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## A gender analysis of teacher feedback in coeducational secondary physical education lessons

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**A GENDER ANALYSIS OF TEACHER FEEDBACK IN  
COEDUCATIONAL SECONDARY PHYSICAL EDUCATION LESSONS**

**BY**

**Paul R. Watson B. Arts (Education)**

**A Thesis Submitted in Partial Fulfilment of the  
Requirements for the Award of**

**Bachelor of Education with Honours**

**at the Faculty of Education,  
Edith Cowan University**

**Date of Submission: 12/11/1992**

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Signed \_\_\_\_\_  
(Paul Watson - 0884869)

Date 29/1/93

## **ABSTRACT**

### **A GENDER ANALYSIS OF TEACHER FEEDBACK IN COEDUCATIONAL SECONDARY PHYSICAL EDUCATION LESSONS**

The purpose of this study was to examine whether the verbal feedback distribution patterns of teachers in coeducational secondary physical education lessons were gender equitable. Previous literature indicated that inequality in verbal interaction and feedback existed in coeducational secondary physical education classes. This inequality tended to favour males to the disadvantage of females.

Fourteen lessons by male teachers and fourteen lessons by female teachers were video-recorded. The study utilized a modification of the systematic behaviour observation instrument developed by Siedentop (1983). Data obtained were categorized for analysis and interpretation. Statistical procedures were applied to establish the significance of the findings.

Data were analyzed to determine verbal feedback distribution patterns to male and female students, verbal feedback distribution patterns by male and female teachers, and finally, whether interactions

(relationships) existed between gender of students and gender of teachers in the distribution of verbal feedback. The observed teacher behaviour data reported in this study contrasted with the findings of previous research. No significant discrimination against students of either gender in the proportion and type of verbal feedback received was found. The categories of feedback collected included 'total', 'positive', 'corrective', 'general', 'quality', 'individual', 'group', 'behaviour', and 'skill'.

A general pattern emerged with respect to differences in proportions of verbal feedback communicated by male and female teachers. Female teachers distributed significantly more verbal feedback to students than male teachers in the following categories; 'total', 'positive', 'corrective', 'general', 'quality', 'individual', and 'skill'. The 'group' category of verbal feedback showed distribution by female and male teachers was gender equitable. Only one finding was statistically significant with regard to the interaction between gender of students and gender of teachers in the proportions and types of verbal feedback given in co-educational secondary physical

education lessons. This finding indicated that female teachers distributed significantly more 'behavioural' verbal feedback to male students than to female students, whereas male teachers distributed almost the same number of 'behavioural' verbal feedback comments to male and female students.

With the exception of the latter finding, these findings supported those reported in previous research in claiming that male teachers and female teachers may behave and interact with students differently, but collectively by gender they interact reasonably equitably with male and female students.



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## CHAPTER 1

### INTRODUCTION

The implementation of the Equal Opportunity Act (1984) in Western Australia highlighted the necessity and importance of equal opportunity in the provision of educational services for girls and boys. The introduction of this legislation was the result of evidence concerning discrimination against females. The problem facing teachers is to ensure that they provide equal opportunities for both boys and girls.

This chapter is divided into four sections. Firstly, the problem of inequitable verbal feedback by teachers to male and female students in coeducational secondary physical education classes is addressed, and the purpose of the study detailed. Next, the research questions are posed and then the significance of the research study is explained. Finally, an overview of the research study is provided.

#### Statement of the Problem

The purpose of this study is to examine verbal feedback distribution patterns to male and female students by teachers in coeducational secondary physical education lessons. The study analyzes the



differences in verbal feedback received by male and female students, and verbal feedback distributed by male and female teachers, to determine whether inequalities exist in the proportions and types of verbal feedback given.

The problem as identified in the review of related literature indicates inequitable distribution of feedback by teachers to students. This gender inequitable distribution of feedback is usually to the disadvantage of female students. In a high proportion of the reported studies, male students received greater amounts of feedback in many of the feedback categories. As feedback is a major factor in improving learning then inequitable distribution is detrimental to the female students in coeducational physical education classes. Teachers need to ensure that they provide equitable distribution of reinforcement/feedback to male and female students.

The purpose of this study is to examine gender equity in terms of teacher distribution of verbal feedback in secondary coeducational physical education lessons. Systematic observation was utilized to determine whether girls were being discriminated against in the area of verbal feedback, and if so, to identify specific areas of discrimination.

