TEACHER RATIONALE FOR COMPLIANCE OR NON COMPLIANCE WITH CURRICULUM GUIDELINES IN THE TEACHING OF ELEMENTARY SCHOOL GYMNASTICS

by

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ABSTRACT

This study used a questionnaire to examine teacher rationale for compliance or non-compliance with curriculum guidelines in the teaching of elementary school gymnastics. Descriptive data were collected from teachers to establish:

1. How much time is given by primary teachers to the teaching of gymnastics to their homeroom classes.

2. What factors primary teachers identify as being important determinants in the amount of time they allocate to the teaching of gymnastics.

A two-part questionnaire was designed to gather data relevant to the two major goals of the study. Twenty one schools were chosen at random from one school district, and all nine elementary schools in a second district were included. The study sample comprised 132 primary teachers; 74 of these returned the questionnaire.

The results of the study indicated that the majority of teachers offered their students well below the time allotment assigned to gymnastics in the British Columbia physical education curriculum guide. The data also indicated that teachers generally had certain attitudes towards the teaching of gymnastics which included the following: (a) strong agreement that students enjoyed gymnastics lessons, (b) strong agreement that gymnastics was valuable to children, (c) enjoyment in teaching gymnastics, (d) strong concern for student safety, (e) concern for teacher liability in the event of accidents to students, and (f) little expectancy that gymnastics be taught. Other
factors which appeared to act as determinants included: (a) the adequacy of print resources, (b) the nature of pre-service training, (c) teachers' sense of competence in the teaching of gymnastics and, (d) the adequacy of in-service.

This study concluded that it was the interaction of factors that influenced time allocation. There was a strong indication that pre-service training was a major factor and that it was compounded by other factors such as levels of support services, teacher age, and teacher concerns about safety. In turn, these factors were possibly interacting to affect teachers' perceptions of competence to instruct students in gymnastics.

Recommendations arising from the study included (a) that opportunities be provided for in-service that meets the specific needs of teachers, (b) that teacher associates be appointed to provide coaching in gymnastics at a teacher's school, (c) that pre-service training for teachers involve comprehensive courses in gymnastics, and (d) that leadership be shown by principals in developing school-wide plans for physical education that define specific times and activities for gymnastics. Further, it is recommended that additional research should attempt to clarify the extent to which specific factors outlined in this study interact to affect time allocation for gymnastics.
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CHAPTER 1

The Problem

1.1 Introduction

Physical education has been part of our general public school education for more than one hundred years. During this time many changes have taken place in the philosophy, teaching methodology, and content of the subject.

One element of instruction that has survived the changes in direction is the role of the teacher. Today in British Columbia elementary schools it is most typical that the task of instruction in physical education is placed in the hands of the classroom generalist teacher (Moody, 1984). Although some individual schools or even whole districts have seen fit to hire full-time physical education specialists, the most recent survey on physical education in British Columbia (Provincial Learning Assessment Program) showed that "the majority of elementary teachers who are now teaching physical education have little or no formal training in this subject area" (Carre, 1979 p. 2).
In spite of this lack of training, the generalist teacher is expected to fulfill what Moody (1984) has labelled a "curriculum mandate". He argues that teachers are not supposed to be free to teach what they wish, but are expected to follow administrative and curricular prescriptions clearly outlined in documents produced by the Ministry of Education in British Columbia.

Curriculum guidelines in British Columbia advocate that elementary school physical education programs should include a balance of well developed lessons in at least the areas of dance, games, and gymnastics (Department of Education, 1971). A revised edition of the guide in 1975 further confirmed these directions and, since then, locally developed guides have been produced by many districts in British Columbia (e.g., Vancouver, Nanaimo, and Coquitlam) reflecting these provincial guidelines.

However, as Fullan (1982) has pointed out, the existence of curriculum guidelines does not necessarily mean they are actually being followed. Many teachers, he suggests, do not actually use them at all. Two studies undertaken in British Columbia provide further information concerning the status of curriculum guides. Coles (1981) reported that the language arts curriculum guide was used only occasionally by the majority of teachers surveyed.
Robitaille (1980) takes this point even further concluding that a considerable gap existed between the intended curriculum, as described in curriculum guides, and the implemented curriculum.

The 1979 British Columbia Assessment of Physical Education found that nearly all the elementary teachers surveyed had some familiarity with the 1975 Elementary Physical Education guide (Carre, 1980). In spite of this familiarity, it appeared that the majority of teachers were not following its suggested guidelines, particularly in the matter of gymnastics instruction. That survey's mandate was essentially to carry out an assessment of physical education in British Columbia, thus the reasons why the majority of teachers were not following curriculum guidelines in the teaching of gymnastics were not determined.

A preliminary exploratory investigation conducted in conjunction with this study suggested that the situation concerning gymnastics instruction in 1979 prevails today in many elementary schools. This same investigation also indicated that the reasons why teachers are still choosing to ignore curriculum guidelines in the teaching of elementary school gymnastics warranted further investigation. Thus, it was reasoned that a survey of elementary teachers would provide substantive evidence as to the extent to which teachers are currently following guidelines in
the teaching of elementary school gymnastics. In addition, and perhaps of greater importance to all educators, the survey could identify what factors influence teachers in the allocation of a certain proportion of their physical education program time to gymnastics instruction.

1.2 Rationale

Curriculum guidelines provide only one source of curriculum materials that teachers use. Materials that have been developed by local districts also provide a source that many teachers use to develop a "curriculum in use" (Fullan, 1982). Physical education curriculum guides such as those prepared by the Vancouver School Board (1983), Action Nanaimo (1978), and the Calgary Board of Education (1980) contain many ideas, lesson plans, and skill progressions in various activity areas. However, these guides all concur with provincial guidelines and advocate that gymnastics should receive 25-30 percent of the time allotted to an elementary physical education program (the Calgary guide has been sanctioned by the Canadian Association for Health, Physical Education and Recreation).
Thus if the gymnastics time allotment in provincial and local physical education guides is consistent, the question arises:

To what extent are teachers following these sanctioned guidelines?

Docherty and Morton (1982) have suggested that gymnastics is among the areas least taught in many physical education programs in elementary schools. Two studies of importance appear to substantiate this claim. Thompson (1979) found that 6.6 percent of elementary teachers surveyed in British Columbia did not teach gymnastics, and 52.3 percent taught it for only 20 percent or less of their physical education program time. A recent survey (Carre, 1980) of over 1000 elementary teachers throughout British Columbia, indicated that approximately 40 percent of primary teachers surveyed allocated less than 10 percent of their activity time to gymnastics instruction. Of the intermediate teachers surveyed, approximately 50 percent fell into the same category as their primary counterparts.

The above evidence suggests that the time allotment for gymnastics advocated by curriculum guidelines is not being followed. What these studies do not offer, however, are suggestions as to factors that influence teachers in their decisions concerning
time allocation. This statement does not imply criticism, but serves more to indicate that educational change is a complex issue. Fullan (1982) captures the notion of this complexity when he suggests that "the idea of implementation and of the factors affecting actual use seems simple enough, but the concept has proven to be exceedingly elusive" (p. 55). This caution notwithstanding, he suggests that there has been enough evidence produced over the last decade to be fairly confident about what factors have the most influence on educational change. He has pulled together many of the common elements found in the literature and put them into a framework for educational change. This framework identifies fifteen factors that interact with each other to influence implementation.

In spite of the interest shown by Fullan and others in the field of educational change, few studies have addressed how it affects the specific curriculum area of gymnastics. Consequently the situation concerning gymnastics instruction at the elementary level remains unclear. In particular, little is known about why teachers choose to comply with, or ignore the Ministry of Education curriculum guidelines for gymnastics.
1.3 **Purpose of the study**

The purpose of this study was to examine teacher rationale for compliance or non-compliance with curriculum guidelines in the teaching of elementary school gymnastics.

The major goals of this study were to establish:

1. How much time is given by primary teachers to the teaching of gymnastics to their homeroom classes.

2. What factors primary teachers identify as being important determinants in the proportion of time they allocate to gymnastics instruction.

1.4 **Definition of terms**

**Gymnastics.**

For the purpose of this study, gymnastics is defined as the maneuvering of the body effectively against the force of gravity either individually, with partners, or in groups both on the floor and on, or with, a wide variety of both small and large apparatus.

**Primary teacher.**

A teacher of Grades One, Two, or Three.
**Homeroom Class.**

The class to which the teacher has been assigned for instructional purposes, including instruction in physical education and, therefore, gymnastics.

1.5 **Limitations of the Study**

1. The validity of the results of this study are limited to the population used in the study.

2. The use of a questionnaire to gather data has certain limitations and these will be discussed in further chapters.

1.6 **Significance of the Study**

1. The knowledge gained from this and similar studies will be of assistance to those charged with developing and presenting pre- and in-service programs for teachers whose responsibility it is to teach gymnastics.

2. The findings of this study will further the knowledge of curriculum implementation in gymnastics instruction.

3. The cautious generalization of the findings of this study may also have significance not only in physical education, but other areas of the curriculum.
2.1 Overview

Consistent with the major emphasis of this study, this review of the literature will have as its foci the areas of gymnastics and of educational change as it relates to the teaching of gymnastics. Particular attention in this review will be given to the role of the teacher and in order to address this purpose, this review is divided into five parts. Section 2.2 will examine gymnastics and gymnastics instruction from an historical perspective. Section 2.3 will look at the role of gymnastics in the school context. Section 2.4 looks at the emergence of current trends in gymnastics instruction. Factors that influence or hinder teachers in their decisions concerning the teaching of gymnastics are presented in section 2.5. Finally, section 2.6 provides a brief summary of the chapter.

2.2 Historical Perspective

The beginnings of gymnastics are somewhat
obscure, although ancient records appear to show that gymnastics-related activities were being practised by the Chinese as long ago as 2600 B.C. (Loken & Willoughby, 1959). However, if gymnastics can be said to have had a beginning, then we must jump a couple of millennia to about 776 B.C. and focus attention upon ancient Greece.

The word 'Gymnastics' is derived from the Greek word Gymnos meaning nude, which reflected the Greek practise of participating in exercises while unclothed. Thus the literal definition of gymnastics is the 'naked art' (Tatlow, 1978). The exercises the Greeks named 'gymnastics' consisted of running, jumping, throwing the discus and javelin, boxing, and wrestling and were often performed to the accompaniment of music and song (Brown & Sommer, 1969).

The Romans adopted from the Greeks phases of gymnastics they believed to have military value, using the wooden horse which they mounted and dismounted (Tatlow, 1978). However when the Roman empire finally declined about 500 A.D., so did gymnastics, and the succeeding thousand years witnessed a total absence of formalized gymnastics with the exception of acrobatic and circus type activities (Brown & Wardell, 1980).

The revival of gymnastics occurred in Europe in the eighteenth century, providing a basis for what is
now most commonly referred to as Olympic or artistic gymnastics. Munrow (1963) has suggested that this revival began with the work of J.C. Guts Muths who formed the link between classical and modern gymnastics. Munrow states that the great contributions Guts Muths made were "1) An early classification on anatomical lines which led to the development of exercises 'designed to produce particular effects on the body'. 2) An early development of apparatus to make possible the systematic practice of swinging, climbing and balancing skills" (p. 9).

It was this work by Guts Muths that was subsequently developed in the early 1800's along two independent lines: Friedrich Jahn, a German, developed his apparatus activities, and Per Ling, a Swede, developed his classification system of activities.

Friedrich Jahn conceived the idea of combining gymnastics training with arousing patriotic fervour. It was Jahn who invented several pieces of equipment, among them the horizontal bar, parallel bars, side horse, and vaulting buck. Exercises that required courage and daring were invented to go along with these pieces of equipment. Jahn's purpose was to develop fit, aggressive patriots, and thus he formed the Turnverein, a patriotic club of gymnastics oriented Germans who exercised for physical fitness.
When these clubs moved indoors, so did the equipment, resulting in adaptation and sophistication of the crude equipment and the invention of more and more exercises or stunts (Brown & Wardell, 1980).

Also in the early 1800's, Per Ling was developing Swedish gymnastics, and was the first to appreciate the corrective value of gymnastics (Loken & Willoughby, 1959). His philosophy was group instruction at a word of command, preferring free standing exercises that were held until another position was ordered.

Munrow (1963) differentiates between the two by classifying Ling gymnastics as a "system" and Jahn gymnastics as a "sport". The Americans, he says, have preferred to call the sport gymnastics, and the system calisthenics. He lists the essential features of the two systems:

Ling and Swedish Gymnastics

1. Ling studied anatomy and physiology and urged strongly that theory and practice should go hand in hand.

2. He developed free-standing exercises in which no external apparatus or implements were used and in which, therefore, the effects of the movements on the body were the only consideration.

3. He established a training institute which was concerned with children and educational work from the beginning.

4. Remedial or medical gymnastics figured prominently in his work.
5. In Sweden the exercises and the estimated needs of the body determined the developments of the apparatus.

6. A classification was initiated by Ling and merely elaborated by his son, by Branting, and by others. His son, Hjalmar Ling, was mainly responsible for the educational gymnastic table, or day's order, which crystallized Swedish gymnastic thought and practice for many years.

7. Ling himself was made a member of the Association of Swedish Doctors, and the acceptance of his work in other countries can be attributed largely to medical interest.

These facts can be contrasted with early developments in Germany as follows:

Jahn and German Gymnastics

1. Jahn had no connection with the medical profession, nor did he identify himself with physical education on a full-time professional basis.

2. He called gymnastics "Turnen", seeking a work [sic] of German origin and selecting one which meant a joust or tourney.

3. The exercises on German apparatus were dictated by the apparatus. The gymnasts made up their own exercises on a trial-and-error basis, and then displayed them for others to try; from the start the exercises were mildly competitive.

4. Jahn started with schoolboys, but the movement rapidly grew into a young adult movement. It was in clubs and universities, not in schools, that its early growth was manifested.

5. From its mildly competitive beginning, influenced no doubt by the fact that the participants were adults, Turnen soon grew into a competitive sport which has been represented at national and international level ever since. (P. 12.)
One must not be left with the impression that these national gymnastic forms were the only ones that were being developed during the 1800's. Physical education played an important role in other European countries resulting in gymnastics systems of different types evolving in Denmark, Czechoslovakia, and France. What makes the work of Jahn and Ling stand apart, however, is the tremendous influence they had in countries other than their own.

Dauer & Pangrazi (1983) have stated that the influence of both of these systems was felt in America towards the end of the nineteenth century due to the influx of German & Swedish immigrants to the country. The exponents of both systems battled bitterly over their particular methods, resulting in American schools adopting an eclectic position of compromise between the two systems (Brown & Sommer, 1969). The International Federation of Gymnastics managed to bring the two systems together in 1920, however Tatlow (1978) suggests that there is still a clash of aims between the two that exists to this day.

At the turn of the twentieth century in England, the perceived value of Swedish gymnastics induced the British army and navy to officially adopt it for use in their training programs. In 1904, the English School Board published "A Syllabus of Physical Exercises for Use in Public Elementary Schools" that
was based broadly on the Swedish system of physical exercises" (Brown & Sommer, 1969). The syllabus emphasized that exercises should be taught by formal army-type drill instruction. Hence it was not surprising during this period to observe many of the lessons being taught by former Army personnel (Whitehead & Hendry 1976). McIntosh (1952) has pointed out that public elementary schools in Britain were directly encouraged to employ instructors who had been trained in the Army Gymnastic Course. These instructors gave teaching an emphasis that had a strictly formalized, militaristic flavour. However, this syllabus did not remain in force for very long, being subsequently revised in 1909, 1919, and 1933. These revisions, although emphasizing exercises that were based on the Swedish system, made clear how the trend was beginning to move away from the formality of the drill lesson with its military precision, towards lessons that emphasized greater freedom for the individual (Bilborough & Jones, 1973).

The United States in the 1920's and 1930's saw a complete revolution in school physical education. The emphasis changed to sports and games, and formal gymnastics was discarded in favour of these two areas. Baley (1974, pp. 6-7) has proposed four main reasons for the decline of the sport of gymnastics in the
United States until mid-twentieth century:

1. Administrators made an erroneous application to physical education of John Dewey's philosophic statements concerning the advisability of free play coupled with continued use of distasteful highly formal procedures in teaching of gymnastics.

2. A decrease in the average person's strength, power, and endurance resulted from the decreased need for physical labor, making success in gymnastics stunts harder to achieve and bringing joys of success to fewer people.

3. Physical educators began to teach non-strenuous activities because they appeared to contain a smaller element of hazard, and because through them, the physically unfit could experience a "medium of success."

4. The growth in popularity of team sports such as football, basketball, baseball. Also the physical educators began to teach team sports due to numbers of students which could be handled, while they completely neglected the individual activities. (Actually the formal method of teaching caused the students to reject the military approach to step-by-step gymnastics and demand the excitement of unregimented team sports.) (pp. 11-12).

In England during the 1920's, the still dominant Swedish system of gymnastics was being challenged by the introduction of various European methods of modern gymnastics. In addition, games and swimming were being officially encouraged in attempts to broaden the approach to physical education. The revision of the Syllabus of Physical Exercises in 1933, however, still reflected official acceptance of the Swedish system.
What was evident in this revision was the "change in conception and method from "Drill, Exercises and Physical Training' to the enlightened breadth of "Physical Education'" (Priestly, 1974, p. 21).

However, with the conclusion of the Second World War, changes started to occur in physical education in England — changes that would affect gymnastics instruction not only there, but throughout the world.

Based on the appeal of obstacle training, unorthodox, newly designed, and even improvised apparatus was installed in the schools. Formal methods of instruction were deemed inappropriate for this new situation, and children were encouraged to use exploration in discovering ways to use the apparatus (Brown & Sommer, 1969). Johnstone (1974) has pointed out that it was the children themselves, who revealed the possibilities of the new equipment, and what emerged from this were new teaching techniques. He comments that, "By the very nature of the situation, it was no longer possible to have formal groupings and a command-response type of teaching" (p. 23). Mauldon and Layson (1979) interpret the change as more of a reaction against the rigidity of the still dominant Swedish gymnastics. However there is no argument from these and many other authors that the movement theories of Rudolph Laban (1879-1958) greatly influenced the supporters of this
new movement, giving the new gymnastics an opportunity to develop a theoretical framework. Brown and Sommer (1969) have suggested that following Laban's method:

Children explore a movement task or solve a movement problem while moving in their own way. They are taught how to use the components weight, time, and flow effectively, what is involved in a movement, where a movement can go in the space around the body, what shapes the body can make, and how to use their own movement experiences and ideas in arranging free-flowing movement sequences. (p. 72)

These authors further point out that lessons are developed around a theme. A number of movements, self-directed by the children, that relate to a theme are worked out initially on the floor and then this knowledge is transferred to apparatus. In conclusion, Brown and Sommer comment, "The English method of movement education in educational gymnastics is...an imaginative application of Laban's theories of movement" (p. 72).

