intended to be on knowledge related to physical education content.

Subject Matter Motor Content: class time when the primary focus is intended to be motor involvement in physical education activities.

Each of the three main sub-divisionis has categories which describe more specifically the nature of learner's involvement. These categories are defined as following:

General Content:

Transition (T). Time devoted to managerial and organizational activities related to instructional such as periods of change from one activity to another.

Management (M). Time devoted to class business that is unrelated to instructional activities.

Break (B). Time devoted to rest and discussion of issues unrelated to subject matter such as drunk water.

Warm-Up (WU). Time devoted to routine execution of physical activities whose purpose is to prepare the individual for engaging in further activity, but not designed to change the state of the individual on along term basis.

Subject Matter Knowledge Content:

Technique (TN). Time devoted to transmitting information concerning the physical form of a motor skill.

Strategy (ST). Time devoted to transmitting information concerning plans of action for performing either individually or as a group.

Rules (R). Time devoted to transmitting information about regulations that govern activity related to subject matter.

Social Behaviour (SB). Time devoted to transmitting information about appropriate and inappropriate ways of behaving within the context of the activity.

Background (BK). Time devoted to transmitting information about subject matter activities such as its history, traditions, or relationship to fitness.

Subject Matter Motor Content:

Skill Practice (P). Time devoted to practice of skills or chains of skills outside the applied context with primary goal of skill development.

Scrimmage/Routine (S). Time devoted to refinement and extension of skills in an applied setting (i.e., in a setting is like or simulates the setting in which the skill is actually used) and during which there is frequent instruction and feedback for the participation.

Game (G). Time devoted to application of skill in game or competitive setting when the participants perform with intervention from the teacher.

Fitness (F). Time devoted to activities whose purpose is to alter the physical state of the individual in terms of strength, coordination, or cardiovascular

endurance

LEARNER INVOLVEMENT LEVEL:

The learner involvement level describe how individual learners are involved in the physical education setting described in the context level. There are two major sub-divisions at the learner involvement level: not motor engaged and motor engaged.

Not Motor Engaged refers to all involvement other than motor involvement with activities

Motor Engaged refers to motor involvement with subject matter-oriented motor activities.

Each of two main sub-division has categories which describe specific behaviours to be coded during each interval. These categories are defined as following:

Not Motor Engaged

Interim (I). The student is engaged in a non-instructional aspect of an ongoing activity such as retrieving balls, fixing equipment, retrieving arrows, or changing sides of a court in a tennis match.

Waiting (W). The student has completed a task and is awaiting the next instructions or opportunity to respond such as waiting in line for a turn, having arrived at an assigned space and waiting for the next teacher direction, standing on a sideline waiting to get into a game, or having organized into the appropriate formation and waiting for an activity to begin.

Off Task (OF). The student is either not engaged in an activity he or she should be engaged in or engaged in an activity other than one he or she should be engaged in -behaviour disruptions, misbehaviour, and general off-task behaviour such as talking when a teacher is explaining a skill, misusing equipment, fooling around, fighting, and disrupting a drill through inappropriate behaviour.

On Task (ON). The student is appropriately engaged in carrying out an assigned nonsubject-matter task (management, transition, or warm-up) such as moving into squads, helping to place equipment, counting off, doing warm-up exercises, and moving from the gym to a playing field.

Cognitive (C). The student is appropriately in a cognitive task such as listening to a teacher describe a game, listening to verbal instructions about how to organize, watching a demonstration, participating in a discussion, or watching a film.

Motor Engaged

Motor Appropriate (MA). The student is engaged in a subject motor activity in such a way as to produce a high degree of success.

Motor Inappropriate (MI). The student is engaged in a subject-matter oriented motor activity, but the activity-task is either too difficult for the individual's capabilities or so easy that practising it could not contribute to lesson goals.

Supporting (S). The student is engaged in a subject matter motor activity whose purpose is to assist others in learning or performing the activity such as spotting in gymnastic, feeding balls to hitter in a tennis lesson, throwing a volleyball to a partner who is practising set-up passing, or clapping a rhythm for a group of students practising a movement pattern.

APPENDIX -5-

Approval Litter from the DPE at the Ministry of Education to Conduct the
Study at Primary Schools in Bahrain

STATE OF BAHRAIN
MINISTRY OF EDUCATION



دولة البحرين
وزارة التربية والتعليم
ادارة التربية الرياضية
والكشفيه والخدمات الطلابية
قسم التربية الرياضية

التاريخ : ١٩٩٣/٩/٢٧

السادة الافاضل / مدراء ومديرات المدارس المحترمين

تحية طيبة وبعد ...

يقوم الباحث / فيصل حميد ملا مساعد البحث والتدريس بقسم
التربية الرياضية بجامعة البحرين باجراء بحث بهدف معرفة كيفية
استغلال زمن حصة التربية الرياضية وذلك ضمن متطلبات الحصول على درجة
الماجستير وسوف يقوم الباحث بزيارة الى مدرستكم لملاحظة عدد من حصص
التربية الرياضية .

برجاء التكرم وتسهيل مهمة ولكم وافرا الشكر والتقدير

مدير الادارة

اسم المدرسة : التاريخ :
 اسم المدرس : الجنس : المؤهل :
 المرحلة : نشاط الدرس :
 الملاحظ : زمن البدا : زمن الانتهاء :

[illegible]

المحتوى العام	النشاط المعرفي	النشاط الحركي
الانتقال (ت)	الامور الفنية (ف)	الممارسة العملية (ع)
التنظيم (ظ)	الامور الخطئية (خ)	ممارسة النشاط مع اعطاء التعليمات (ع/ت)
فترة راحة (د)	القانون (ق)	منافسات (م)
الاحماء (ح)	السلوك الاجتماعي (س)	تدريبات اللياقة البدنية (ق/ب)
	معلومات عامة (م/ع)	

غير مشارك في النشاط الحركي
 فترة سكون (ف/س)
 فترة انتظار (ف/ظ)
 غير مشترك في النشاط الاساسي (غ/س)
 مشترك في النشاط الاساسي (م/س)
 النشاط الادراكي (ك)

مشارك في النشاط الحركي
 الاشتراك بفعالية (ش/ع)
 الاشتراك بغير فعالية (غ/ع)
 الاشتراك بغرض السند (ش/س)

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APPENDIX -7-

A COMPLETE ALT-PE CODING SHEET

School: _____ Date: 20.10.1993
 Teacher: Mohammed Sex: M Qualification: BPE
 Class grade: 6 Class activity: Team Activity
 Observer: Faisal Time begin: 9:15 Time end: 10:00

C	M	-	T	-	B	Tn	Wn	-	-	-	T	F	T	Tn	M	A	-	-	-	Tn
LI	Of	-	on	-	Of	C	on	-	Of	on	on	MA	on	C	C	Mi	-	MA	-	C

C	M	-	T	B	Tn	Wn	-	-	-	-	T	A	Tn	F	-	Tn	B	A	Tn	-
LI	Of	-	on	Of	C	on	-	-	Of	on	-	MA	C	MA	-	C	Of	MA	C	-

C	M	-	T	B	T	Wn	-	-	-	T	Tn	A	-	Tn	-	A	-	-	-	-
LI	Of	-	on	Of	on	on	-	Of	-	on	C	Mi	-	C	-	Mi	MA	-	Mi	-

C	M	F	-	Tn	G	-	Wn	-	G	-	M	G	-	T	T	-	-	-	P	-
LI	C	MA	-	C	Mi	W	on	-	W	-	C	W	W	-	-	-	-	-	MA	-

C	Tn	F	T	Tn	G	Tn	Wn	Tn	G	-	-	-	M	-	T	-	-	T	-	-
LI	C	MA	on	C	W	C	on	C	W	-	-	-	on	-	-	-	-	W	-	-

C	Tn	Tn	P	T	P	T	-	-	Tn	-	T	G	-	-	-	Tn	G	-	-	T
LI	C	C	Mi	on	Mi	Of	W	-	C	-	Of	-	Mi	-	W	C	W	-	-	W