Although the seeds of this new form of gymnastics were being laid in England, Holbrook (1973) has pointed out that gymnastics in that country continued to develop along more formal lines. The emphasis was on set movement patterns designed to develop strength, endurance, agility, and balance. This was, she states, in part a response to the national concern over physical fitness, but also suggests that interest
In success at the Olympic games level was a determining factor in the growth of Olympic gymnastics at the school level.

In the United States during the 1950's, the uproar over physical fitness among schoolchildren also resulted in a renewed emphasis being placed upon physical education in the schools. One of the by-products of this interest was that gymnastics was given special emphasis as a strength builder (Brown & Wardell, 1980). These authors have also suggested the poor showing of the United States in gymnastics at the Olympic games of 1956, the formal gymnastic exhibitions by touring teams, and the televising of gymnastic competitions all contributed to the emphasis that Olympic gymnastics received in schools.

In spite of the development of Olympic gymnastics in the schools, the influence of the new movement that had begun to gain prominence in England, was beginning to impact in North America, with teachers starting to use Laban's movement analysis to teach what also became known as educational gymnastics (Kirchner 1985). Over the next two decades, many text books written in both North America and England helped develop and clarify the purpose and content of educational gymnastics. Nevertheless, the change from the teaching of formal gymnastics to educational gymnastics was a gradual process. This is well
illustrated by a quote from a textbook on physical education published in 1970:

One of the most significant changes occurring in the elementary school physical education program is within the self-testing area. Our contemporary approach, which may be simply defined as teaching standardized skills through a predominant use of the direct method, is gradually being replaced by the educational gymnastic approach. (Kirchner, 1970, p.336)

The influence of educational gymnastics in British Columbia can be examined by referring to the curriculum guide written for the province in 1971 (Department of Education, 1971). Both this and the subsequent revision (Ministry of Education, 1975), clearly mandate that educational gymnastics shall be taught to children of elementary school age. Whether this advocacy was actually being carried out in elementary schools in British Columbia during the '70's remains unclear. However, Kruger (1978) does suggest that the familiar concept of gymnastics in schools at this time was still a series of self-testing activities that were of the Olympic form and presented by the teacher.

Up to this point, some key stages have been traced in the development of gymnastics in England and North America. It would be useful to summarize the similarities and the differences that exist between them, because as Randall (1961) has observed, "The
term Gymnastics is capable of many interpretations, taking on different shades of meaning that vary in intensity" (p. 11).

Swedish gymnastics.

Swedish gymnastics was adopted as the basis of school work in England and reflected an era in which the emphasis was placed upon instructing the children with an imposed discipline. Holbrook (1973) has encapsulated the basis of the work, stating that:

[It was] anatomical, with a certain remedial emphasis, concerned with the systematic training of muscles and joints in addition to developing strength, endurance, and a quick response to command. There was an inevitable limitation of the range of movement possibilities, much of the work being symmetric, planal, and rhythmically limited. The uniqueness of the individual was largely unrecognized or ignored. (p. 3)

Randall (1961) has simplified this as follows, 
"[it was] systematized exercises followed by skills performed on...[specifically designed] bars, ropes, horse, box and mat" (p. 12).

Morison (1969, p. 8.) has also offered a definition that focuses upon the ideas of systematized exercises, commenting "The Swedish system of gymnastics consisted of a series of exercises for each
part of the body, in turn so that all joints were used in full range and all muscles systematically exercised" (p. 8).

Olympic gymnastics.

The basis of Olympic gymnastics began with the work of Jahn and German Gymnastics (Munrow, 1963). It was based on exercises that were dictated by the apparatus used and, in addition, it also sought to prepare the gymnast with the ideas of fitness, patriotism, and brotherhood.

Graham, Holt/Hale, McEwan, and Parker (1980) have suggested that Olympic or artistic (as it is also called) gymnastics focuses specifically on learning to execute a series of predetermined stunts in one correct way. Siedentop, Herkowitz, and Rink (1984) while not specifically defining Olympic gymnastics, take the position that this type of gymnastics concerns specific skills that are to be learned and perfected. They suggest that tumbling and apparatus work are to be included utilizing parallel bars, vaulting horses, horizontal bars, rings and balance beams. Downey (1976) also sees Olympic gymnastics in terms of performance and states, "Olympic gymnastics emphasizes mainly perfection of specific movements or combinations of movement on the floor and on or over specially designed apparatus" (p. 130).
Educational gymnastics.

Williams (1979) has suggested that educational gymnastics is a term applied to a form of gymnastics that is taught in schools. She sees a similarity between educational and Olympic gymnastics in their contents but sees educational gymnastics as being more loosely structured and having a completely different methodology.

Docherty and Morton (1982) in reporting on the Canadian Gymnastics Federation Programme, have helped to identify a similarity between educational and Olympic gymnastics. They refer to the six dominant movement patterns which have been developed by the Federation: (a) Static positions, (b) Landings, (c) Rotations, (d) Swings, (e) Springs (Jumps), (f) Flight and height (p. 6). These authors suggest that teachers use an approach that "integrates the content and methodology of educational gymnastics with the basic movement patterns" (p. 6). Traditional stunts can be directly taught but children should be encouraged to explore and create movement patterns on the floor or on apparatus. The movements children produce will show an interpretation common to the two forms of gymnastics.

Bilborough and Jones (1973) capture the essential differences between educational and Olympic gymnastics when they suggest that the difference is
manifest in the teaching methodology:

In the traditional approach to the teaching of gymnastics only one method, the direct method of presentation, was used, a particular exercise or movement, vault or agility being imposed on the class by the teacher. Now three methods are used:

1) the direct method of presentation, in which the teacher imposes a specific activity,

2) the indirect method of presentation, where the children are completely free to choose or devise their own activities or movements within the limits of the space and apparatus at their disposal,

3) the limitation method of presentation, where the children are allowed to choose freely within the limitations imposed by the teacher. The limitation is the task or challenge imposed. (p. 84)

Logsdon et al. (1984), while helping to clarify what is meant by educational gymnastics, also shows where it differs from Olympic gymnastics, commenting that:

[educational gymnastics] centers its attention on awakening children to the full potential of the body as an instrument for movement and helping them develop individuality and versatility in gymnastics as they pursue their skill potential....[children] are encouraged to find a variety of responses or ways they can solve the tasks rather than being shown and taught one way of performing a stunt or skill. (p. 208)

Although some authors have preferred to explore the similarities and differences between the two
gymnastics, others have sought to clarify the purpose of educational gymnastics. Siedentop et al. (1984) have defined the purpose of educational gymnastics as "body management: the ability of an individual to manage his or her own body in objective movement under increasingly difficult conditions....It [educational gymnastics] deals with objective movement. The goal is to master control of the body" (p. 231). Graham et al. (1980) are quite specific in defining the purpose and content of educational gymnastics. They state that "[educational gymnastics] provides children with gymnastic experiences to teach them to maneuver their bodies effectively against the force of gravity, both on the floor and on apparatus" (p. 140). Cameron & Pleasance (1971) comment that the purpose of educational gymnastics is "to teach the correct and skilful use of the body in various situations, by combinations of movements which are economical in the use of time, strength, space, and flow" (p. 4).

Randall (1961, p. 12.) has also preferred to talk about educational gymnastics not only in terms of movement qualities, but also in its effects on the body, seeing educational gymnastics as being:

Based upon Laban's movement qualities. The starting point is not restricted to isolated parts of the body...[and] the final result is not limited to mere strength and suppleness but rather these ends will be served incidentally as
by-products through the training by which the individual becomes increasingly aware of the full potential of her body through movement. (p. 12)

In helping to clarify educational gymnastics, the literature makes mention of the similarities and differences that exist with Olympic gymnastics. Although it can be said they have similar contents, their aims are different. Educational gymnastics uses a variety of teaching methodologies to produce good movers, increase body awareness, body concept, movement concepts, and skill; whereas Olympic gymnastics relies upon one specific method of instruction to achieve the desired goals.

Summary.
This section has provided a frame of reference for the examination of what is being taught in schools. As Capel (1986) has noted, there is more than one type of gymnastics currently being taught in schools, but the two types that are most commonly taught are educational and Olympic. This historical review of the literature has described how these two major influences have found their way into school instructional programs. The emphasis of this paper will now switch to an examination of arguments that have been documented in support of the inclusion of gymnastics in the curriculum. Identifying these
claims serves to suggest rationales teachers use for including gymnastics in a physical education program.

2.3 The Role of Gymnastics in the Curriculum

Gymnastics instruction is an important component of a balanced school physical education program. Strong arguments have been made by several authors in support of school physical education. The following goal statements show a high level of congruence and are presented to provide a reference point for examining the role of gymnastics in the school context.

Rationale for physical education in the curriculum.

Dauer & Pangrazi (1984, pp. 12-15) have suggested that physical education can play an important role in both the growth and development of the child. They cite research supporting the need for physical activity in order to achieve these ends. Physical education, they argue, must fulfill certain objectives in order that the child might achieve the goals of growth and development. Specifically, they state that the program should have components of (a) physical fitness, (b) movement excellence and useful physical skills, (c) social development, (d) safety skills and attitudes, (e) wholesome recreation, (f) positive self
concept, (g) personal values, and (h) experiences with many kinds of activity.

Kirchner (1985, pp. 9-11) has certainly agreed with the above components, but has collapsed them, seeing the objectives of physical education as (a) enhancing physical growth and development, (b) developing useful physical skills, (c) developing socially useful ways, (d) developing intellectual competence, (e) developing creative talents, and (f) enhancing a child's self-image.

Siedentop et al. (1984, pp. 6-8) offer several lines of argument for justifying physical education, citing evidence that physical education has a(n) (a) physical development function, (b) cognitive development function, (c) socializing/moralizing function, (d) emotional development function, and (e) cultural transmission function.

Bailey (1973), in a paper that attempted to justify the need for providing growing children with wider opportunities for participation in programs of physical activity, argues that:

1. Physical activity is necessary to support normal growth in children.

2. Inactivity as a youngster can have a bearing on mature functional capacity and consequently may be directly related to a number of adult problems.

3. The basic orientation toward experience is established early in life. If we want
adult participation in physical activity it should be remembered that motivation towards activity is probably laid down at a very early age. "As the twig is bent, so grows the tree."

4. Learning inside the classroom may be enhanced and supported by activity outside the classroom. "All work and no play makes Jack a dull boy". (pp. 50-51)

This brief review has presented arguments that several authors have offered concerning the need for physical education in the curriculum. The unique role of gymnastics within physical education is discussed in the next section.

**Rationale for gymnastics in the curriculum.**

Munrow (1963, p. 3) has defined gymnastics as "systematized forms of exercise designed to produce particular effects on the body". He saw the effects of gymnastics on the body in terms of strength, mobility, endurance, power, and skill: confining his discussions of the effects to the purely physical. However, to consider only the physical effects seems to preclude other qualities that gymnastics has to offer.

Capel (1986) has talked about gymnastics as providing opportunities for inventiveness, creativity, challenge, and adventure but also agrees with the physical benefits that gymnastics is thought to bring to children. She sees the demands of strength,
stamina and flexibility as helping develop the overall capacity of children. Siedentop & al. (1984) also see gymnastics as a good, general fitness activity especially for flexibility and strength development, however they suggest that "[there are] many other physical, psychological and emotional benefits, especially if activities are conducted in a strong educational setting" (p. 398).

In referring specifically to educational gymnastics, many authors have attempted to justify this form of gymnastics in terms of its overall benefits to elementary school children. Standeven (1978) has attempted to justify educational gymnastics in the curriculum because of the unique role it has to play in that its central concern is "to focus attention on the body in developing physical skill...for the sheer sake of bodily skill itself" (p. 35). Kruger (1978), meanwhile, has suggested that this form of gymnastics provides a vehicle for physical fitness, proper motor development and posture, and body management techniques, and recommends the teaching of educational gymnastics to achieve these goals. Wiseman (1978) has argued that Munrow's (1963) form of gymnastics does not take into account some benefit of a personal or developmental nature to the performer, and sees the rationale for educational gymnastics as providing the potential for
the acquisition of these 'extra' skills.

Morison (1969) emphasizes that educational gymnastics can contribute to the personal development of children since it can be freely adapted to suit all interests, needs, and abilities of all children during their developmental stages. She sees educational gymnastics as building up a systematic and progressive experience of movement and suggests that "To be physically literate one should be creative, imaginative and clear in expressive movement, competent and efficient in utilitarian movement, and inventive, versatile and skillful in objective movement" (p. 3). Educational gymnastics, she argues, can provide the vehicle for the functional, objective action side of movement as it can be adapted to the needs of any group.

Williams (1979) states that the aims of educational gymnastics are different from other forms of physical education in that the values are of an intrinsic nature. She sees the attention of the gymnast as being on the flexibility, strength and beauty of his/her own movement and makes the argument that other forms of physical education focus on values that are extrinsic in nature. Buckland (1976) agrees with this suggestion, noting the considerable contribution that it makes to the happiness of the individual child as he/she achieves success, and
comments that "Educational gymnastics is concerned with assisting the child's natural process of growth, giving him opportunities to exercise and develop his social, creative, and physical skills. In doing so, many of the child's emotional needs are met" (p. 2).

In summary, it is clear that many authors choose to justify gymnastics in the curriculum along educational lines, suggesting that there are benefits to children in the psychomotor, cognitive, and affective domains. However, in their book on teaching gymnastics, Mauldon and Layson (1979) critically question some of the educational justifications that have been offered for gymnastics in the curriculum. Among the points they raise are: First, if gymnastics does bring a "natural" environment within the range of all children, then is this an adequate justification for its inclusion in the timetable? The time given to gymnastics could be devoted to other areas of learning that are just as important, leaving the children to their own devices to satisfy their physical needs. Second, that children find gymnastics enjoyable is an insufficient justification on the grounds that a counter argument could also be used against activities that children find not so enjoyable. Third, that gymnastics is included on social grounds assumes that these qualities are directly transferable; this aspect, Mauldon and Layson claim, is debatable.
Finally, they suggest that the survival of gymnastics over the years may be explained by the use of the term "educational" which carries with it the implication of value. However, the authors suggest that the use of the term educational perhaps refers more to the teaching methodology used than its value, and as such argue that the means cannot automatically justify the ends.

In as much as Mauldon and Layson (1979) critically question educational claims concerning why gymnastics should be taught within the physical education curriculum, they do agree with other previously cited authors that there is evidence to support the relatedness of educational gymnastics to motor development, cognitive development, and concept formation.

2.4 Current Trends

The literature presented shows that a distinct move has been made over the past 15 years towards the adoption of educational gymnastics in elementary schools. However, what is not so clear is whether a new shift in emphasis is occurring in the teaching of gymnastics that would incorporate or even encourage the teaching of traditional or Olympic gymnastics. Gymnastics publications that were written in the 1960's and 1970's for use in elementary schools
appeared to deal almost exclusively with educational gymnastics. Such publications have not been so prevalent in the 1980's and, in addition, professional journals have included very few articles on gymnastics. Some major publications of the 1980's (e.g., Siedentop et al., 1984) suggest the debate between the merits of educational and other forms of gymnastics may be rekindling itself.

Authors such as Graham et al. (1980) and Logsdon et al. (1984) include specific chapters on gymnastics instruction in their books dealing with the teaching of physical education. These authors focus their attention exclusively on the teaching of educational gymnastics to students of an elementary age. On the other hand, Dauer and Pangrazi (1983) do not mention the word gymnastics in any chapter headings, preferring to include chapters on "apparatus activities" and "stunts and tumbling". Interestingly, the activities and teaching methodology that are suggested could certainly be defined as traditional in content and approach.

Kirchner (1985) acknowledges the term gymnastics but chooses to label one of his chapters "Stunts, Tumbling, and Movement Skill". The activities he presents in this chapter are classified as balance, vaulting, climbing, and agility skills. Other subsequent chapters suggest ways of applying the
learned skills using small equipment and large apparatus. The approach used here can best be described as flexible, combining elements of both traditional and educational gymnastics. Further evidence of the linking of educational and traditional gymnastics is found in the work of Mace & Benn (1982). These authors have suggested that gymnastics can be taught in elementary schools using a more flexible approach than the rigid methodology used some years ago.

Docherty and Morton (1982) in a paper that bemoans the lack of gymnastics being taught in elementary schools, have reasoned that many teachers are reluctant to teach educational gymnastics as the approach used is too process oriented, and does not offer a clear relationship to the fundamental skills of gymnastics. However, they also suggest that teachers are reluctant to offer Olympic gymnastics because of the nature of the activity and the requirement to either teach or perform it. Consequently, they present an approach to the teaching of gymnastics that combines the challenge and relevancy of Olympic gymnastics with the methodology of educational gymnastics.

If the preceding paragraphs, albeit brief, are an indication of current trends, then perhaps the pendulum that has swung so many times in physical
education is on the move yet again with gymnastics exerting the influence. The suggestions of Mace and Benn (1982), and Docherty and Morton (1982), may provide an insight as to how gymnastics instruction might integrate aspects of both educational and Olympic gymnastics.

Summary.

This review has taken the position that gymnastics is by its very nature complex. The accompanying review of the literature has focused on three areas:

1. An historical perspective showing how gymnastics evolved over the centuries to include both Olympic and educational gymnastics. These are the two forms that are currently being taught to students of an elementary age.

2. An examination of the role of gymnastics in the school context, citing the benefits of gymnastics not only in general educational terms, but also in specific terms related to a child's cognitive, psychomotor, and affective development. The presentation of these arguments possibly offers insights in the identification of rationales that teachers use in making a decision to offer gymnastics as part of their curriculum.
3. An examination of current trends suggesting that the approach to the teaching of gymnastics may be changing. It is suggested that the trend could be towards an approach which combines the challenge of Olympic gymnastics with the teaching methodology used in educational gymnastics.

This review also agrees with Moody (1984) that teachers should not be free to teach whatever they wish. This next section will examine factors that can affect whether or not a desired or mandated educational change occurs in practice. Of particular import in the context of this study is how these factors relate to the teaching of gymnastics.

2.5 Educational Change and Gymnastics

Although few studies have been found related to gymnastics instruction at the elementary level, two recent papers concerning the amount of time actually spent teaching this subject come from surveys conducted in British Columbia (Carre, 1979, and Thompson, 1979). Both of these studies suggest that teachers offered well below the recommended time allotments as outlined by the provincial guide (Ministry of Education, 1975). In a summary of teachers' reasons for not teaching an activity, Thompson reported that "1) Traditional gymnastics was
considered to be too advanced for pupils. 2) Children learned insufficient skills during educational gymnastics. In addition, a few teachers were not sure of the distinction between educational and traditional gymnastics, nor did they have enough experience of exposure to this activity" (p. 59).

Docherty and Morton (1982) have suggested that teachers are reluctant to offer Olympic gymnastics because of "The nature of the activity itself and the requirements to teach or perform gymnastics" (p. 3). They point out that many primary grade teachers lack the competence to 'spot' students and therefore avoid teaching the subject. Although they suggest many teachers are satisfied with the approaches and work involved in educational gymnastics, they comment "Many teachers...have been reluctant to teach educational gymnastics on the grounds that it is too much process oriented and lacks a clear relationship to the fundamental skills of gymnastics" (p. 5).

A paper by Thompson and Potvin (1983) presented the findings from two studies dealing specifically with curriculum design and implementation in elementary school gymnastics. The studies suggest that teachers have difficulty implementing gymnastics programs using the curriculum materials that were available. Teachers wanted detailed progressive lesson plans that were practical and could provide
them with information on both content material and methodology. This study also suggested that teachers are more interested in the practical concerns of implementation rather than the theoretical background. The design of lesson plans should allow for more teacher flexibility in the selection of format, with the preferred initial design most likely being detailed progressive lesson plans. However, after this initial implementation period, teachers shifted their preferences to plans that offer a more open ended or general design. Thompson and Potvin have called this stage "second implementation" (p. 16).

Doyle and Ponder (1977-78) have referred to such factors of implementation as the 'practicality ethic'. According to these authors, teachers judge innovations according to three criteria; congruence, instrumentality, and cost. The aspect of congruence has three dimensions, (a) does it fit the way the teacher normally teaches in a classroom, (b) where was it tried before and with what success, and (c) how will students react to it (e.g., student interest and enjoyment). Instrumentality on the other hand has two concerns for the teacher: (a) does it depict the classroom situation, and (b) is it clear in procedural content, or is it too general or abstract. The third aspect of cost can be defined in terms of the individual (i.e., what potential return will result
from the change, e.g., student enthusiasm).

The relatively small amount of published and unpublished literature found that deals specifically with educational change and gymnastics cannot deny that there are factors influencing teacher choice in the teaching of this subject. Consequently it is necessary to investigate how the literature deals with educational change in general in order to suggest factors that have a relevance for gymnastics. It is apparent that some authors have identified specific factors that are associated in a positive manner with the implementation of educational innovations in general, while others have performed exhaustive reviews of the literature to tease out general factors that are associated with successful change. These will both be presented to highlight how the literature exhibits many common elements of change. In addition, the relevance of these common factors to the curriculum area of gymnastics will also be shown.

Factors influencing educational change.

Gross, Giacquinta, and Bernstein (1975) identified five barriers they saw to implementation: (a) most teachers did not have a clear image of the role performance the innovation expected, (b) teachers often lacked the skills or knowledge to perform the new roles, (c) shortages of equipment and
instructional materials, (d) organizational conditions that were incongruent with the innovation, and (e) the negative or non-supportive attitude of administrators for the innovation.

Fullan & Pomfret (1977) in an exhaustive review of literature in implementation have suggested that their analysis identified various factors that could be organized into four broad categories:

1) Characteristics of the innovation (explicitness: what, who, when, how; complexity).

2) Strategies and methods (in-service training, resource support, feedback mechanisms, participation).

3) Characteristics of the adopting unit (adoption process, organizational climate, environmental support, demographic factors).

4) Characteristics of political organizations outside the adopting units, incentive system, role of evaluation, political complexity. (pp. 367-368)

Although they urged caution in viewing these findings as definitive, they nevertheless suggest that there was enough consistency in the number of times certain factors were identified to lend credibility to the analysis. It is interesting to note that Carre & Turkington (1982) used these four components of implementation as a basis for designing a provincial model for the implementation of the British Columbia
Loucks & Lieberman (1982) sought to expose the key understandings emerging from research and experience in making curricular change. They proposed that the findings of research and documented experience be used to plan and carry out more effective curriculum implementation. These authors hold that one of the key factors related to curriculum implementation is support for the process, and suggest that this can be in the form of materials, human assistance and morale boosting, adequate time allocation, and peer collegiality. Support from multiple sources of personnel such as principals, other teachers, and external sources will likely increase the chances of the change effort succeeding. Loucks and Zacchei (1983) have also highlighted the ingredients they imply are critical to a successful change, "(1) A well defined, 'classroom friendly', effective innovation. (2) Ample, appropriate, and continuous help for teachers from a variety of players. (3) Clear direction from administrators. (4) Attention to institutionalization" (p. 28).

Werner (1982, pp. 17-31) has suggested that there are fifteen general principles that could be used as a starting point for those charged with the responsibility for implementation. In his suggestions
for successful implementation, he makes the following points that should be considered in the context of this study. (a) Planning anticipates tasks, roles, and resources necessary to put changes into practice, (b) curriculum developers have realistic change expectations and that they clearly articulate those expectations, (c) curriculum developers ensure that the design of new programs is "practical", (d) implementation of a new program requires time and routine use may take two or three years to achieve, (e) priorities be established among competing program demands if a school or district is dealing with several new programs at one time, (f) school principals have an active and facilitating role in the process, (g) successful implementation requires specific staff development opportunities as the need arises, and (h) since new programs will usually require adaptation to meet local needs, detailed clarification of the curriculum changes depends on members of the school staff. Teachers should therefore try to begin using the new programs as soon as possible; the program will acquire definition through use. Successful implementation, Werner suggests, will occur only if "Teachers have the opportunity to study the new curriculum, learn what changes are involved, discuss it with colleagues, and adapt it to suit local conditions and the needs of the
students" (p. 10).

In what has so far proven to be the most comprehensive review of literature, Fullan (1982) pulls together much of the common elements associated with successful change. His model of change identifies 15 factors which he organizes into four categories. These are unique in as much as "they offer a convergence of findings from two relatively distinct bodies of research - that on school innovation and that on school effect" (p. 55). While other models might have provided a framework for this study, Fullan's seems readily adaptable for the analysis of educational change as it relates specifically to gymnastics; its current and comprehensive nature also provide a credibility that is echoed in the literature. These fifteen factors and their particular import to this study are presented, together with brief statements to place them in the context of educational change as it relates to the teaching of gymnastics.

1. **Need**

Implementation of a particular change will be more effective if it is perceived by teachers as addressing a specific need. For example, do teachers see the need for educational gymnastics in the physical education curriculum?
2. Clarity

The goals of gymnastics and means of achieving them need to be made clear for teachers. For example, do curriculum guides that advocate educational gymnastics provide teachers with enough clarity in order for them to use the guide?

3. Complexity

Gymnastics can require complex changes in teaching strategies, materials, and beliefs of the teachers. For example, the use of teaching methodology that is not of the 'command' style, or the use of heavy or large equipment.

4. Quality and practicality of program (e.g., materials.)

Curriculum materials that are practical, of good quality, and meet the requirements of the program must be available (e.g., see Thompson & Potvin, 1982). In addition, the physical conditions of the school must be appropriate for gymnastics instruction. For example, access to equipment that is necessary for a quality program in gymnastics.

5. The history of innovative attempts

Teachers who have had negative experiences with previous change attempts will be more skeptical about suggestions for future change, regardless of the
possible benefits. In the case of elementary schools in British Columbia, the process for implementation of the 1975 physical education guide was similar to that of the guide of 1971; apart from supplying a number of resource books, little assistance was offered teachers in their acquisition of the new knowledge and skills needed to use appropriate teaching methods in teaching the new form (i.e., educational) of gymnastics (Moody, 1982).

6. The adoption process

The quality of the adoption process sets the stage for the subsequent success or failure of an innovation. The assistance provided by the Ministry of Education in the adoption of what was recommended in the curriculum guides of 1971 and 1975 was minimal (Moody, 1982).

7. Central administrative support and involvement

Although individuals and single schools can bring about change, if board support is incidental, district-wide change in gymnastics programs will not likely happen (e.g., assistance from consultants with program and materials, organization of in-service, and other support was available to very few school districts in British Columbia (Moody, 1982)).
8. **Staff development (in-service) and participation**

In-service in gymnastics is a process not an event. As such, potential new ways of "doing", new skills, knowledge, and attitudes in the teaching of gymnastics will require on-going support from peers and others. For example, teachers will need help to develop a theme over a series of lessons (e.g., see Williams, 1979).

9. **Time-line and information system (evaluation)**

Implementation of gymnastics programs require a time-line that is guided by the complexities of the implementation process. Time is needed for such areas as in-service, becoming comfortable with using each aspect of the gymnastics innovation, (e.g., small apparatus, floor work, use of themes), and being able to interact with other teachers about the innovation. For example, sharing similar successes or pitfalls in developing themes, or teaching methodologies that might be new to them.

10. **Board and community characteristics**

Although it is difficult to generalize, parents in the community can affect the implementation of a gymnastics program. For example, they can insist that the curriculum guidelines in gymnastics be followed; raise funds to add to gymnastics equipment;
or provide physical assistance with the program.

11. The principal

Although change is possible without the principal, he or she can strongly influence the likelihood of whether a gymnastics innovation is implemented successfully by demonstrating interest and providing motivation. For example, the principal can show support for both the teacher and a school-wide program by providing assistance with arranging for a group of classes to use the gym on a particular day (especially if this involves the use of heavy or large equipment).

12. Teacher-teacher relations

The quality of the working relationships between teachers is related to implementation. Peer support and coaching (e.g., by someone knowledgeable on staff) can influence the implementation of gymnastics programs (for a fuller description of this aspect see Joyce & Showers, 1980).

13. Teacher characteristics and orientations

One teacher trait that has been identified with successful implementation is teacher sense of efficacy. Although it is difficult to explain how teachers get a sense of efficacy, the influence of teacher beliefs, teacher competencies, and teacher
knowledge can influence the teaching of gymnastics.

14. Government agencies

The likelihood of implementation occurring will depend upon the congruence between reform and local need, and on how changes are introduced and followed through. For example, lack of role clarity between external and internal groups concerning the implementation of the curriculum guides of 1971 and 1975 resulted in little assistance being offered to teachers.

15. External assistance

Technical assistance in the form of materials, consultants, and staff development should be provided by the government who initiated the change. Larger school districts may have the resources to provide this assistance through their central office. It is the smaller districts (e.g., those without physical education consultants or coordinators) who have to initiate specific help for teachers to develop effective gymnastic programs.

Summary.

While the preceding pages do not represent an exhaustive explanation of implementation, they clearly indicate that there are common elements that can influence the direction and extent of educational
change. The purpose of this review of implementation was to present certain factors that appear to be significant in educational change, especially as it relates to the teaching of gymnastics.

In this study, the work of Fullan (1982) has been shown to be particularly relevant, especially when he notes that:

The characteristics of the nature of the change, the make-up of the local district, the character of individual schools and teachers, and the existence and form of external relationships interact to produce conditions for change or non-change. It takes a fortunate combination of the right factors — a critical mass — to support and guide the process of resocialization which respects the maintenance needs of individuals and groups and at the same time facilitates, stimulates, prods people to change through a process of incremental and decremental fits and starts on the way to institutionalizing or discontinuing the change in question" (p. 79).

Thus, Fullan's model appears to provide a useful conceptualization of the analysis of implementation factors as they relate to the teaching of gymnastics.

Additional factors specific to gymnastics.

Each area of curriculum change has its own specific characteristics. The teaching of gymnastics is characterized by a concern for the safety of performers, and this factor should be considered as
important as other factors outlined in the previous section.

There are numerous references in the literature to the safety aspects of gymnastics (e.g., Morison, 1969; Dauer & Pangrazi, 1983; Kirchner, 1985; Graham et al., 1980), but very few address the topic in terms of a factor that could influence a teacher's practice. Graham et al. (1980) have suggested that "Some teachers avoid gymnastics because they are concerned about the safety of the children and are afraid that children might be injured" (p. 146). Warrell (1978) has also indicated that "Many beginning teachers are quite rightly concerned about safety in the gymnasium and question their competence to prevent accidents" (p. 42).

The concern of teachers for the safety of their students and the resulting consequences of teacher liability should not be relegated to that of minimal importance. It should be afforded equal consideration when considering factors that affect educational change and the teaching of gymnastics.

2.6 Summary

This review has sought to establish a clearer conceptualization of the complexities of gymnastics instruction and thereby gain a clearer understanding of the teaching of gymnastics from the view of the
teacher. In order to address this purpose, the following areas have provided a foci:

1. An examination of gymnastics and gymnastics instruction from an historical perspective;
2. An examination of the role of gymnastics in the school context;
3. An examination of current trends in gymnastics instruction; and
4. An examination of factors which influence teachers in their decisions concerning the teaching of gymnastics.

An historical perspective showed how gymnastics instruction in the schools has evolved to its present forms of Olympic gymnastics and educational gymnastics. An examination of the role of gymnastics in the school context presented possible insights into the identification of rationales that teachers form when making decisions concerning gymnastics as part of a curriculum. The literature related to current trends in gymnastics suggested that the approach to the teaching of gymnastics could be changing. This change would see less of a distinction between Olympic gymnastics and educational gymnastics and would see an approach that combines the challenge of Olympic gymnastics but using the methodology favoured with educational gymnastics.
The final focal area of the literature review concerned educational change as it relates specifically to gymnastics. The relatively small amount of studies that were found specifically dealing with gymnastics necessitated an investigation of the general literature that has identified factors influencing successful change. Studies that identified specific factors positively associated with educational change and, studies that have identified general factors concerning successful educational change, were discussed. The commonality of the elements identified in the literature have been pulled together by Fullan (1982), and it was his model of 15 factors which influence educational change that formed the conceptual framework of this study. In addition, characteristics specific to gymnastics that could have a direct bearing on educational change were identified and reviewed.
CHAPTER 3

Methodology

3.1 Introduction

This study required data concerning the rationale teachers give for compliance or non-compliance with curriculum guidelines in the teaching of elementary school gymnastics. Two Lower Mainland school districts in the Province of British Columbia were approached for permission to distribute questionnaires to teachers. One district was somewhat smaller than the other, but each district had unique characteristics (e.g., in support services) that might help explain the question of compliance or non-compliance with curriculum guidelines.

Because data were required from a large sample of teachers, it was felt the approach that would best serve this purpose was the 'mail questionnaire'.

3.2 Population

The population to which inferences are to be made consists of generalist primary teachers responsible for teaching physical education to their homeroom
classes in the British Columbia public school system in the Lower Mainland and other similar urban school districts.

3.3 Sample

District A.

The directory of elementary schools in this district was numbered from 1 to 84. Using a random number table, a list of 21 schools was obtained and all 100 primary teachers in these schools were included in the population sample.

District B.

All 32 primary teachers were selected from the nine elementary schools with primary divisions in this district. This number constituted 100 percent of the teachers of the primary grades.

3.4 Development of the questionnaire

Initial construction of the questionnaire followed discussions with elementary school teachers and experts in the field of physical education in schools and universities, as well as examining related questionnaire literature, such as the British Columbia Physical Education Teacher Questionnaire (Carre, 1980). A preliminary testing of this initial draft was made on an informal basis with teachers from
District A not eligible in the sample. This draft had spaces for respondents to make additional comments and, from an analysis of the returned questionnaires, appropriate additions, deletions, and modifications were performed.

The revised questionnaire (see Appendix A) was then pilot tested in December, 1985, with primary teachers from a third school district in the Lower Mainland who met the criteria stipulated in section 1.4. Twenty questionnaires were distributed and 14 were returned for a return rate of 70 percent. The returns contained several useful comments and, on the basis of these and discussions with the author's research committee, changes were made to questions and the format of the questionnaire.

The final questionnaire (Appendix B) contained two sections. The first section was designed to gather information concerning factors that teachers identified as being important determinants in the teaching of gymnastics. A Likert-type scale was used for this section, the available responses being; Strongly Agree (SA), Agree (A), Uncertain (U), Disagree (D), and Strongly Disagree (SD). All items required a circle response.

The five responses SA, A, U, D, and SD were weighted one, two, three, four, and five respectively for tabulation. The weighting for the two negative
questions (numbers four and 12) was reversed so that the responses for SA, A, U, D, and SD were weighted five, four, three, two and one respectively for tabulation. This was done to facilitate easier compilation and analysis of the data, and the results from this section are presented in chapter four. An additional question in this section asked respondents to identify any additional reasons they had for teaching or not teaching gymnastics.

The second section of the questionnaire provided for demographic data related to gender, age, number of years of teaching experience, and grade level taught. Respondents were also asked to indicate the proportion of physical education time that involved gymnastics instruction, the frequency and total minutes per week their class received physical education, and whether they had received pre-service training in gymnastics. An additional question asked the respondents to indicate three different activities they would normally include in their gymnastics classes. The purpose of this section was to identify the proportion of a physical education program that teachers were allocating to the curriculum activity of gymnastics. In addition, this section also provided information concerning factors that could influence teachers in the teaching of gymnastics. Additional data in this section provided information that could be used in a
discussion of the results. Items in this section were to be answered with a check mark or as indicated in the instructions. Time for completion of the questionnaire was estimated at approximately fifteen minutes.

The questionnaire was distributed to the selected sample in January, 1986. The reason for choosing this time of the school year was that the researcher felt, from personal experience and in discussions with colleagues, that gymnastics instruction was at its peak during the winter term. Questions relating to gymnastics instruction, it was reasoned, would be at an optimum level with respect to relevancy and would minimize response error as a function of memory.

3.5 Procedures

Permission to conduct this study was sought and obtained from the Central Office administrators in both school districts. In addition, permission to conduct the study was obtained from the University of British Columbia Ethics Committee.

The questionnaire, with a letter explaining the purpose of the study and ensuring respondents' anonymity (see Appendix B), was distributed in January, 1986 to the teachers identified in the sample. The questionnaires were delivered by hand to each school in both districts. In District A, a
questionnaire and a return, addressed envelope, was placed in the personal box of each sample teacher. In District B, the author was able to place the questionnaire, with a return, addressed envelope in the personal boxes of teachers in only six of the nine schools. In the other three schools, either a secretary or the principal insisted on taking charge of the distribution of the questionnaire.

Since those to be surveyed were to remain anonymous to the researcher, procedures to maximize the response rate were as follows:

1. All return envelopes were addressed to the researcher. Subjects in District A were encouraged to use the school mail system to return their questionnaires. Subjects in District B were provided with a stamped, addressed envelope in order to return their questionnaires.