C	P	Tn	P	T	P	T	Tn	-	-	T	G	-	Tn	-	P	-	G	-	-	-
LI	MA	Of	MA	Of	Mi	on	C	-	-	on	W	-	C	-	MP	-	W	-	-	-

Context Level

General Content

Transition (T)
 Management (M)
 Break (B)
 Warm (Up)

Knowledge

Technique (TN)
 Strategy (ST)
 Rules (R)
 Social Behaviour (SB)
 Background (BK)

Motor

Skill Practice (P)
 Scrimmage/Routine (S)
 Game (G)
 Fitness (F)

Learner Involvement Level

Not Motor Engaged

Interim (I)
 Waiting (W)
 Off-task (Of)
 On-task (On)
 Cognitive (C)

Motor Engaged

Motor Appropriate (Ma)
 Motor Inappropriate (Mi)
 Supporting (S)

APPENDIX -8-

THE ALT-PE CODING SHEET (English Version)

School: _____ Date: _____
 Teacher: _____ Sex: _____ Qualification: _____
 Class grade: _____ Class activity: _____
 Observer: _____ Time begin: _____ Time end: _____

Context Level

General Content
 Transition (T)
 Management (M)
 Break (B)
 Warm (Up)

Knowledge
 Technique (TN)
 Strategy (ST)
 Rules (R)
 Social Behaviour (SB)
 Background (BK)

Motor
 Skill Practice (P)
 Scrimmage/Routine (S)
 Game (G)
 Fitness (F)

Learner Involvement Level

Not Motor Engaged

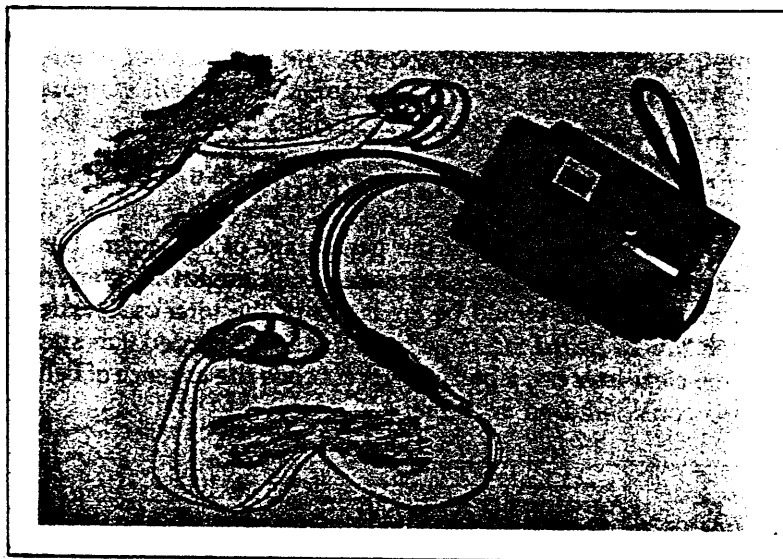
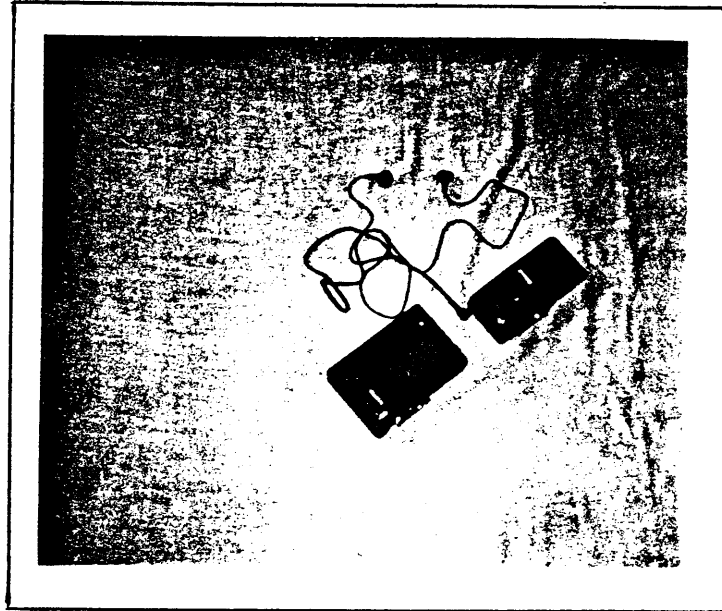
Interim (I)
 Waiting (W)
 Off-task (Of)
 On-task (On)
 Cognitive (C)