2. A follow-up letter was placed in the boxes of all subjects after a period of 10 days. This was done in District A using a teacher known personally to the author in each school. In District B, school secretaries agreed to perform this task.

3. The contact in District A was phoned after a further period of 10 days and asked to make personal contact with the subjects concerning the questionnaire. In District B, a follow-up letter was
sent to the principal of each school in the district.

Great care was taken to impress upon the principals, school secretaries, and personal contacts in all schools that the anonymity of the subjects was of utmost importance. Thus, in each case of a follow-up, all subjects were contacted with no attempt to determine whether completed questionnaires had already been returned.

3.6 Data Analysis

The various responses to items 1-14 from Part I and 1-7 from Part II of the survey instrument, as well as the responses from each district were assigned a number which was transferred to a Fortran coding sheet. This information was input and verified on the I.B.M/M.T.S. at the University of British Columbia Computing Center.

The data were treated using the Statistical Package for the Social Sciences (S.P.S.S.) Descriptive statistics of frequency distribution, mean, standard deviation, and relative and adjusted percentages were computed.

The S.P.S.S. program permitted further manipulation of the responses to the items in the questionnaire as follows:

1. One way analysis of variance (ANOVA) between
the districts for each of the statements 1-14 on Part I of the survey instrument was performed to determine whether the means of the samples were significantly different from each other.

2. Cross tabulation of the data between statements 1-14 on Part I and Districts A and B was performed.

3. A one sample chi-square test was used to determine whether the frequency of response to the proportion of the total physical education program that involves gymnastics instruction was significantly different to that expected by chance.

4. One way analysis of variance (ANOVA) between the districts and item 5 on Part II of the questionnaire was performed to determine whether the means of the sample were significantly different from each other.

5. Cross-tabulation of the data using the chi-square test of association between statements 1-14 on Part I and item 5 on Part II was performed to determine if there was any significant relationship between factors identified as determinants in the amount of time allocated to gymnastics and the proportion of total physical education program that involves gymnastics instruction.

6. One way analysis of variance (ANOVA) between the districts for each of the items 2, 4, and 7 on
Part II of the questionnaire was performed to determine whether the means of the samples were significantly different from each other.

7. Cross-tabulation of the data using the chi-square test of association between item 5 on Part II and items 2, 4, and 7 on Part II was performed to determine if there was any significant relationship between the proportion of total physical education program that involves gymnastics instruction and age, grade level taught, and pre-service training of teachers.

Additional findings included data from Part II of the questionnaire. These data were tabulated to permit analysis of the samples from each district as well to provide information to be used in a discussion of the results.
CHAPTER 4

The Results of the Study

4.1 Overview

The purpose of this study was to examine teacher rationale for compliance or non-compliance with curriculum guidelines in the teaching of elementary school gymnastics. This study used a questionnaire to establish:

1. How much time is given by primary teachers to the teaching of gymnastics to their homeroom classes.

2. Factors which primary teachers identify as being important determinants in the amount of time they allocate to the teaching of gymnastics.

This chapter details the analysis of the data obtained from the 74 completed questionnaires. Section 4.2 reports the questionnaire return rate. In sections 4.3 and 4.4 the data related to the two major
goals of this study are analyzed: Additional findings concerning Part II of the questionnaire are presented in section 4.5.

4.2 Questionnaire Return Rate

Table 1

<table>
<thead>
<tr>
<th>District</th>
<th>Distributed</th>
<th>Returned</th>
<th>% Returned</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>100</td>
<td>58</td>
<td>58</td>
</tr>
<tr>
<td>B</td>
<td>32</td>
<td>16</td>
<td>50</td>
</tr>
<tr>
<td>A+B</td>
<td>132</td>
<td>74</td>
<td>56</td>
</tr>
</tbody>
</table>

Table 1 shows that 56% of the questionnaires were returned for analysis.

4.3 Time Allocation for Gymnastics

The first question this study undertook to answer was:

How much time is given by primary teachers to the teaching of gymnastics to their homeroom classes?

The responses to item five on the section of the questionnaire (Part II) concerning demographic data were analyzed and tabulated (Table 2) to obtain an answer for this question. The mean score was derived by assigning the following numerical values: 0%=1 to
30% = 7. A one sample chi-square test was used to determine whether the frequency of response was significantly different (α = .05) to that expected by chance. The obtained $\chi^2(6, N = 74) = 20.22, p < .05$ was statistically significant.

Table 2

<table>
<thead>
<tr>
<th>District</th>
<th>0%</th>
<th>5%</th>
<th>10%</th>
<th>15%</th>
<th>20%</th>
<th>25%</th>
<th>30%</th>
<th>N</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>10</td>
<td>28</td>
<td>24</td>
<td>12</td>
<td>14</td>
<td>3</td>
<td>9</td>
<td>58</td>
<td>3.36</td>
</tr>
<tr>
<td>B</td>
<td>25</td>
<td>25</td>
<td>19</td>
<td>13</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>16</td>
<td>2.94</td>
</tr>
<tr>
<td>A+B</td>
<td>14</td>
<td>27</td>
<td>23</td>
<td>12</td>
<td>12</td>
<td>4</td>
<td>8</td>
<td>74</td>
<td>3.27</td>
</tr>
</tbody>
</table>

Table 2 shows that 64% of teachers surveyed allocated about 10% or less of their program time to gymnastics instruction, and 41% allocated about five percent or less. Eight percent of the sample approached a level of about 30% instruction time being given to gymnastics. In District B, 25% of the respondents offered no instruction to students in gymnastics.
4.4 Factors influencing time allocation

Introduction.

This section is divided into two parts. The first part summarizes the data concerning teachers' perceptions about statements that could influence time allocation for gymnastics. The second part uses this initial data, together with teachers' responses from the second section of the questionnaire, to determine factors that primary teachers identify as being important determinants in the amount of time they allocate to the teaching of gymnastics.

Teachers' perceptions about factors influencing time allocation.

In Part I of the questionnaire, teachers were asked to respond to 14 statements previously identified as important factors in determining the proportion of physical education program time that would involve gymnastics instruction. The responses to these statements from individual school districts, and the total sample (N), are presented in tables 3 - 16. The mean score (M) was derived by assigning the following numerical values: SA=1 to SD=5. A one way analysis of variance for each of these 14 statements (ANOVA p<.05) was performed to determine whether the mean responses from each district showed any statistically significant differences.
Table 3
Percentage Scale Response to Statement 1: I enjoy teaching gymnastics to my students.

<table>
<thead>
<tr>
<th>District</th>
<th>SA</th>
<th>A</th>
<th>U</th>
<th>D</th>
<th>SD</th>
<th>N</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>18</td>
<td>46</td>
<td>25</td>
<td>9</td>
<td>1</td>
<td>56</td>
<td>2.30</td>
</tr>
<tr>
<td>B</td>
<td>21</td>
<td>50</td>
<td>14</td>
<td>14</td>
<td>0</td>
<td>14</td>
<td>2.21</td>
</tr>
<tr>
<td>A+B</td>
<td>19</td>
<td>47</td>
<td>23</td>
<td>10</td>
<td>1</td>
<td>70</td>
<td>2.29</td>
</tr>
</tbody>
</table>

Table 3 indicates that the majority of respondents in both districts (66%) enjoyed teaching gymnastics to their students. Only 11% indicated they did not enjoy teaching it to their students. No statistically significant difference between the means of each district existed \[ F(1, 69) = .10, p>.05 \].

Table 4
Percentage Scale Response to Statement 2: My students enjoy participating in gymnastics activities.

<table>
<thead>
<tr>
<th>District</th>
<th>SA</th>
<th>A</th>
<th>U</th>
<th>D</th>
<th>SD</th>
<th>N</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>38</td>
<td>52</td>
<td>11</td>
<td>0</td>
<td>0</td>
<td>56</td>
<td>1.73</td>
</tr>
<tr>
<td>B</td>
<td>21</td>
<td>79</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>14</td>
<td>1.79</td>
</tr>
<tr>
<td>A+B</td>
<td>34</td>
<td>57</td>
<td>9</td>
<td>0</td>
<td>0</td>
<td>70</td>
<td>1.74</td>
</tr>
</tbody>
</table>

Table 4 shows a strong majority of
respondents either strongly agreed (34%) or agreed (57%) that their students enjoyed gymnastics activities. The data also shows there was no disagreement from any teacher in the sample on this statement. The means of the samples from each district did not show any statistically significant difference \[ F(1, 68) = .09, p>.05 \].

Table 5
Percentage Scale Response to Statement 3: I offer gymnastics as part of my overall program because it is expected at my school.

<table>
<thead>
<tr>
<th>District</th>
<th>SA</th>
<th>A</th>
<th>U</th>
<th>D</th>
<th>SD</th>
<th>N</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>9</td>
<td>20</td>
<td>27</td>
<td>36</td>
<td>7</td>
<td>55</td>
<td>3.13</td>
</tr>
<tr>
<td>B</td>
<td>7</td>
<td>7</td>
<td>7</td>
<td>64</td>
<td>14</td>
<td>14</td>
<td>3.71</td>
</tr>
<tr>
<td>A+B</td>
<td>9</td>
<td>17</td>
<td>23</td>
<td>42</td>
<td>9</td>
<td>69</td>
<td>3.25</td>
</tr>
</tbody>
</table>

Table 5 indicates that the majority of the respondents felt there was not an expectation at their school that gymnastics be offered. A higher proportion of teachers in District A (29%) compared to District B (14%) either strongly agreed or agreed with this statement. Conversely, teachers in District B (78%) were in stronger disagreement with this statement than their counterparts in District A (43%).
However, the districts did not differ significantly from one another in their mean responses to this statement [$F(1, 67) = 3.18$, $p > .05$].

Table 6

**Percentage Scale Response to Statement 4: I do not have the competence to instruct students in gymnastics.**

<table>
<thead>
<tr>
<th>Scale</th>
<th>District</th>
<th>SA</th>
<th>A</th>
<th>U</th>
<th>D</th>
<th>SD</th>
<th>N</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>11</td>
<td>18</td>
<td>25</td>
<td>32</td>
<td>14</td>
<td>56</td>
<td>3.21</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>33</td>
<td>13</td>
<td>33</td>
<td>13</td>
<td>7</td>
<td>15</td>
<td>2.47</td>
</tr>
<tr>
<td></td>
<td>A+B</td>
<td>16</td>
<td>17</td>
<td>27</td>
<td>28</td>
<td>13</td>
<td>71</td>
<td>3.05</td>
</tr>
</tbody>
</table>

Table 6 shows that 41% of the total respondents disagreed with the statement and felt that they had the competence to instruct students in gymnastics. There was a statistically significant difference $F(1, 69) = 5.48$, $p < .05$ between the mean responses of each district to this statement. In District A, 46% of those surveyed either strongly disagreed or disagreed with the notion of competence, while in District B, the same level of disagreement was shown by only 20% of those surveyed.
Table 7

Percentage Scale Response to Statement 5: I see great value to the students in participating in gymnastics.

<table>
<thead>
<tr>
<th>District</th>
<th>SA</th>
<th>A</th>
<th>U</th>
<th>D</th>
<th>SD</th>
<th>N</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>52</td>
<td>38</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>56</td>
<td>1.61</td>
</tr>
<tr>
<td>B</td>
<td>29</td>
<td>57</td>
<td>14</td>
<td>0</td>
<td>0</td>
<td>14</td>
<td>1.86</td>
</tr>
<tr>
<td>A+B</td>
<td>47</td>
<td>41</td>
<td>10</td>
<td>1</td>
<td>0</td>
<td>70</td>
<td>1.66</td>
</tr>
</tbody>
</table>

In Table 7 it shows that the majority of teachers in both school districts (88%) were in agreement as to the value to students of participating in gymnastics. In District A, over half the respondents (52%) showed strong agreement with this statement. No statistically significant difference existed between the districts in their mean responses [F(1, 68) = 1.36, p>.05].
Table 8
Percentage Scale Response to Statement 6: There is adequate in-service offered for gymnastics in my district.

<table>
<thead>
<tr>
<th>District</th>
<th>SA</th>
<th>A</th>
<th>U</th>
<th>D</th>
<th>SD</th>
<th>N</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>9</td>
<td>20</td>
<td>45</td>
<td>20</td>
<td>7</td>
<td>56</td>
<td>2.96</td>
</tr>
<tr>
<td>B</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>47</td>
<td>53</td>
<td>15</td>
<td>4.53</td>
</tr>
<tr>
<td>A+B</td>
<td>7</td>
<td>15</td>
<td>34</td>
<td>24</td>
<td>16</td>
<td>71</td>
<td>3.30</td>
</tr>
</tbody>
</table>

A statistically significant difference \( F(1, 69) = 32.59, \ p<.05 \) in Table 8 is shown between the districts in their mean responses to this statement. Teachers in District A were evenly split on their agreement (29%) or disagreement (27%), but 100% of teachers in District B responded that they either disagreed or strongly disagreed with the adequacy of in-service offered for gymnastics in their district.
Table 9

**Percentage Scale Response to Statement 7:** There are adequate print resources for gymnastics instruction in my school.

<table>
<thead>
<tr>
<th>District</th>
<th>SA</th>
<th>A</th>
<th>U</th>
<th>D</th>
<th>SD</th>
<th>N</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>13</td>
<td>34</td>
<td>36</td>
<td>13</td>
<td>5</td>
<td>56</td>
<td>2.64</td>
</tr>
<tr>
<td>B</td>
<td>0</td>
<td>27</td>
<td>47</td>
<td>20</td>
<td>7</td>
<td>15</td>
<td>3.0</td>
</tr>
<tr>
<td>A+B</td>
<td>10</td>
<td>32</td>
<td>38</td>
<td>14</td>
<td>6</td>
<td>71</td>
<td>2.73</td>
</tr>
</tbody>
</table>

Table 9 shows that the respondents from District A (47%) were more in agreement with this statement than their counterparts in District B (27%); however the difference between the means of the groups was not statistically significant \[F(1, 69) = 2.10, p>.05\]. There are a large number of respondents in District A (36%) and District B (47%) who are uncertain as to whether there are adequate print resources for gymnastics instruction at their schools.
Table 10

Percentage Scale Response to Statement 8: The local community (parents & others) expects me to offer gymnastics as part of my overall program.

<table>
<thead>
<tr>
<th>District</th>
<th>SA</th>
<th>A</th>
<th>U</th>
<th>D</th>
<th>SD</th>
<th>N</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>2</td>
<td>13</td>
<td>55</td>
<td>25</td>
<td>5</td>
<td>56</td>
<td>3.20</td>
</tr>
<tr>
<td>B</td>
<td>7</td>
<td>20</td>
<td>20</td>
<td>33</td>
<td>20</td>
<td>15</td>
<td>3.40</td>
</tr>
<tr>
<td>A+B</td>
<td>3</td>
<td>14</td>
<td>46</td>
<td>26</td>
<td>8</td>
<td>71</td>
<td>3.24</td>
</tr>
</tbody>
</table>

Table 10 indicates that in District A, 30% of the respondents were in disagreement that there was a community expectation for gymnastics instruction. However, in District B, this disagreement almost doubled to 53%. Over half of those surveyed in District A (55%) were uncertain as to whether the community does expect them to offer gymnastics instruction as part of their overall program. Differences between the means of the groups were not statistically significant \[F(1, 69) = .60, p>.05\].
Table 11

Percentage Scale Response to Statement 9: My concern for teacher liability limits the extent to which I offer gymnastics instruction.

<table>
<thead>
<tr>
<th>District</th>
<th>SA</th>
<th>A</th>
<th>U</th>
<th>D</th>
<th>SD</th>
<th>N</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>17</td>
<td>48</td>
<td>12</td>
<td>17</td>
<td>5</td>
<td>58</td>
<td>2.45</td>
</tr>
<tr>
<td>B</td>
<td>56</td>
<td>25</td>
<td>6</td>
<td>13</td>
<td>0</td>
<td>16</td>
<td>1.75</td>
</tr>
<tr>
<td>A+B</td>
<td>26</td>
<td>43</td>
<td>11</td>
<td>16</td>
<td>4</td>
<td>74</td>
<td>2.30</td>
</tr>
</tbody>
</table>

Table 11 indicates that the majority of teachers (69%) in Districts A & B agreed that their concern for teacher liability limited the extent to which they offered gymnastics instruction. Teachers in District A appeared to show less concern (65%) than their counterparts in District B (81%), and the mean responses between each district did show a statistically significant difference \( F(1, 72) = 4.93, p<.05 \).
Table 12

**Percentage Scale Response to Statement 10: I consider the personal ability to demonstrate gymnastics an essential requirement for gymnastics instruction.**

<table>
<thead>
<tr>
<th>Scale</th>
<th>District</th>
<th>SA</th>
<th>A</th>
<th>U</th>
<th>D</th>
<th>SD</th>
<th>N</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>9</td>
<td>25</td>
<td>14</td>
<td>46</td>
<td>5</td>
<td>56</td>
<td>3.14</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>0</td>
<td>33</td>
<td>20</td>
<td>33</td>
<td>13</td>
<td>15</td>
<td>3.27</td>
</tr>
<tr>
<td></td>
<td>A+B</td>
<td>7</td>
<td>27</td>
<td>16</td>
<td>44</td>
<td>7</td>
<td>71</td>
<td>3.17</td>
</tr>
</tbody>
</table>

Table 12 shows that the majority of teachers (51%) surveyed were in disagreement with this statement. However, there were also a large percentage (34%) who indicated an agreement that there was a requirement in gymnastics to be able to personally demonstrate. The districts were evenly matched in their agreement or disagreement with the statement. There was no statistically significant difference between the means for each district \( F(1, 69) = .14, p > .05 \).
Table 13

Percentage Scale Response to Statement 11: My concern for student safety limits the extent to which I offer gymnastics instruction.

<table>
<thead>
<tr>
<th>District</th>
<th>SA</th>
<th>A</th>
<th>U</th>
<th>D</th>
<th>SD</th>
<th>N</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>26</td>
<td>50</td>
<td>10</td>
<td>10</td>
<td>3</td>
<td>58</td>
<td>2.16</td>
</tr>
<tr>
<td>B</td>
<td>50</td>
<td>40</td>
<td>0</td>
<td>6</td>
<td>6</td>
<td>16</td>
<td>1.81</td>
</tr>
<tr>
<td>A+B</td>
<td>31</td>
<td>47</td>
<td>8</td>
<td>10</td>
<td>4</td>
<td>74</td>
<td>2.08</td>
</tr>
</tbody>
</table>

It appears in Table 13 that teachers in both school districts have a concern for student safety as 78% either strongly agreed or agreed with the statement. There was a greater concern in District B as evidenced by the agreement response (90%) compared to District A (76%). However, the differences between the means did not exhibit any statistically significant differences \( F(1, 72) = 1.29, p > .05 \).
Table 14

Percentage Scale Response to Statement 12: Our school facilities are not adequate for the gymnastics program I offer my students.

<table>
<thead>
<tr>
<th>Scale</th>
<th>District</th>
<th>A</th>
<th>B</th>
<th>U</th>
<th>D</th>
<th>SD</th>
<th>N</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>4</td>
<td>7</td>
<td>11</td>
<td>14</td>
<td>66</td>
<td>5</td>
<td>56</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>7</td>
<td>0</td>
<td>13</td>
<td>66</td>
<td>13</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>A+B</td>
<td>4</td>
<td>9</td>
<td>14</td>
<td>66</td>
<td>7</td>
<td>71</td>
<td>71</td>
</tr>
</tbody>
</table>

Table 14 indicates that teachers in both District A (71%) and District B (79%) either disagreed or strongly disagreed that their facilities were not adequate for the gymnastics program they offered their students. There was no statistically significant difference between the mean responses of the two districts \( F(1, 69) = .65, p>.05 \).
Table 15

Percentage Scale Response to Statement 13: I would teach more gymnastics if there was at least one person on staff who was qualified to offer advice.

<table>
<thead>
<tr>
<th>District</th>
<th>Scale</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>SA</td>
<td>A</td>
<td>U</td>
<td>D</td>
<td>SD</td>
<td>N</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>30</td>
<td>23</td>
<td>39</td>
<td>4</td>
<td>56</td>
<td>3.09</td>
</tr>
<tr>
<td>B</td>
<td>28</td>
<td>36</td>
<td>21</td>
<td>14</td>
<td>0</td>
<td>14</td>
<td>2.21</td>
</tr>
<tr>
<td>A+B</td>
<td>8</td>
<td>30</td>
<td>22</td>
<td>32</td>
<td>3</td>
<td>70</td>
<td>2.91</td>
</tr>
</tbody>
</table>

Overall, the responses to the statement in Table 15 indicate that teachers were quite evenly split on their agreement (38%) or disagreement (35%) as to the influence a qualified person on staff would have on the amount of time they taught gymnastics. However, the respondents in District B (64%) were almost double in their agreement to this statement than their counterparts in District A (34%). The means from each district did show a statistically significant difference [F(1, 68) = 8.46, p<.05].
Table 16

Percentage Scale Response to Statement 14: The complexities of organizing pupils and equipment limits the extent to which I offer gymnastics instruction.

<table>
<thead>
<tr>
<th>Scale</th>
<th>District</th>
<th>SA</th>
<th>A</th>
<th>U</th>
<th>D</th>
<th>SD</th>
<th>N</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>11</td>
<td>41</td>
<td>13</td>
<td>27</td>
<td>9</td>
<td>56</td>
<td>2.82</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>7</td>
<td>50</td>
<td>7</td>
<td>29</td>
<td>7</td>
<td>14</td>
<td>2.79</td>
</tr>
<tr>
<td></td>
<td>A+B</td>
<td>10</td>
<td>43</td>
<td>11</td>
<td>27</td>
<td>9</td>
<td>70</td>
<td>2.81</td>
</tr>
</tbody>
</table>

Fifty-three percent of the respondents in Table 16 indicated that they either agreed or strongly agreed that their gymnastics instruction was limited by the complexities of organization. However, 36% also indicated the complexities did not limit the extent of their instruction. The responses of each school district were evenly matched and no statistically significant difference between the means existed \[F(1, 68) = .01, p>.05\].

Analysis of the factors that influence time allocation.

A decision was made to reduce the seven categories of time to three. The first grouping "About 0-10%" was determined by combining the responses of the original categories of "None at all", 
"About 5\%", and "About 10\%". The second grouping "About 15-20\%" was determined by combining responses of the original categories of "About 15\%" and "About 20\%". The third grouping "About 25-30\%" was determined by combining the original categories of "About 25\%" and "About 30\%".

In addition, the five possible responses of statements 1-14 on Part II of the questionnaire were reduced to three distinct groups. "Agree" was determined by combining the original categories of "Strongly Agree" and "Agree". "Disagree" was determined by combining the original categories of "Disagree" and "Strongly Disagree". The category of "Uncertain" remained as "Uncertain".

It was accepted that the practice of combining categories can affect the randomness of the sample, resulting in unknown consequences to the inferences drawn (Hays, 1973). However, the decision to logically combine these categories was made in order to raise the expected frequencies to an acceptable size that approached the restrictions of a chi-square test.

Cross-tabulation of the data between time spent teaching gymnastics (item 5, Part II) and statements concerning teachers' perceptions about factors that could influence this time (statements 1-14, Part I) were performed. These results, the total sample( \( N \),
and a mean score (\( M \)) are presented in tables 17 - 34 (the mean score was derived from assigning the following numerical values: Agree = 1 to Disagree = 3).

Cross-tabulation of the data between the time spent teaching gymnastics (item 5, Part II) and age, grade level taught, and pre-service training (items 2, 4 & 7 on Part II) were also performed. These results, the total sample (\( N \)), and a mean score (\( M \)) are presented in tables 35 - 37 (the mean score was derived from assigning the following numerical values: Table 35, 20-24 = 1 to 54+ = 5; Table 36, Yes = 1 to No = 2; Table 37, Grade 1 = 1 to Grade 1/2/3 = 6). The chi-square test of association was run to determine if there was any statistically significant relationship between the proportion of total physical education program that involves gymnastics instruction and each of the 14 factors and three items. A level of significance was set at .05.

It has been shown that a statistically significant difference (\( p < .05 \)) existed between districts in their mean responses to statements four, six, nine, and thirteen on Part I of the questionnaire. Thus, in the analysis of these statements, the variable of District was added as a control.
Table 17

Cross-tabulation of Time Allocation and Percentage

Scale Response to Statement 1: I enjoy teaching gymnastics to my students.

<table>
<thead>
<tr>
<th>Scale</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
<th>N</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>About 0-10%</td>
<td>58</td>
<td>26</td>
<td>16</td>
<td>43</td>
<td>1.58</td>
</tr>
<tr>
<td>About 11-20%</td>
<td>77</td>
<td>22</td>
<td>0</td>
<td>18</td>
<td>1.22</td>
</tr>
<tr>
<td>About 21-30%</td>
<td>77</td>
<td>11</td>
<td>11</td>
<td>9</td>
<td>1.33</td>
</tr>
</tbody>
</table>

Table 17 shows there was no statistically significant relationship \( \chi^2(4, N = 70) = 4.60, p > .05 \) between time spent teaching gymnastics and teacher enjoyment of the subject. The majority of teachers in all groupings (58%, 77%, 77%) indicated their enjoyment in teaching gymnastics.
Table 18

Cross-tabulation of Time Allocation and Percentage Scale Response to Statement 2: My students enjoy participating in gymnastics activities.

<table>
<thead>
<tr>
<th>Time</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
<th>N</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>About 0-10%</td>
<td>86</td>
<td>14</td>
<td>0</td>
<td>43</td>
<td>1.14</td>
</tr>
<tr>
<td>About 15-20%</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>18</td>
<td>1.00</td>
</tr>
<tr>
<td>About 25-30%</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>9</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Table 18 shows no statistically significant relationship \[ \chi^2(2, \ N = 70) = 4.12, \ p > .05 \] existed between the time spent teaching gymnastics and teachers' perceptions of student enjoyment of the subject. There was almost unanimous agreement among teachers in that nearly all indicated that their students enjoyed participating in gymnastics.
Table 19  
Cross-tabulation of Time Allocation and Percentage Scale Response to Statement 3: I offer gymnastics as part of my overall program because it is expected at my school.

<table>
<thead>
<tr>
<th>Scale</th>
<th>Time</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
<th>N</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>About 0-10%</td>
<td>17</td>
<td>29</td>
<td>55</td>
<td>42</td>
<td>2.38</td>
</tr>
<tr>
<td></td>
<td>About 15-20%</td>
<td>33</td>
<td>17</td>
<td>50</td>
<td>18</td>
<td>2.17</td>
</tr>
<tr>
<td></td>
<td>About 25-30%</td>
<td>56</td>
<td>11</td>
<td>33</td>
<td>9</td>
<td>1.78</td>
</tr>
</tbody>
</table>

There was no statistically significant relationship $[\chi^2(4, N = 69) = 6.88, p>.05]$ between the amount of time spent teaching gymnastics and the expectation at the school that gymnastics should be taught (Table 19). However, percentage agreement with this statement was observed to increase from 17% to 56% as the time allocated to gymnastics instruction also increased. In addition, 29% of those who taught the least gymnastics (About 0-10%) were uncertain as to the expectancy of gymnastics instruction at the school.
Table 20

Cross-tabulation of Time Allocation and Percentage Scale Response in District A to Statement 4: I do not have the competence to instruct students in gymnastics.

<table>
<thead>
<tr>
<th>Time</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
<th>N</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>About 0-10%</td>
<td>35</td>
<td>29</td>
<td>34</td>
<td>34</td>
<td>2.00</td>
</tr>
<tr>
<td>About 15-20%</td>
<td>20</td>
<td>13</td>
<td>67</td>
<td>15</td>
<td>2.47</td>
</tr>
<tr>
<td>About 25-30%</td>
<td>14</td>
<td>29</td>
<td>57</td>
<td>7</td>
<td>2.43</td>
</tr>
</tbody>
</table>

Table 20 shows no statistically significant relationship \( \chi^2(4, \ N = 56) = 4.94, p>.05 \) existed in this district between teachers' sense of competence for teaching gymnastics and time allocation. The greatest disagreement (67%) came from teachers who taught gymnastics for about 15-20%. Percentage agreement with this statement also diminished as the proportion of time spent teaching gymnastics increased.
Table 21

Cross-tabulation of Time Allocation and Percentage Scale Response in District B to Statement 4: I do not have the competence to instruct students in gymnastics.

<table>
<thead>
<tr>
<th>Time</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
<th>N</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>About 0-10%</td>
<td>70</td>
<td>20</td>
<td>10</td>
<td>10</td>
<td>1.40</td>
</tr>
<tr>
<td>About 15-20%</td>
<td>0</td>
<td>33</td>
<td>67</td>
<td>3</td>
<td>2.67</td>
</tr>
<tr>
<td>About 25-30%</td>
<td>0</td>
<td>100</td>
<td>0</td>
<td>2</td>
<td>2.00</td>
</tr>
</tbody>
</table>

Table 21 indicates a statistically significant relationship in this district \[ \chi^2(4, \, N = 15) = 10.87, \, p<.05 \] existed between teachers' sense of competence for teaching gymnastics and time allocation. Seventy percent of teachers who taught gymnastics from about 0-10% agreed that they felt they did not have the competence to instruct students in gymnastics.
Table 22

Cross-tabulation of Time Allocation and Percentage

Scale Response to Statement 5: I see great value to the students in participating in gymnastics.

<table>
<thead>
<tr>
<th>Scale</th>
<th>Time</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
<th>N</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>About 0-10%</td>
<td>81</td>
<td>16</td>
<td>2</td>
<td>43</td>
<td>1.21</td>
</tr>
<tr>
<td></td>
<td>About 15-20%</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>18</td>
<td>1.00</td>
</tr>
<tr>
<td></td>
<td>About 25-30%</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>9</td>
<td>1.00</td>
</tr>
</tbody>
</table>

In spite of a difference in time (0-30%) spent teaching gymnastics, a large majority (81-100%) of teachers saw great value to the students in gymnastics instruction (Table 22). There was no statistically significant relationship between the variables of time allocation and value in gymnastics to students \[ \chi^2(4, N = 70) = 5.67, p > .05 \].
Cross-tabulation of Time Allocation and Percentage Scale Response in District A to Statement 6: There is adequate in-service offered for gymnastics in my district.

<table>
<thead>
<tr>
<th>Scale</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
<th>N</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>About 0-10%</td>
<td>24</td>
<td>38</td>
<td>38</td>
<td>34</td>
<td>2.15</td>
</tr>
<tr>
<td>About 15-20%</td>
<td>27</td>
<td>60</td>
<td>13</td>
<td>15</td>
<td>1.87</td>
</tr>
<tr>
<td>About 25-30%</td>
<td>57</td>
<td>43</td>
<td>0</td>
<td>7</td>
<td>1.43</td>
</tr>
</tbody>
</table>

In Table 23, the proportion of teachers who feel there is adequate in-service in this district increased (i.e., 24%-57%) as the time spent teaching gymnastics increased. There was a large percentage of teachers in all groups who were uncertain as to the adequacy of the in-service offered in District A. The relationship between in-service and time was not statistically significant \[ \chi^2(4, N = 56) = 7.98, p>.05 \].
Table 24

Cross-tabulation of Time Allocation and Percentage Scale Response in District B to Statement 6: There is adequate in-service offered for gymnastics in my district.

<table>
<thead>
<tr>
<th>Scale</th>
<th>Time</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
<th>N</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>About 0-10%</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>10</td>
<td>3.00</td>
</tr>
<tr>
<td></td>
<td>About 15-20%</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>3</td>
<td>3.00</td>
</tr>
<tr>
<td></td>
<td>About 25-30%</td>
<td>0</td>
<td>0</td>
<td>100</td>
<td>2</td>
<td>3.00</td>
</tr>
</tbody>
</table>

The results in Table 24 indicate that ALL teachers who responded to the survey in District B felt that in spite of the meagre amount of time spent teaching gymnastics, there was inadequate in-service offered in this district.
Table 25

Cross-tabulation of Time Allocation and Percentage Scale Response to Statement 7: There are adequate print resources for gymnastics instruction in my school.

<table>
<thead>
<tr>
<th>Time</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
<th>N</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>About 0-10%</td>
<td>27</td>
<td>43</td>
<td>29</td>
<td>44</td>
<td>2.02</td>
</tr>
<tr>
<td>About 15-20%</td>
<td>72</td>
<td>28</td>
<td>0</td>
<td>18</td>
<td>1.28</td>
</tr>
<tr>
<td>About 25-30%</td>
<td>55</td>
<td>31</td>
<td>11</td>
<td>9</td>
<td>1.56</td>
</tr>
</tbody>
</table>

A statistically significant relationship [$\chi^2(4, N = 71) = 13.44, p<.05$] exists (Table 25) between the time allocated to gymnastics and the adequacy of the print materials in the school. Teachers who taught gymnastics for about 0-10% were equivalent in their agreement (27%) or disagreement (29%) with this statement. However 43% of the teachers in this group also reported their uncertainty. Those who taught gymnastics for about 15-20% (72%) or for about 25-30% (55%) indicated that the print resources in the schools were adequate.
Table 26

Cross-tabulation of Time Allocation and Percentage Scale Response to Statement 8: The local community (parents & others) expects me to offer gymnastics as part of my overall program.

<table>
<thead>
<tr>
<th>Time</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
<th>N</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>About 0-10%</td>
<td>11</td>
<td>45</td>
<td>43</td>
<td>44</td>
<td>2.32</td>
</tr>
<tr>
<td>About 15-20%</td>
<td>33</td>
<td>44</td>
<td>22</td>
<td>18</td>
<td>1.89</td>
</tr>
<tr>
<td>About 25-30%</td>
<td>11</td>
<td>67</td>
<td>22</td>
<td>9</td>
<td>2.11</td>
</tr>
</tbody>
</table>

There was no statistically significant relationship (Table 26) between a local community expectation that gymnastics be taught and time actually allocated to the subject [$\chi^2(4, N = 71) = 6.70, p>.05$]. However, the results indicate that a considerable percentage of respondents in all groups (45%, 44%, 67%) were uncertain as to whether there is a community expectation for gymnastics instruction.
Table 27

Cross-tabulation of Time Allocation and Percentage Scale Response in District A to Statement 9: My concern for teacher liability limits the extent to which I offer gymnastics instruction.

<table>
<thead>
<tr>
<th>Time</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
<th>N</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>About 0-10%</td>
<td>66</td>
<td>8</td>
<td>25</td>
<td>36</td>
<td>1.57</td>
</tr>
<tr>
<td>About 15-20%</td>
<td>67</td>
<td>20</td>
<td>13</td>
<td>15</td>
<td>1.47</td>
</tr>
<tr>
<td>About 25-30%</td>
<td>57</td>
<td>14</td>
<td>29</td>
<td>7</td>
<td>1.71</td>
</tr>
</tbody>
</table>

Table 27 shows no statistically significant relationship \[ \chi^2(4, N = 58) = 2.09, p>.05 \] in District A between teachers' concern for liability and the amount of time spent teaching gymnastics. Over half the teachers in this district in all groups (60%, 67%, 57%) indicated that a concern for teacher liability did limit the amount of time they spent teaching gymnastics.
Table 28

Cross-tabulation of Time Allocation and Percentage Scale Response in District B to Statement 9: My concern for teacher liability limits the extent to which I offer gymnastics instruction.

<table>
<thead>
<tr>
<th>Time</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
<th>N</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>About 0-10%</td>
<td>91</td>
<td>0</td>
<td>9</td>
<td>11</td>
<td>1.19</td>
</tr>
<tr>
<td>About 15-20%</td>
<td>33</td>
<td>33</td>
<td>33</td>
<td>3</td>
<td>2.00</td>
</tr>
<tr>
<td>About 25-30%</td>
<td>100</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Table 28 shows no statistically significant relationship \( \chi^2 (4, \ N = 16) = 6.79, \ p>.05 \) in District B between teachers' concern for teacher liability and the amount of time spent teaching gymnastics. Teachers appeared to be almost unanimous that their concern for teacher liability did limit their gymnastics instruction. Teachers who taught about 15-20% appear to be split on their responses, however these figures should be viewed with caution because the number of responses (\( n = 3 \)) is low.
Table 29

Cross-tabulation of Time Allocation and Percentage Scale Response to Statement 10: I consider the personal ability to demonstrate gymnastics an essential requirement for gymnastics instruction.

<table>
<thead>
<tr>
<th>Time</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
<th>N</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>About 0-10%</td>
<td>36</td>
<td>18</td>
<td>45</td>
<td>44</td>
<td>2.09</td>
</tr>
<tr>
<td>About 15-20%</td>
<td>22</td>
<td>6</td>
<td>72</td>
<td>18</td>
<td>2.50</td>
</tr>
<tr>
<td>About 25-30%</td>
<td>44</td>
<td>22</td>
<td>33</td>
<td>9</td>
<td>1.89</td>
</tr>
</tbody>
</table>

Table 29 shows no statistically significant relationship [$\chi^2(4, \ N = 71) = 5.14, p > .05$] between whether teachers felt it necessary to personally demonstrate gymnastics and the amount of time spent teaching the subject. The percentage of agreement was highest (44%) among those who spent about 25%-30% of their program time on gymnastics instruction.
Table 30

Cross-tabulation of Time Allocation and Percentage Scale Response to Statement 11: My concern for student safety limits the extent to which I offer gymnastics instruction.