Motor Engaged

Motor Appropriate (Ma)
 Motor Inappropriate (Mi)
 Supporting (S)

APPENDIX -9-

THE AUDIOCASSETTE RECORDER



APPENDIX -10-

The Percentage of ALT-PE Categories for the Forty Lessons Taught by the Male and Female Teachers in the Study

T	1	2	3	4	5	6	7	8	9	10
S	M	M	M	M	M	M	M	M	M	M
Q	D	D	B	B	D	D	B	D	D	B
L	I	I	I	I	T	T	T	I	T	T
C.L.										
T	32.8	28.9	22.8	23.9	31.7	30.0	14.4	24.4	22.8	21.1
M	0.0	6.1	5.0	9.4	3.9	5.6	8.3	2.2	7.8	1.7
B	0.0	0.0	3.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WU	3.9	2.8	9.4	4.4	7.2	8.3	7.2	5.0	17.2	14.4
G.C.	36.7	37.8	37.2	37.8	37.2	43.9	28.3	31.7	47.8	30.6
TN	16.7	18.3	21.1	12.8	10.0	13.2	22.2	25.0	25.0	21.1
ST	0.6	0.6	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0
R	0.0	0.0	2.2	0.0	0.0	0.0	0.6	0.0	0.0	0.0
SB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BK	0.0	0.0	0.0	2.2	1.7	0.0	0.0	10.0	0.0	0.0
S.K.	17.2	18.9	23.3	15.0	11.7	13.3	23.9	36.7	25.0	21.1
P	46.1	23.9	10.	23.3	13.3	18.3	16.7	22.2	17.8	22.2
S	0.0	0.0	0.0	3.9	0.0	0.0	4.4	1.7	0.0	0.0
G	0.0	2.8	19.4	0.0	23.3	13.9	11.1	0.0	8.3	9.4
F	0.0	16.7	10.	20.	14.4	12.2	13.9	7.8	1.1	16.7
S.M.	46.1	43.3	39.4	47.2	51.1	42.8	43.3	31.7	27.2	48.3
L.L.										
I	0.0	0.0	0.0	0.0	1.1	0.0	11.1	1.1	0.0	0.0
W	44.4	31.1	16.1	20.8	20.7	20.2	1.7	34.8	30.2	3.9
OF	5.6	3.9	10.7	10.5	10.2	11.3	6.7	1.7	8.9	20.8
ON	16.1	19.4	21.1	24.1	23.6	15.7	14.8	14.4	20.8	24.7
C	16.7	18.3	23.4	15.	11.1	22.8	27.4	31.	23.6	17.3
N.E.	82.8	72.8	71.7	70.6	66.7	70.0	61.7	83.4	83.4	66.7
MA	16.1	15.0	21.1	21.7	16.7	20.6	29.4	10.4	12.7	30.0
MI	1.1	9.4	8.3	7.8	16.7	7.7	8.9	5.0	3.9	2.7
SP	0.0	2.8	0.0	0.0	0.0	1.7	0.0	1.1	0.0	0.0
M.E.	17.2	27.2	29.4	29.4	33.3	30.0	38.3	16.6	16.6	33.3