<table>
<thead>
<tr>
<th>Time</th>
<th>Scale</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
<th>N</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>About 0-10%</td>
<td></td>
<td>79</td>
<td>6</td>
<td>15</td>
<td>47</td>
<td>1.36</td>
</tr>
<tr>
<td>About 15-20%</td>
<td></td>
<td>72</td>
<td>17</td>
<td>11</td>
<td>18</td>
<td>1.39</td>
</tr>
<tr>
<td>About 25-30%</td>
<td></td>
<td>89</td>
<td>0</td>
<td>11</td>
<td>9</td>
<td>1.22</td>
</tr>
</tbody>
</table>

No statistically significant relationship existed (Table 30) between the amount of time allocated gymnastics and teachers concern for student safety \( \chi^2(4, N = 74) = 2.92, p > .05 \). Teachers in all groups were close in agreement (79%, 72%, 89%) that their concerns limited the extent they offered gymnastics instruction.
Table 31

Cross-tabulation of Time Allocation and Percentage Scale Response to Statement 12: Our school facilities are not adequate for the gymnastics program I offer my students.

<table>
<thead>
<tr>
<th>Time</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
<th>N</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>About 0-10%</td>
<td>14</td>
<td>16</td>
<td>70</td>
<td>44</td>
<td>2.57</td>
</tr>
<tr>
<td>About 15-20%</td>
<td>11</td>
<td>6</td>
<td>83</td>
<td>18</td>
<td>2.72</td>
</tr>
<tr>
<td>About 25-30%</td>
<td>11</td>
<td>22</td>
<td>67</td>
<td>9</td>
<td>2.56</td>
</tr>
</tbody>
</table>

In Table 31, no significant relationship [$\chi^2(4, N = 71) = 1.90, p > .05$] exists between the amount of time teachers allocated to gymnastics and the adequacy of school facilities for teaching gymnastics. The majority of teachers in all groups (70%, 83%, 67%) indicated that the facilities in their schools were adequate for the gymnastics program they offer students.
Table 32

Cross-tabulation of Time Allocation and Percentage Scale Response in District A to Statement 13: I would teach more gymnastics if there was at least one person on staff who was qualified to offer advice.

<table>
<thead>
<tr>
<th>Scale</th>
<th>Time</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
<th>N</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>About 0-10%</td>
<td>38</td>
<td>29</td>
<td>32</td>
<td>34</td>
<td>1.94</td>
</tr>
<tr>
<td></td>
<td>About 15-20%</td>
<td>20</td>
<td>7</td>
<td>63</td>
<td>15</td>
<td>2.47</td>
</tr>
<tr>
<td></td>
<td>About 25-30%</td>
<td>43</td>
<td>14</td>
<td>43</td>
<td>7</td>
<td>2.00</td>
</tr>
</tbody>
</table>

Table 32 shows no significant relationship [\( \chi^2(4, \ N = 56) = 5.50, p>.05 \)] in District A between the time allocated for gymnastics and the availability of someone on a staff who was qualified to offer advice. Sixty seven percent of those who allocated about 0-10% either agreed or were uncertain about this statement. The strongest disagreement (67%) was from teachers who allocated from about 15-20% of their program time to gymnastics.
Table 33

Cross-tabulation of Time Allocation and Percentage Scale Response in District B to Statement 13: I would teach more gymnastics if there was at least one person on staff who was qualified to offer advice.

<table>
<thead>
<tr>
<th>Scale</th>
<th>Time</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
<th>N</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>About 0-10%</td>
<td>67</td>
<td>11</td>
<td>22</td>
<td>9</td>
<td>1.56</td>
</tr>
<tr>
<td></td>
<td>About 15-20%</td>
<td>67</td>
<td>33</td>
<td>0</td>
<td>3</td>
<td>1.33</td>
</tr>
<tr>
<td></td>
<td>About 25-30%</td>
<td>50</td>
<td>50</td>
<td>0</td>
<td>2</td>
<td>1.50</td>
</tr>
</tbody>
</table>

In Table 33, no significant relationship \[ \chi^2(4, N = 14) = 2.59, p > .05 \] in District B exists between the time allocated for gymnastics instruction and the availability of someone on a staff who was qualified to offer advice. The majority of teachers indicated their agreement that a qualified person on staff would increase their time allocation.
Table 34

Cross-tabulation of Time Allocation and Percentage Scale Response to Statement 14: The complexities of organizing pupils & equipment limits the extent to which I offer gymnastics instruction.

<table>
<thead>
<tr>
<th>Time</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
<th>N</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>About 0-10%</td>
<td>51</td>
<td>16</td>
<td>33</td>
<td>43</td>
<td>1.81</td>
</tr>
<tr>
<td>About 15-20%</td>
<td>50</td>
<td>6</td>
<td>44</td>
<td>18</td>
<td>1.94</td>
</tr>
<tr>
<td>About 25-30%</td>
<td>67</td>
<td>0</td>
<td>33</td>
<td>9</td>
<td>1.67</td>
</tr>
</tbody>
</table>

There was no significant relationship (Table 34) between the time allocated for gymnastics instruction and the complexities of organizing pupils and equipment for gymnastics instruction \( \chi^2(4, N = 70) = 3.35, p > .05 \). All groups were relatively even in their agreement (51%, 50%, 67%) or disagreement (33%, 44%, 33%) that these complexities limit the amount of gymnastics instruction they offer.
Table 35

Cross-tabulation of Time Allocation and Percentage Age Distribution.

<table>
<thead>
<tr>
<th>Time</th>
<th>20-34</th>
<th>25-34</th>
<th>35-44</th>
<th>45-54</th>
<th>54+</th>
<th>N</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>About 0-10%</td>
<td>0</td>
<td>17</td>
<td>38</td>
<td>43</td>
<td>2</td>
<td>47</td>
<td>3.30</td>
</tr>
<tr>
<td>About 15-20%</td>
<td>0</td>
<td>28</td>
<td>56</td>
<td>11</td>
<td>6</td>
<td>18</td>
<td>2.94</td>
</tr>
<tr>
<td>About 25-30%</td>
<td>0</td>
<td>33</td>
<td>56</td>
<td>11</td>
<td>0</td>
<td>9</td>
<td>2.78</td>
</tr>
</tbody>
</table>

Table 35 indicates no significant relationship \( \chi^2 \) (6, \( N = 74 \) = 8.79, \( p > .05 \)) between the time allocated for gymnastics instruction and the age of the respondents. In the 45-54 age range, 43% of the respondents taught gymnastics for about 0-10% of their program time. A large majority of teachers (84% & 90%) who taught gymnastics for about 15-20% and about 25-30% respectively were 44 years of age and under.
Table 36

Cross-tabulation of Time Allocation and Pre-Service training.

<table>
<thead>
<tr>
<th>Time</th>
<th>Yes</th>
<th>No</th>
<th>N</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>About 0-10%</td>
<td>28</td>
<td>72</td>
<td>47</td>
<td>1.72</td>
</tr>
<tr>
<td>About 15-20%</td>
<td>72</td>
<td>28</td>
<td>18</td>
<td>1.28</td>
</tr>
<tr>
<td>About 25-30%</td>
<td>66</td>
<td>33</td>
<td>9</td>
<td>1.33</td>
</tr>
</tbody>
</table>

A significant relationship \[\chi^2(2, \ N = 74) = 12.82, \ p<.05\] exists (Table 36) between time allocated to gymnastics and the pre-service of the respondents.

The majority of teachers (72%) who taught gymnastics from about 0-10% of their program time had no pre-service training in gymnastics instruction. The majority of teachers (72% & 66%) who allocated about 15-20% or about 25-30% respectively of their program time had some pre-service training in gymnastics instruction.
Table 37

Cross-tabulation of Time Allocation and Grade Level Taught.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Time</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>1/2</th>
<th>2/3</th>
<th>1/2/3</th>
<th>N</th>
<th>M</th>
</tr>
</thead>
<tbody>
<tr>
<td>About 0-10%</td>
<td>33</td>
<td>17</td>
<td>24</td>
<td>7</td>
<td>9</td>
<td>11</td>
<td>46</td>
<td>2.74</td>
<td></td>
</tr>
<tr>
<td>About 15-20%</td>
<td>29</td>
<td>18</td>
<td>18</td>
<td>6</td>
<td>11</td>
<td>18</td>
<td>17</td>
<td>3.06</td>
<td></td>
</tr>
<tr>
<td>About 25-30%</td>
<td>13</td>
<td>38</td>
<td>13</td>
<td>13</td>
<td>13</td>
<td>13</td>
<td>8</td>
<td>3.13</td>
<td></td>
</tr>
</tbody>
</table>

Table 37 shows no significant relationship \[ \chi^2(10, \ N = 71) = 3.95, \ p > .05 \] between the time allocated to gymnastics instruction and the grade level taught by the respondents.

4.5 Additional Findings

Table 38 presents the weekly frequency of physical education lessons for homeroom classes in each school district. This table indicates that 34 (60%) teachers in District A offered physical education twice per week. In District B, 9 (60%) teachers taught physical education three times per week.
Table 38

Frequency of physical education classes.

<table>
<thead>
<tr>
<th>Frequency/Week</th>
<th>District A</th>
<th>District B</th>
<th>A+B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>34</td>
<td>3</td>
<td>37</td>
</tr>
<tr>
<td>3</td>
<td>7</td>
<td>9</td>
<td>16</td>
</tr>
<tr>
<td>4</td>
<td>8</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>5</td>
<td>7</td>
<td>1</td>
<td>8</td>
</tr>
</tbody>
</table>

\[ N = 57 \ 15 \ 72 \]

Table 39 reports the total number of minutes per week a homeroom class received physical education. This table shows that 25 (46%) teachers in District A offered physical education for a total of 80 minutes per week. In District B, 6 (40%) teachers offered physical education for 120 minutes per week.

Table 39

Total Minutes of physical education per week.

<table>
<thead>
<tr>
<th>Minutes</th>
<th>District A</th>
<th>District B</th>
<th>A+B</th>
</tr>
</thead>
<tbody>
<tr>
<td>35</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>45</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>50</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
</tbody>
</table>

(CONT)
Table 39 (CONT)

**Total Minutes of physical education per week.**

<table>
<thead>
<tr>
<th>Minutes</th>
<th>District A</th>
<th>District B</th>
<th>A+B</th>
</tr>
</thead>
<tbody>
<tr>
<td>60</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>65</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>70</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>80</td>
<td>25</td>
<td>1</td>
<td>26</td>
</tr>
<tr>
<td>90</td>
<td>7</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>100</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>115</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>120</td>
<td>4</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>125</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>130</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>135</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>140</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>150</td>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>160</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>175</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>200</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
</tbody>
</table>

N = 56  15  71

M = 91.07  106.7  94.37
4.6 **Summary**

This chapter has presented an analysis of the major findings of this study. This knowledge will be used in the next chapter to discuss the two major goals of the study.
CHAPTER 5

Discussion of Results

5.1 Overview

This chapter will present a discussion of the results emerging from the analysis of the data. Where appropriate, selected comments from the returned questionnaires will be used to enhance the discussion. Section 5.2 presents a discussion of the analysis of the data relating to the proportion of a physical education program that involves gymnastics instruction. Section 5.3 will discuss the analysis of the data relating to the factors teachers identified as being important determinants in the amount of time they allocated to the teaching of gymnastics. Section 5.4 will discuss any additional results that emerged from the questionnaire and analysis of the data. A brief summary is provided in section 5.5.

5.2 Time Allocation

Physical education curriculum guidelines advocate that students of a primary school age should be receiving gymnastics instruction for 30% of the
allocated program time (Ministry of Education, 1975). The results of this study (Table 2) clearly indicate that students typically received well below this recommended time allotment. Only eight percent of respondents to the survey offered their students gymnastics for about 30% of their physical education program time. Even more revealing is the fact that nearly two-thirds (64%) of the teachers surveyed offered gymnastics for only about 10% or less of the program time. This figure represents a dramatic increase from those reported by Carre (1980). In his study, he discovered that approximately 40% of primary teachers surveyed allocated about 10% or less of their program time to gymnastics instruction.

The results of this study also provide support for the claim by Fullan (1982) that there is an "almost arbitrary variation and emphasis in classrooms on some subjects over the others" (p. 117). His review of the literature indicates that there are numerous studies which show that teachers leave out, or conversely devote huge amounts of time to, certain parts of a curriculum.

The respondents to this study also provided information concerning activities normally included in their classes. This information has been grouped for discussion under appropriate headings that are related to time allocation.
About 5-10% gymnastics.

Teachers who taught gymnastics for about 5-10% of the time indicated a preference for rolling or tumbling, and using the mats; three teachers also said they used the climbing apparatus. Very few reported a thematic approach as described by Williams (1979) but, those who did, showed a distinct preference for the theme of balancing. One teacher in this group described how the lessons were based upon themes, detailing how the knowledge gained on the floor was to be applied on to apparatus. However, this teacher's program consisted of about six periods per year, each period being 40 minutes in length (District A). Another teacher in this group was very specific, indicating that the activities normally included in gymnastics classes would consist of "Forward & backward rolls, headstands, and cartwheels" (District A). Very few of these teachers indicated in their comments the use of a methodology used that characterizes a distinct approach to teaching gymnastics (e.g., see Bilborough & Jones, 1973; or Kirchner, Cunningham, & Warrell, 1970), but one teacher did report that the students were encouraged to explore "different ways to jump, land, roll etc." (District A), and another described the use of "partners to develop routines" (District B).

Commenting specifically on the time allocation,
one teacher in this group indicated on the questionnaire that: "We have a gymnastics programme in our school before school hours. Runs for six weeks in the Spring and Autumn twice a week" (District B). Whether this occurs only in this school cannot be substantiated, although another teacher from this group did write that "I feel that the Rec. Centre offers a good gymnastics program and I provide a more general games/dance program" (District B). The most often reported frequency of the number of times per week a class received physical education was two, and students of this group of teachers received gymnastics for approximately six to ten periods per year, each period averaging about 40 minutes.

About 15-20% gymnastics.

Teachers who taught gymnastics to their students for about 15-20% of the program time also showed a preference for the activities of rolling or tumbling. Very little thematic work (e.g., see Williams, 1979) except balancing was reported by the respondents, and there was little reported use of large apparatus, the exceptions being a "box for vault work-approach, take off, landing" (District A). Work with benches (which Kirchner, 1985 categorizes as large equipment) was very popular, and these were used by the majority of teachers for balancing activities. There was mention
of developing routines or sequences and also of working with partners or in small groups. The most often reported frequency of the number of times per week a class received physical education was two, and students of this group of teachers received gymnastics for about 11 to 17 periods per year, each period being about 35-40 minutes in length.

About 25-30% gymnastics.

Teachers who taught gymnastics for about 25-30% of the physical education program time were the only group to indicate that class activities had a logical sequence. One teacher described the activities normally included in gymnastics classes as involving a warm-up, followed by skill development on the floor or mats, which was then applied at apparatus stationed at various centres in the gymnasium (this type of lesson plan followed closely the framework suggested by Docherty and Morton, 1982). These respondents again showed a preference for the theme of balancing and, although rolling (e.g., forwards and backwards) was also a focus in the responses, one teacher did emphasize that it was taught via a movement education approach (see Kirchner, Cunningham, & Warrell, 1970) that utilized sequencing. The frequency of the number of times per week students of this group of teachers received physical education ranged from 1 to 4 with 3
being the mode. Because there was a wide variation in these numbers it is difficult to generalize as to how many periods per year students in these classes received gymnastics instruction. Students who had physical education three times per week could be receiving gymnastics instruction for between 30-36 periods per year, each period being from 30-40 minutes in length. However, one teacher reported that the homeroom class received physical education for one period per week. This teacher reported a 30% time allocation, which translates into a gymnastics program consisting of about 13 periods per year.

Summary.

Teachers in Districts A and B did not follow curriculum guidelines (Ministry of Education, 1975) in the proportion of a physical education program they allocated for gymnastics instruction. Nearly two-thirds of the respondents to the survey indicated they offered gymnastics for about 10% or less of their physical education program time. Two common gymnastics activities that teachers in both districts reported including in their classes were balancing and rolling; the most frequently used equipment being mats, benches, and climbing apparatus. The variation in time allocation, and the similarity in the type of work listed by all respondents, also shows some
support for the findings of Bott (1985). Her conclusions, which were based upon interviews, analysis of schemes of work, and video recordings made of gymnastics lessons, reported that, even though the time spent on gymnastics was very different, the amount of work reported by the teachers in the schemes was similar.

This study has established that the large majority of teachers surveyed did not follow curriculum guidelines in gymnastics. The focus of this study will now turn to factors the respondents identified as being important determinants in the amount of time they allocated to the teaching of gymnastics.

5.3 The Determinants of Time Allocation

Introduction.
This study adapted Fullan's (1982) model of change to provide a framework for analyzing educational change as it relates specifically to the teaching of gymnastics. The model identifies fifteen factors which are organized into four categories, and a brief description of their import to the context of this study is contained in Chapter 2. In addition, it was also suggested that each area of curriculum change has its own characteristics; and the teaching of gymnastics is characterized by a concern for safety.
Consistent with Fullan's (1982) notion that specific factors can be organized into broad categories, the determinants of time allocation will be discussed under the categories of:

1. Expectations.
2. Teacher efficacy.
4. Teacher knowledge.
5. Safety.
6. Age.

**Expectations.**

Teachers reported no significant relationship between the allocation of time to gymnastics and an expectancy from within the school or the local community that gymnastics be taught. However, agreement with school expectation (see Table 19) did increase from those who taught little gymnastics (i.e., about 0-10%), to those teachers whose programs approached the curriculum guidelines (i.e., about 25-30%).

The literature includes considerable research showing that a principal can have a powerful influence on educational change (e.g., Fullan, 1982), however the study by Berman & McLaughlin (1979) reported that too often the principal does not play an active role in change. Fullan also reports on studies in Canada
which show that at best, only about one-half of school principals provide active instructional leadership in the use of curriculum guidelines. That is not to say that the expectation must come from the principal; many schools initiate programs through teachers themselves. This initiation can result in a collegial expectation that events, fairs, musical productions, and physical education programs be part of the life of the school. Fullan suggests that there are many instances of teachers or project leaders having a strong impact on educational change, but adds that there was usually a supportive principal behind them.