T	11	12	13	14	15	16	17	18	19	20
S	M	M	M	M	M	M	M	M	M	F
Q	B	B	B	B	D	B	D	D	D	D
L	T	T	T	T	T	T	T	T	I	T
C.L.										
T	17.8	21.1	17.2	10.0	28.9	8.9	35.6	18.3	21.1	32.2
M	2.2	1.7	1.7	1.1	10.6	13.3	0.0	11.1	10.6	8.3
B	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WU	12.2	3.9	12.8	9.4	3.3	10.6	7.2	5.0	6.1	0.0
G.C.	32.3	26.7	31.7	20.6	42.8	32.8	42.8	34.4	37.7	40.6
TN	26.7	15.6	23.3	33.9	15.0	20.0	20.0	22.2	25.6	27.2
ST	0.6	1.7	3.3	3.3	1.7	1.7	1.1	0.0	1.7	1.7
R	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S.K.	27.2	17.2	26.7	37.2	16.7	21.7	21.1	22.2	27.2	28.9
P	30.6	31.7	18.9	23.3	14.4	27.2	13.9	26.1	26.7	26.7
S	0.0	0.0	9.4	0.0	0.0	0.0	0.0	2.2	0.0	1.7
G	0.0	0.0	0.0	0.0	22.2	0.0	18.9	0.0	5.6	2.2
F	10.0	24.4	13.3	18.9	3.9	12.8	3.3	15.0	2.8	0.0
S.M.	40.6	56.1	41.7	42.2	40.6	45.6	36.1	43.3	35.0	30.6
L.L.										
I	2.2	3.9	1.7	0.0	0.0	2.2	0.0	0.6	0.0	0.6
W	10.1	11.3	13.0	6.2	23.6	12.3	29.7	23.0	22.3	17.4
OF	6.7	15.2	3.3	3.3	15.7	4.7	6.7	6.2	11.2	9.4
ON	20.2	16.8	25.8	16.9	20.7	17.9	23.6	19.6	23.1	13.6
C	27.4	16.7	25.1	36.9	12.9	21.2	19.6	23.4	20.6	25.7
N.E.	66.7	63.9	68.9	63.3	72.8	51.3	79.4	72.8	77.3	66.7
MA	21.1	36.1	20.6	26.7	12.2	21.7	15.0	13.9	13.8	21.7
MI	12.2	0.0	10.6	10.0	15.0	6.1	5.6	11.1	8.9	11.7
SP	0.0	0.0	0.0	0.0	0.0	13.9	0.0	2.2	0.0	0.0
M.E.	33.3	36.1	31.1	36.7	27.2	41.7	20.6	27.2	22.7	33.3

T	21	22	23	24	25	26	27	28	29	30
S	F	F	F	F	F	F	F	F	F	F
Q	B	D	D	B	D	D	D	B	B	D
L	T	T	I	T	I	I	I	T	I	I
C.L.										
T	27.8	25.0	28.9	16.1	31.1	36.7	15.6	12.8	21.1	25.1
M	7.2	11.7	0.0	5.6	0.0	5.6	13.3	7.7	7.7	7.2
B	0.0	0.0	1.1	0.6	0.0	0.0	1.7	0.0	0.0	1.1
WU	5.6	5.0	3.9	5.6	6.1	5.6	4.4	8.3	6.1	3.3
G.C.	40.6	41.7	33.9	27.8	37.2	47.8	35.0	28.9	35.0	37.2
TN	22.2	21.1	17.3	22.2	17.8	15.0	12.7	21.7	21.7	15.6
ST	4.4	1.7	5.0	2.8	0.0	1.7	8.3	1.1	0.0	11.7
R	0.0	0.6	0.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0
SB	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	0.0	0.6
BK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S.K.	26.7	23.3	22.3	25.0	17.8	16.7	22.8	22.8	21.7	27.8
P	16.7	16.7	10.0	21.7	37.8	16.1	22.2	22.2	26.1	17.8
S	1.7	0.6	0.6	0.0	0.0	0.6	0.6	11.1	4.0	5.6
G	14.4	11.1	28.3	0.0	2.8	16.1	5.6	0.0	2.2	9.4
F	0.0	6.7	4.4	25.6	4.4	2.8	12.7	15.0	11.1	2.2
S.M.	32.8	35.0	43.3	47.2	45.0	35.6	41.1	48.3	43.3	35.0
L.L.										
I	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0
W	18.0	18.9	23.3	11.2	8.9	25.0	33.3	22.2	16.7	22.2
OF	9.4	3.3	1.7	0.6	5.6	6.1	1.7	1.1	1.1	11.1
ON	13.6	22.0	23.9	16.3	29.2	22.2	16.6	20.3	22.2	20.0
C	25.2	21.8	20.6	30.8	15.8	15.6	16.7	20.0	16.7	16.1
N.E.	66.7	60.6	69.4	58.3	59.4	69.9	69.4	63.9	56.7	69.4
MA	21.7	26.1	15.6	29.4	19.4	15.0	11.1	20.0	23.3	21.1
MI	11.7	12.8	13.9	11.1	21.1	14.4	19.4	16.1	18.3	9.3
SP	0.0	0.6	1.1	1.1	0.0	1.7	0.0	0.0	1.7	0.0
M.E.	33.3	39.4	30.6	41.7	40.6	31.1	30.4	36.1	43.3	30.6