Two teachers illustrated differing levels of expectancy in their additional comments: One teacher said "We have a stations approach set up for the primary grades three times weekly" (District A). At the other end of the time scale, a teacher wrote that "its hard to get a "block" of classes interested in having the gym set up for one day a week for their gym time" (District A). However, the results of this study suggest that there is little expectation from principals and/or staff of the schools investigated that gymnastics be offered to students.

Teachers' perceptions that the community expects gymnastics to be taught were not a significant factor in determining time allocation in this study. In addition, there was general disagreement among
respondents that there is a local community expectation to teach gymnastics (see Table 26). This finding also supports the contention of Fullan (1982) who describes how most school communities do not directly involve themselves in educational change. That is not to say there is no interest, for Fullan also makes the point that "most parents are concerned and interested in programs and changes relating to their own children" (p. 203). The dramatic increase in gymnastics clubs (Johnson, 1985) that is attracting so many youngsters is perhaps providing the need parents could be expressing for gymnastics programs. As one teacher stated "I feel that the Rec. Centre offers a good gymnastics program and I provide a more general games/dance oriented program" (District B). Another teacher offered as an additional reason for not teaching any gymnastics that "Children can take gymnastics at a gymnasium other than the school" (District A). However, if there is a concern within the community, then either this is not being manifest or perceived by teachers, or it is being abated through gymnastics involvement outside the school.

**Teacher efficacy.**

Teacher enjoyment, the perception by teachers of student enjoyment, and the value to students teachers saw in gymnastics instruction were not significant in
influencing the amount of time teachers allocated to gymnastics. Teachers from either end of the time spectrum indicated their enjoyment in teaching gymnastics. One teacher who reported a time allocation of about 5% stated that "it's fun for students and me" (District A), whereas another who reported a time allocation of about 15% commented simply "I like it" (District A). The one negative comment came from a teacher who did not teach any gymnastics and stated categorically that "I don't like it" (District A). However, it should be noted that teacher enjoyment did increase as the time allocation increased, nevertheless, nearly 60% of those who taught gymnastics for only about 0-10% indicated that they enjoyed doing so (see Table 17).

The findings concerning teacher and student enjoyment do not fully support those of Schmidt & Buchmann (1983) who stated that when levels of teacher enjoyment with subjects were high, time allocations for those subjects also tended to be high. Although Schmidt & Buchmann's conclusions were based upon academic subjects, a study on gymnastics by Thompson and Potvin (1983) also indicated that "the success and enjoyment of the children" (p. 15) had an influence on teachers' decisions concerning curriculum. The results of the study reported in this thesis indicate that although the majority of teachers enjoy teaching
gymnastics (see Table 17), and perceive that their students enjoy it (see Table 18), these factors do not appear to significantly influence time allocation.

The respondents in both districts were almost unanimous in their agreement as to the value of gymnastics to the student. Agreement by teachers was shown with a number of authors (e.g., Munrow, 1963; Siedentop et al., 1984), who have cited the physical benefits to students—as one teacher stated "It helps develop flexibility and co-ordination" (District B). Another teacher offered the thought that gymnastics helps "body co-ordination (which is) necessary to a child development" (District B). Some teachers also saw the value of gymnastics as improving a child's self-concept, agreeing with Dauer & Pangrazi (1984) as to the important role that physical education can play in this respect. One teacher wrote that "some students star in gymnastics (and offering it) gives them a chance to demonstrate their skills" (District A). In spite of the overwhelming agreement on the value of gymnastics to students, there was no significant relationship between this factor and time allocation for gymnastics (see Table 22).

What was significant, albeit only in District B, was the relationship between teachers' perception of competence to instruct students and the time they allocate to the teaching of gymnastics (see Table 21).
In this district, seven out of ten teachers who taught gymnastics from about 0-10% felt that they did not have the competence to do so. The study by Schmidt & Buchman (1983) suggested that there was some tendency for teachers who experienced difficulty in teaching academic subjects (i.e., language arts, social studies, mathematics, and science) to allocate less time to them. Although Schmidt & Buchman urge caution with their conclusions, the results of this study suggest that a sense of competence in teaching a non-academic subject does have a relationship with time allocation.

Teachers in District A (see Table 20) did not report the same findings on a sense of competence for gymnastics instruction as their counterparts in District B. The data for District A showed that those who taught gymnastics the least (about 0-10%), were evenly split on their agreement, uncertainty, and disagreement about this perception of competency. In addition, agreement with a sense of competence to instruct students increased as time allocation increased.

Support.

The majority of teachers in both districts agreed that the facilities in their schools were adequate for the gymnastics program they offer (see Table 31). An
analysis of the activities reported as being included in classes showed that teachers require mats, benches, a box; three teachers also indicated that they used climbing apparatus. Only one teacher who did not teach any gymnastics stated that an additional reason for not teaching gymnastics was "almost a complete lack of equipment" (District B).

The complexities of organizing the equipment and pupils did not have any significant relationship to time allocation (see Table 34) but, the majority of all teachers did agree that it limited the extent of their gymnastics instruction. One teacher wrote that "there was inadequate time in which to set up and put away equipment" (District B). Another teacher said "Heavy equipment is time consuming to bring out so I don't use it as often as I'd like to" (District A).

In addition, one teacher referred to the problem of "getting the equipment out for one class and then putting it all away in 30-40 minutes" (District A). Conversely, one teacher strongly disagreed that the complexities of organizing pupils and equipment limited the extent of gymnastics instruction "Because we have a stations approach set up for all the primary grades three times weekly with student helpers" (District A). One teacher's comments did indicate the supportive role a principal or other teachers can play in this regard, writing that "it's hard to get a
"block" of classes interested in having the gym set up for one day a week" (District A). Three of these teachers' comments appear to be suggesting that there should be a school expectancy that gymnastics be taught, but are perhaps receiving no support from other teachers and/or the principal. The fourth teacher's comments suggest there is support from within the school and it is translating into increased time allocation.

The previous comments serve to illustrate how the factors of complexity and school expectancy can possibly interact to affect time allocation. It can be a complex issue to organize gymnastics equipment (especially large and heavy equipment) for one 30-40 minute period but, as one teacher pointed out, it can be done if there is support from within the school.

There was also a significant relationship between time allocation and the adequacy of print resources in both school districts (see Table 25). The majority of teachers who taught gymnastics for about 15-30% agreed that the print resources were adequate, but only about one-quarter of teachers who taught gymnastics for about 10% or less of their program agreed with this statement. In addition nearly half of the teachers who also taught about 0-10% were uncertain about the adequacy of the print resources.
Whether this notion of adequacy referred to the practicality (see Doyle & Ponder, 1977-78; and Thompson & Potvin, 1983) or availability of print resources was not determined by this study. However, the large number of teachers who taught gymnastics for about 10% or less who were uncertain about this question of adequacy could suggest that the practicality of the resources is not the issue— the issue is more one of utilizing a resource book. Although this study agrees with Moody (1982) that "curriculum materials for elementary school physical education abound" (p. 26), it also suggests that a number of teachers who teach about 0-10% are probably unaware of the available print resources. Thompson (1979) has suggested that many curriculum projects remain on school shelves, both unused and unknown to the intended users. This uncertainty of not knowing about the print materials will hinder the development of a gymnastics program for, as Moody points out, "teachers require access to appropriate curriculum materials if quality, sequential programs are to be implemented and maintained" (p. 34).

Only about one-quarter of the teachers in District A who taught gymnastics for about 20% or less of their program time agreed that there was adequate in-service offered in their district (see Table 23). Although the number doubles with teachers who offer
gymnastics for about 25-30% of the program, there are a large proportion of teachers in this district who are uncertain or disagree about the adequacy of in-service. On the other hand, in District B, significance is directed to the fact that ALL teachers perceive in-service to be inadequate in the district (see Table 24). An explanation for the differing responses is suggested by focusing attention on the levels of support available in each district.

Teachers in District B were unanimous (100%) in their disagreement as to the adequacy of in-service. This district does not have a physical education coordinator nor a full- or part-time consultant and, this study would argue that, this limits the scope of in-service offered for gymnastics instruction. This does not imply that there are no opportunities for these teachers to attend some forms of in-service (e.g., primary conferences). However, this study would also argue that these opportunities are limited and are probably of the "one-shot" type with little, if any, follow-up being available. District A, on the other hand, has a full-time physical education coordinator, as well as a teacher who acted as a physical education consultant for two days per week from 1984-1986. Workshops in gymnastics in this district have been offered and some assistance within a school setting was offered by the consultant.
Thus, one explanation for the significant difference in the data between the districts is that the levels of support available are providing in-service that is meeting the needs of some teachers, resulting in a stronger agreement as to the adequacy of in-service offered.

However, the data for this District A also shows that the majority of teachers are uncertain or disagree about the adequacy of in-service offered. One plausible suggestion for this is that in-service and other support offered is not meeting the specific needs of teachers (i.e., beyond a few basic lessons learned at a workshop). This study's scope was not to look at the type of in-service offered, but does have the personal knowledge that nearly all workshops offered in this district were of the one-shot type. Yet a common element in the implementation research literature concerns the need for in-service and support that is on-going, supportive, and not of the one-shot type (Fullan, 1982). If teachers are to be expected to increase their time allocation for gymnastics, in-service activities in these districts might avoid using a one-shot type workshop, and instead investigate models of in-service such as that suggested by Joyce and Showers (1980, 1982). These authors propose that
successful in-service consists of five components: Theory, demonstration, practice, feedback, and application for coaching (for a more detailed successful application of this model, see Moody, 1984). This model of in-service, as Moody has reported, is readily applicable to the physical education class setting where coaching through team-teaching can readily offer on-the-spot advice, encouragement, and can illustrate techniques identified with teaching the curriculum area of gymnastics.

There was also a significant difference between the districts to the statement that teachers would teach more gymnastics if there was someone on staff who could help them. Over two-thirds of the teachers in District B who taught gymnastics for about 20% or less agreed with this statement (see Table 33). This is perhaps indicative of the inadequacy of support (e.g., in-service), and reflects a need for support that is "appropriate...and from a variety of players" (Loucks & Zacchei, 1983, p. 28). That there is less agreement in District A (see Table 32) does suggest that other help (e.g., in-service, availability of a consultant) is possibly partially fulfilling the role of support.

There appears to be a trend emerging, as the discussion of the results of this study unfold, that
some factors appear to be interacting with each other to influence time allocation for gymnastics. The support for this interaction comes from Fullan (1982) who proposes that educators should avoid "thinking of the fifteen factors (that affect educational change) in isolation from each other" (p. 57). This has been suggested during the discussions dealing with expectations and teacher efficacy, and has been further developed with the discussion of support. However, an overall trend that is emerging is one that would link time allocation with levels of teachers' knowledge about the teaching of gymnastics. This study suggests that these levels of knowledge have their base in pre-service training.

Teacher knowledge.

The data analyzed shows there is a significant relationship between time allocation and pre-service training (see Table 36). Nearly three-quarters of the teachers who taught gymnastics for about 10% or less of their program time did not have any pre-service training, whereas only one-third of teachers who taught gymnastics for about 25-30% had no pre-service training. This finding supports the claim of Fullan (1982) that "many elementary teachers are teaching subject areas for which they have little preparation" (p. 117). It also supports the findings of
Carre (1980) whose survey found that 75% of primary teachers had taken no gymnastic courses at all. As one teacher stated "I know very little about this area" (District A), and another offered that a reason for not teaching gymnastics was "lack of qualifications" (District A). A third teacher said "I don't teach it because I am not a P.E. major or athletically trained...to attempt anything beyond the very basics" (District B). On the other hand one teacher who taught gymnastics for 20% added that an additional reason for teaching gymnastics was "I had a good educational gymnastics course at the University of British Columbia" (District A).

Complementing the suggestion the majority of teachers have a limited level of knowledge are reported comments that indicate limited type of activities being included in gymnastics classes. There was a distinct preference for listing the areas of rolling and balancing, especially with those who taught about 10% or less gymnastics. In addition, statements such as those by one teacher that "I cannot be at all stations at once" (District B) or "No spotters available (and I) don't know spotting rules" (District B) do add to the picture that there is a limited scope of knowledge about activities, content, and teaching methodology suggested for children
of this age (e.g., see Williams, 1979; Logsdon et al, 1983; or Kirchner, Cunningham & Warrell, 1970) especially among teachers who teach gymnastics for about 10% or less.

This study proposes that a limited gymnastics knowledge is primarily a consequence of a lack of quality pre-service training. However, it is also suggested that the limited gymnastics knowledge is also being compounded by levels and quality of in-service and other support (e.g., principals and/or consultants), and is possibly contributing to teachers' perceptions of a lack of competence to instruct students in gymnastics. All of these factors appear to be interacting to some degree to affect time allocation for gymnastics. However, it is the final concept of safety that appears to be of greatest concern to all teachers. It is the addition and interaction of this concept with the aforementioned which serves to suggest why all teachers in this survey, some more than others, limit the extent of their gymnastics instruction.

Safety.

The analysis of the data for this study indicated that there was no relationship between time allocation and concern for teacher liability and student safety. Although levels of concern for teacher liability were
considerably higher in District B (see Table 28) than District A (see Table 27), there was a strong agreement from all teachers who teach no gymnastics to those who teach about 30% that concerns about student safety do limit the extent to which they offer gymnastics instruction (see Table 28 and the discussion for the one exception to the agreement). The findings do support a study in Great Britain (Garner, 1985) which reported that half the teachers surveyed indicated that safety in gymnastics was one area of concern for them.

Comments from the questionnaires directed at this topic of safety included:

-There are too many safety precautions to make (District B).
-I feel more people are needed to make the groups smaller so that accidents can be spotted and hopefully prevented (District A).
-Teacher liability scares a lot of teachers out of gymnastics especially using climbing apparatus (District B).
-I've dropped (parts of) my program because the parents don't spot as well as I'd like and I'm responsible (District B).
-I am constantly concerned about injuries. (District A)
I like it (but) I limit the level when I am not sure of the safety (District A).

Other teachers highlighted the two statements in the questionnaire on teacher liability and student safety with special markings. One teacher returned the questionnaire with a line through Part I and wrote "I do not teach any gymnastics due to difficulties with liability" (District B). The indications from this study are that safety and liability are of great concern to teachers and limits their gymnastic time and program.

Neuss (1985) has pointed out that "risk has been identified as an essential ingredient of gymnastic movement (and) there would seem to be worries associated with an apparent contradiction between risk and safety" (p. 12). He does concede that the teacher clearly has the responsibility for the safety of the children, but points out that these same children must be allowed to "learn to judge the possible from the dangerous" (p. 12), and to accomplish this need both guidance and help from teachers. In turn, teachers must have adequate professional training to prepare them, and this, Neuss argues, will have to come through pre- or in-service training which will provide the background for class organization and support methods.
This study agrees with Neuss' conclusions that there is a contradiction between risk and safety, and suggests that what contributes to this contradiction are levels of knowledge about teaching methodology and content. Over half of those surveyed who taught gymnastics for about 10% or less either agreed or were uncertain that the personal ability to demonstrate an essential requirement for instruction (see Table 29). Although the data are far from conclusive as nearly half of those surveyed who taught about 0-10% also disagreed with the statement, there is a suggestion of a possible lack of knowledge about a methodology used in educational gymnastics. Graham et al. (1980) have suggested, "the instructor does not need to be able to correctly demonstrate a skill, because the children are never expected to perform the same skill in the same way" (p. 147). Kirchner, Cunningham, and Warrell (1970) also argue that this way of teaching "provides "built-in' safety, because when children are given the freedom to evolve to their own solutions, they will not attempt a movement which is beyond their capabilities" (p. 9). They further suggest that "few demonstrations need to be given and teachers can circulate around the gymnasium as there are no formal lines or commands which require all of the children to perform the same movements at the same time" (p. 11).
Two plausible suggestions for these results on the personal ability to demonstrate are offered. First, that age is possibly influencing the responses to this question. The fact that nearly half of those who taught gymnastics for about 0-10% were 45 years or older (see Table 35) could preclude an ability to demonstrate. The inability or desire to demonstrate might bias their responses in favour of a disagreement with this statement. The second suggestion is that the type and level of activity in these classes is such that demonstrations by teachers are certainly not an essential requirement. These suggestions are at best very tenuous, but nearly three-quarters of those who teach about 15-20% disagreed with this statement. What does confound the issue is that two-thirds of teachers who taught gymnastics for about 25-30% of the time also agree or are uncertain that there is an essential requirement to personally demonstrate gymnastics. As stated earlier the suggestions surrounding the results on the ability to demonstrate should be treated with caution. They do warrant further investigation before specific conclusions can be inferred.

Providing support for developing an argument that a lack of knowledge about content can contribute to concerns about safety, are the class activities reported by the respondents. The majority of
respondents, especially those who taught about 10% or less, indicated the use of a basic amount of equipment such as mats. This suggests the possibility that these teachers might not feel competent to allow children to transfer and develop movements from the floor to a variety of large apparatus (e.g., see Docherty & Morton, 1982). This group of teachers probably offered a limited scope of gymnastic activities that are of low risk and are never developed fully over a series of lessons (e.g., see Williams, 1979). Those who taught about 15-20% did report the use of benches in their work, allowing them more scope to develop their lessons from basic floor work. However, among all respondents to the survey there was little mention of any large or heavy equipment except those who wrote about the climbing apparatus, and one teacher who had the stations set up in the gym and used student helpers. The possible lack of knowledge about how to use equipment both educationally and safely (i.e., allow an element of risk) could strengthen teachers' concerns about student safety and the corresponding effects upon teacher liability. This in turn could limit the time allocated to gymnastics.

Although a concern about safety does affect all teachers and limits their instruction time, the discussion concerning safety has followed a line of
argument that factors affecting time allocation should not be viewed in isolation. Agreement was indicated with Neuss (1985) statement that there is a contradiction between risk and safety which starts with a lack of pre-service training in teaching methodology and content. In addition, this study suggests that teachers' concerns for safety are being exacerbated by levels of in-service (especially in District B) and other support, which in turn, affects teachers' competence to instruct students adequately. Although a strong majority of teachers in this study showed a concern for safety which in turn limited the extent of their gymnastics instruction, it is the possible interaction of a greater number of factors which are affecting those who teach gymnastics for about 10% or less.

Age.

A factor that has been discussed under safety, but calls for a special category is that of age. It has been suggested under the auspices of safety, that age can interact with other factors. What needs to be added, however, is that although there was no significant relationship between age and time allocation, nearly 90% of those who offered gymnastics for about 15-30% were age 44 or under (see Table 35). The results also showed that about half of those who
offered gymnastics for about 10% of less were 45 or older. This study has not been able to find any related literature suggesting that age can play a part in gymnastics instruction, although one teacher who did not teach any gymnastics added as an additional reason "Too old" (District A). The study by Carre (1980) did reveal, however, that over three-quarters of the respondents to the survey were aged 40 or under with nearly 50% being age 30 or under. His survey showed that by comparison 25% of respondents taught gymnastics for 26-40+% of the program time. Unfortunately, there was no cross-tabulation of age by percentage time allocation so that comparisons can be made with this study. However this study has taken the view that factors can interact with others to limit time allocation for gymnastics; age adds yet another possible factor.

5.4 Additional Findings

In addition to the comments listed, seven teachers indicated that a reason for them teaching gymnastics was that it was part of the physical education curriculum. No other reasons other than those already mentioned were listed.
5.5 **Summary.**

This chapter has examined major findings of this study. The two major goals concerning how much time teachers allocate to teaching gymnastics and what factors do teachers perceive as influencing this time allocation have been discussed in light of the evidence from the survey of 74 teachers. The summary, conclusions, and recommendations arising from this study are presented in Chapter 6.
CHAPTER 6

Summary, Conclusions, and Recommendations

6.1 Summary

In this study, descriptive data were obtained from 74 teachers in two districts in the lower mainland examining teacher rationale for compliance or non-compliance with curriculum guidelines in the teaching of elementary school gymnastics. This data was used to establish:

1. How much time is given by primary teachers to the teaching of gymnastics to their homeroom classes.

2. What factors primary teachers identify as being important determinants in the amount of time they allocate to the teaching of gymnastics.

The literature review had as its foci the areas of gymnastics instruction in the elementary school and educational change as it relates specifically to the teaching of gymnastics in the elementary school. An
historical perspective showed how gymnastics instruction in the schools has evolved to its present forms of Olympic gymnastics and educational gymnastics. An examination of the role of gymnastics in the school context presented possible insights into the identification of rationales that teachers form when making decisions concerning gymnastics as part of a curriculum. The literature related to current trends in gymnastics suggested that the approach to the teaching of gymnastics could be changing. This change would see less of a distinction between Olympic gymnastics and educational gymnastics and would see an approach that combines the challenge of Olympic gymnastics but using the methodology favoured with educational gymnastics.

The final focal area of the literature review concerned educational change as it relates specifically to gymnastics. The relatively small amount of studies that were found specifically dealing with gymnastics necessitated an investigation of the general literature that has identified factors influencing successful change. Studies that identified specific factors positively associated with educational change and, studies that have identified general factors concerning successful educational change, were discussed. The commonality of the elements identified in the literature have been pulled
together by Fullan (1982), and it was his model of 15 factors which influence educational change that formed the basis for the framework of this study. In addition, characteristics specific to gymnastics that could have a direct bearing on educational change were identified and reviewed.

In order to achieve the goals of the study a special two-part questionnaire was designed. The first part of this survey instrument asked teachers to respond to 14 statements this study had identified as being important determinants in the teaching of gymnastics. A Likert-type scale was used for this section with the available responses being: Strongly Agree (SA), Agree (A), Uncertain (U), Disagree (D), and Strongly Disagree (SD). The second part of the survey instrument provided for gathering demographic data related to gender, age, number of years teaching, grade level taught, and educational background. In addition, respondents were asked to indicate the proportion of their total physical education program that involves gymnastics instruction, the frequency and total minutes per week their class received physical education, and whether they had received pre-service training in gymnastics. Items in this section were answered with a check mark or as indicated in the instructions. Two additional questions on the survey included asking respondents to
identify examples of class activities normally included in gymnastics, and add any possible additional reasons they might have for teaching or not teaching gymnastics.

A detailed process of refinement of the questionnaire followed and its final form was distributed to 134 teachers in two districts in the lower mainland. In one district, 21 schools were randomly chosen and the questionnaire distributed to all primary teachers in those schools. In the other district, all primary teachers received the questionnaire. A total of 74 questionnaires were returned.

The analysis of the data consisted of four parts (A level of statistical significance was set at .05). (1) An analysis of variance (ANOVA) was performed to determine if the mean responses of the two districts were significantly different from each other. (2) Cross-tabulation of the data was run between Districts A and B and statements on Part I of the questionnaire concerning possible determinants of time allocation. (3) The chi-square goodness-of-fit test was run to determine whether the frequency of response to the question concerning time allocation was significant to that expected by chance. (4) Cross-tabulation of the data between the percentage time allocated to gymnastics and factors the study
identified as being important determinants influencing this time allocation. Data related to time were combined into three distinct groups: About 0-10%, About 15-20%, and About 25-30%. Data related to teacher perceptions about percentage time allocation were also combined into three distinct groups, Agree, Uncertain, and Disagree. The chi-square test of association was used to determine if there was a significant relationship between time and teachers' perceptions of factors that could possibly affect the time given to the teaching of gymnastics. The variable of District was also added as a control in factors where the mean responses for each district had been shown to be significantly different from each other.

6.2 Conclusions

The conclusions presented in this study are drawn from data that was gathered from teachers in two school districts. It was collected through the use of a mail questionnaire, and the limitations of this approach should be considered when making generalizations. Although the data was drawn from two lower mainland school districts, the cautious generalization of the findings to school districts in the lower mainland and other similar urban school districts may be possible. They will also have
particular import for those charged with developing and presenting pre- and in-service programs for teachers whose responsibility it is to teach gymnastics. These conclusions will also be of significance for the area of curriculum implementation in gymnastics, especially in districts that have similar contextual circumstances as the lower mainland. Finally, the cautious generalization is also urged in applying these findings not only to physical education, but other areas of the curriculum.

1. Primary teachers are not complying with curriculum guidelines in the teaching of gymnastics. The majority of these teachers are offering their students well below the time allotment advocated for gymnastics in the British Columbia physical education curriculum guide.

2. There is little expectation in the schools in these districts that gymnastics be offered to students in the schools.

3. Teacher enjoyment, the perception by teachers of student enjoyment, and the value teachers see to students in gymnastics instruction were not significantly related to the time allocated for gymnastics instruction. There was a strong agreement shown among all teachers as to the value of gymnastics
to students and to the perceptions of student enjoyment. The majority of teachers also enjoyed teaching gymnastics to their students.

4. A significant difference existed between Districts concerning a sense of competence to instruct students in gymnastics. In District B, there was a significant relationship between a sense of having the competence to instruct students in gymnastics and time allocation. Nearly three-quarters of the teachers in this district who offered gymnastics for about 10% or less of their program time felt that they did not have the competence to instruct students in gymnastics. In District A, one-third of the teachers who offered gymnastics for about 10% or less, felt they did not have the competence to instruct students in gymnastics. However, a large portion of teachers in this group (about 10% or less) were also uncertain whether they did have the competence.

5. A significant difference existed between each district concerning the adequacy of in-service offered in the district. In District A, only about one-quarter of the teachers who taught gymnastics for about 20% or less felt that there was adequate in-service offered in the district. In addition, a large percentage of these same teachers were also uncertain as to this statement. In District B, ALL
teachers surveyed felt that the in-service in their
district was inadequate.

6. A significant relationship existed between time
allocation and the adequacy of print resource in the
schools. Only about one-quarter of teachers who
taught gymnastics for about 10% or less of their
program time agreed with there were adequate print
resources in the school. Nearly three-quarters of
those who taught from about 15-20%, and over half of
those who taught from about 25-30% agreed there were
adequate print resources in the school.

7. There was no significant relationship between time
allocation and the perception of a personal ability to
demonstrate gymnastics. Further investigation of this
factor is warranted as the results and discussion of
this factor raised some unanswered questions.

8. Teacher liability and a concern for student safety
which limits the extent of a gymnastics program did
not show a significant relationship to time
allocation. There was a strong agreement among all
teachers that concern for student safety limited the
extent of their instruction. The concern for teacher
liability which limited the extent of the program was
shown by the majority of teachers. This concern was
very high among the teachers in District B.
9. Over two-thirds of teachers surveyed perceived their school facilities as adequate for the program they offer.

10. There was no significant relationship between time allocation and the perception of teachers that they would teach more gymnastics if there was someone on staff who was qualified to offer assistance. However, stronger agreement with this statement was shown by teachers in District B.

11. The majority of teachers agreed that the complexities of organizing pupils and equipment limits the extent of their program.

12. Nearly three quarters of the teachers who offered gymnastics for about 10% or less of their program had no pre-service training in gymnastics instruction. Nearly three-quarters of those who offered gymnastics for about 15-20%, and two-thirds of those who offered it for 25-30%, had pre-service training in gymnastics.

13. Nearly 90% of teachers who offered gymnastics for about 15-30% were between the ages of 25-44. Forty five percent of those who offered gymnastics for about 10% or less were aged 45 and older.
Summary.

Adequacy of print resources, pre-service training, and a sense of competence (in District B) were the only factors showing a significant relationship to time allocation. In addition, there was unanimous agreement from all teachers in District B about the inadequacy of in-service. Although these were the only factors which presented themselves as being significant in their relationship to time allocation for gymnastics, the factor of safety was viewed by a lot of teachers as an area of high concern. Conversely the factors of teacher enjoyment, a perception of student enjoyment and of value to student in gymnastics were perceived as positive by the majority of teachers.

This study concludes that it is the interaction of factors that influences time allocation for gymnastics. Some factors do appear to have more influence than others and, it is the suggestion of this study, that pre-service training is the major factor contributing to low levels of gymnastics instruction in the schools in these districts. Adding to this base of a lack of pre-service training are the factors of age, safety, and support which interact to contribute to teachers' perceptions of competence to instruct students in gymnastics.
6.3 **Recommendations**

1. School districts must present opportunities for in-service that are appropriate and meet the specific needs of the teachers. Teachers in these school districts have indicated that levels of in-service are inadequate and that the availability of current styles of workshops are not meeting the specific needs. Models of in-service such as those developed by Joyce and Showers (1980, 1982) are readily applicable in the context of gymnastics instruction as the gymnasium setting is ideally suited for accepting the presence of two teachers. In particular, consideration should be given for the final activity of their model; coaching. These authors describe some of the functions of coaching as providing companionship and support (especially during an initial period), giving technical feedback, and being able to illustrate how to apply techniques to suit the needs of the children and the situations.

2. To effect in-service opportunities, teacher associates should be available to provide assistance and coaching for teachers within the teacher's school setting. Financial support should be provided for teacher associates to be able to visit schools in order that a "peer coach" relationship be established to improve levels of gymnastics instruction.
3. Teacher preparation should ensure that the levels of pre-service training in gymnastics are adequate to prepare teachers for instructing primary students in gymnastics. This study has suggested that potential teachers of gymnastics have limited experiences of gymnastics activity prior to Grade Four. A comprehensive course involving a variety of teaching methodologies, and the development of themes, other than rolling or balancing, over a series of lessons should be of primary importance. In addition, these courses should emphasize instruction in the utilization of large and small apparatus (see Kirchner, 1985) to further develop a theme.

4. Leadership must be provided by the principal or a teacher in developing a yearly plan for physical education that specifies times for classes and delineates a program of instructional activities. In addition, support (e.g., from intermediate student helpers) must be provided for primary classes in order that they can utilize large equipment. Teachers in these districts indicated little expectancy from the school that gymnastics be part of the overall program. This plan would create a school expectancy that gymnastics be taught, and would enable blocks of classes to use the gymnasium for a full lesson without the worry of setting-up or removing equipment.
5. The apparent contradiction between risk and safety must be clarified. Teachers in these districts showed a distinct concern about safety in the gymnasium during gymnastics instruction. This process of clarification is perhaps the most difficult to implement but, it must start with teacher preparation and be strongly reinforced through adequate experiences with in-service that have already been outlined. It is the recommendation of this study that further research in the areas of student safety and teacher liability be carried out to determine the exact nature of these concerns.

6. Curriculum materials should be available that are specific and practical for the varying needs of the primary generalist teacher. The results of this study suggested that teachers who teach little gymnastics do not use the available resources. However, simply providing these print resources will not guarantee actual use. Consequently it should be the mandate of a curriculum leader (e.g., principal) to ensure that teachers are not only aware of the best resources available, but are provided with assistance for translating their contents into lesson plans and activities.
7. The results of this study have also raised some unanswered questions concerning how factors interact to affect time allocation for gymnastics. The use of a questionnaire and the subsequent analysis is known to have its limitations for making generalizations about the results. Thus this study's final recommendation suggests that an in-depth investigation (e.g., case study or in-depth interview) be made to clarify the extent to which the influence of each factor outlined in this study is felt by teachers. Special consideration should be made to include teachers who offer a broad spectrum of gymnastics activities as well as those whose time allotments vary by the amounts indicated in this study.
BIBLIOGRAPHY
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APPENDICES
APPENDIX A

PILOT QUESTIONNAIRE
PART 1

Please read each statement and circle ONE of the following five responses for EACH statement:

1 = SA (Strongly Agree)
2 = A (Agree)
3 = U (Uncertain)
4 = D (Disagree)
5 = SD (Strongly Disagree)

<table>
<thead>
<tr>
<th>Statement</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I enjoy teaching gymnastics to my students.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>2. My students enjoy participating in gymnastics activities.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>3. I offer gymnastics as part of my overall program because it is expected at my school.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>4. I do not have the competence to instruct students in gymnastics.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>5. I see great value to the students in participating in gymnastics.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>6. There is adequate in-service offered for gymnastics in my district.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>7. There are adequate print resources for gymnastics instruction in my school.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>8. The local community (Parents &amp; Others) expects me to offer gymnastics as part of my overall program.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>9. My concern for teacher liability limits the extent to which I offer gymnastics instruction.</td>
<td>1 2 3 4 5</td>
</tr>
<tr>
<td>10. I consider the ability to personally demonstrate gymnastics skill an essential requirement for gymnastics instruction.</td>
<td>1 2 3 4 5</td>
</tr>
</tbody>
</table>
11. My concern for student safety limits the extent to which I offer gymnastics instruction.

12. Our school facilities are not adequate for the gymnastics program I offer my students.

13. I would teach more gymnastics if there was at least one person on staff who was qualified to offer advice.

14. The complexities of organizing pupils and equipment limits the extent to which I offer gymnastics instruction.

Additional reasons for my teaching gymnastics are:
1. 
2. 
3. 

Additional reasons for my not teaching gymnastics are:
1. 
2. 
3. 
PART II

Please read each question carefully. Questions 1, 2, 4, 5 ask for a check ( ) to be put in the appropriate space. Questions 3, 6, 7, 8 are to be answered accordingly.

1. Gender ........................................ a) Male: __
   b) Female: __

2. Age (years) .......................... a) 20-24: __
   b) 25-34: __
   c) 35-44: __
   d) 45-54: __
   e) over 54: __

3. Number of years teaching ..........: ___yrs ___mths

PLEASE RESPOND TO QUESTIONS 4, 5, 6 WITH RESPECT TO YOUR HOMEROOM CLASS, EVEN IF YOU TAKE OTHER CLASSES FOR PHYSICAL EDUCATION.

4. I teach Physical Education .............. a) Grade 1: __
   to the following grade(s):  
   b) Grade 2: __
   c) Grade 3: __
   d) Split Grade: __

5. The proportion of my total physical .. a) None at all: __
   education program that involves  
   gymnastics instruction is:  
   b) About 5%: __
   c) About 10%: __
   d) About 15%: __
   e) About 20%: __
   f) About 25%: __
   g) About 30%: __

6. My homeroom class receives 
   physical education ..................... times per week: __
   FOR A TOTAL OF ___
   mins per week: __

7. My pre-service training included ........ a) Yes: __
   courses in gymnastics instruction  
   b) No: __

   If Yes, please elaborate: (e.g. Course number, title, content, institution, year)
8. Name and/or describe three different activities you would normally include in your gymnastics class(es):

a) ___________________________________________________________________

b) ___________________________________________________________________

c) ___________________________________________________________________
APPENDIX B

COVERING LETTER

AND

FINAL QUESTIONNAIRE
PART 1

Please read each statement and circle ONE of the following five responses for EACH statement:

1= SA (Strongly Agree)  
2= A (Agree)  
3= U (Uncertain)  
4= D (Disagree)  
5= SD (Strongly Disagree)

1. I enjoy teaching gymnastics to my students.  
2. My students enjoy participating in gymnastics activities.  
3. I offer gymnastics as part of my overall program because it is expected at my school.  
4. I do not have the competence to instruct students in gymnastics.  
5. I see great value to the students in participating in gymnastics.  
6. There is adequate in-service offered for gymnastics in my district.  
7. There are adequate print resources for gymnastics instruction in my school.  
8. The local community (parents & others) expects me to offer gymnastics as part of my overall program.  
9. My concern for teacher liability limits the extent to which I offer gymnastics instruction.  
10. I consider the personal ability to demonstrate gymnastics an essential requirement for gymnastics instruction.  
11. My concern for student safety limits the extent to which I offer gymnastics instruction.  
12. Our school facilities are not adequate for the gymnastics program I offer my students.  
13. I would teach more gymnastics if there was at least one person on staff who was qualified to offer advice.  
14. The complexities of organizing pupils and equipment limits the extent to which I offer gymnastics instruction.

Additional reasons for my teaching gymnastics are:

1.  
2.  
3.  

Additional reasons for my not teaching gymnastics are:

1.  
2.  
3.
PART 11

Please read each question carefully. Questions 1, 2, 4, 5 ask for a check (√) to be put in the appropriate space. Questions 3, 6, 7, 8 are to be answered as indicated.

1. Gender
   a) Male: __
   b) Female: __

2. Age (years)
   a) 20-24: __
   b) 25-34: __
   c) 35-44: __
   d) 45-54: __
   e) over 54: __

3. Number of years teaching: __ yrs __ mths

PLEASE RESPOND TO QUESTIONS 4, 5, 6 WITH RESPECT TO YOUR HOMEROOM CLASS, EVEN IF YOU TAKE OTHER CLASSES FOR PHYSICAL EDUCATION.

4. I teach Physical Education to the following grade(s):
   a) Grade 1: __
   b) Grade 2: __
   c) Grade 3: __
   d) Split Grade: __

5. The proportion of my total physical education program that involves gymnastics instruction is:
   a) None at all: __
   b) About 5%: __
   c) About 10%: __
   d) About 15%: __
   e) About 20%: __
   f) About 25%: __
   g) About 30%: __

6. My homeroom class receives physical education: __ times per week:
   FOR A TOTAL OF __ mins per week:

7. My pre-service training included courses in gymnastics instruction:
   a) Yes: __
   b) No: __

If Yes, please elaborate: (e.g. Course number, title, content, institution, year)

8. Name and/or describe three different activities you would normally include in your gymnastics class(es):
   a) __
   b) __
   c) __