T	31	32	33	34	35	36	37	38	39	40
S	F	F	F	F	F	F	M	F	F	F
Q	B	D	B	B	B	B	B	B	D	D
L	T	I	T	I	I	I	T	I	T	T
C.L.										
T	16.7	39.4	18.3	32.6	31.1	19.4	20.6	20.6	15.6	22.2
M	0.0	7.2	10.2	5.6	10.0	10.0	13.9	13.9	8.9	6.7
B	0.0	1.7	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WU	2.2	9.0	6.7	5.0	3.6	3.9	3.3	7.8	12.8	5.0
G.C.	18.9	57.2	38.3	43.9	45.0	33.3	37.3	42.2	37.2	33.9
TN	21.1	4.0	24.4	28.3	23.6	33.3	12.2	13.3	17.8	17.2
ST	1.7	6.1	4.0	1.1	1.7	0.0	0.0	5.6	8.9	5.6
R	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SB	0.0	0.6	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S.K.	22.8	10.6	31.1	23.8	25.6	33.3	12.2	18.9	26.7	22.8
P	31.7	16.1	25.0	17.8	22.2	22.2	27.2	21.7	18.9	22.2
S	2.8	9.4	5.6	0.0	2.8	0.0	3.9	3.9	9.4	1.1
G	9.4	0.0	0.0	0.0	4.4	0.0	5.6	5.6	0.0	17.8
F	14.4	6.7	0.0	15.0	0.0	11.1	13.3	7.8	7.8	7.2
S.M.	58.3	32.2	30.6	32.8	28.4	33.3	50.0	38.6	36.1	43.2
L.L.										
I	0.0	0.0	0.6	0.6	0.0	0.0	3.3	0.0	1.7	2.8
W	17.8	27.2	27.8	8.3	19.4	20.6	8.9	12.2	20.6	22.2
OF	1.1	16.7	1.1	3.9	7.8	8.9	11.1	11.1	8.9	8.3
ON	20.0	14.0	16.7	30.0	18.3	13.9	20.6	18.3	16.7	16.7
C	16.1	14.0	27.2	26.7	22.8	22.2	12.8	15.0	22.2	19.4
N.E.	55.0	71.7	73.3	69.4	68.3	65.6	56.7	56.7	70.0	69.4
MA	20.6	14.4	19.4	18.3	21.1	19.1	27.2	27.2	16.7	16.7
MI	24.4	12.2	7.2	12.2	8.3	10.6	5.0	16.1	11.1	11.1
SP	0.0	1.7	0.0	0.0	2.2	4.4	11.1	0.0	2.2	2.8
M.E.	45.0	28.3	26.7	30.5	31.6	34.4	43.3	43.3	30.0	30.6

APPENDIX -11-

Comparison of How Students Spend Their Time During PE Lesson in Bahrain and in other Countries.

PLACE	Management & Transition %	Waiting %	Receiving Information %	ALT-PE %
Bahrain	30	20	22	19
Canada	20	22	22	26
Ohio (USA)	22	24	15	21
England	14	16	27	24
New Zealand	14	18	28	24
Belgium	6	32	23	30
New York (USA)	13	25	25	27

Note: Students also spend time in other behaviours.

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