The behaviour of teachers is important because their treatment of male and female students can affect the equity of 'classroom' life. This study also identified similarities and differences between male and female teachers in regard to the distribution of verbal feedback.

### Research Questions

Data collection was structured to obtain information relevant to the following questions:

- 1) What is the relationship between the gender of the student and the proportion and type of verbal feedback given in coeducational secondary physical education lessons by teachers?
- 2) What is the relationship between the gender of the teacher and the proportion and type of verbal feedback received by male and female students in coeducational secondary physical education lessons?
- 3) What interactions (relationships) exist between the gender of students and gender of teachers in the proportion and type of verbal feedback given by teachers in coeducational secondary physical education lessons?

Subsidiary questions will assist in answering the above questions. These questions are:

i) Do male students receive a higher proportion of verbal feedback than female students within the following categories?

- (a) positive,
- (b) corrective,
- (c) general,
- (d) quality,
- (e) skill,
- (f) behavioural,
- (g) individual, and
- (h) group.

Other questions which will address these categories of verbal feedback are:

- ii) What influence does the gender of the teacher have on the distribution of verbal feedback?
- iii) Is there a relationship between the gender of students and the gender of teachers in the distribution of verbal feedback?

#### Significance of the Study

The introduction of the Equal Opportunity Act (1984) in Australia brought about a change from single-gender classes to coeducational physical education classes in many schools, possibly because teachers perceived that

this was the easiest way of ensuring equal opportunity. This change occurred before research was conducted to determine the effects of coeducational physical education on the provision of educational services for girls and boys. This was an example of intuition and not research leading educational practice.

It has since been recognized that there are problems and disadvantages resulting from mixed-gender classes. These include: male domination of games competitions; issues associated with girls fearing a loss of their feminine identity; lack of teacher training and support in the conduct of coeducational physical education; the physical and physiological differences of girls and boys; sexuality problems related to changeroom supervision, treatment of injuries and clothing attire for female students; safety problems resulting from differences in physical size of girls and boys; and social distractions and embarrassment. There was a need for local research to determine the extent of gender equity in coeducation classes.

This study may serve as exploratory research for further more comprehensive studies investigating verbal feedback distribution patterns of teachers. Results from this study will confirm whether for this

particular sample there is discrimination against female or male students and will indicate areas of teacher discrimination towards male and female students in their distribution of verbal feedback. If inequality exists and is discovered in teacher distribution of verbal feedback, programs to promote change in current teacher behaviour practices can be developed. This will assist in reducing one area of inequality, namely the provision of verbal feedback for male and female students.

#### An Overview of the Study

The purpose of this study is to examine whether the verbal feedback distribution patterns of teachers in coeducational secondary physical education lessons are gender equitable. The next chapter reviews the literature relevant to the distribution of verbal feedback. The third chapter presents the conceptual framework for the study. Chapter 4 describes the methodology of the study and includes details of the systematic observation instrument used in the analysis. A discussion of results is presented in Chapter 5. The final chapter provides a summary, discusses the problem and results, and outlines implications of the study.

## CHAPTER 2

### REVIEW OF RELATED LITERATURE

The review of literature is divided into four sections, namely: the importance of feedback in learning; teacher distribution of verbal feedback; the influence of the gender of the teacher on feedback distribution; and the types of instrumentation used by previous researchers to collect data on feedback.

#### The Importance of Feedback

For many years, researchers have attempted to identify essential features that constitute 'effective teachers'. Mustain (1990) identified eight common areas in which research concerning teacher effectiveness has been conducted. These were: goals and objectives, planning, lesson presentation, student engagement, management, student activity, feedback and teacher assessment. Bilodeau and Bilodeau (1961) claimed, "Studies of feedback ... show it to be (one of) the strongest, most important variable(s) controlling performance and learning" (p. 250). Further, results of studies have repeatedly demonstrated that there is little or no improvement in motor-skill performance without feedback, and a deterioration in performance when feedback is

withdrawn. Verg (1981) studied the teaching of a 'novel' motor-skill (cartwheel) and concluded, "teachers with higher performance levels (more effective teachers) spent more time in specific, task-related feedback" (p. 45).

Docheff (1990) claimed, "There is widespread agreement that feedback is a crucial element of learning" (p. 17). Caskey (1982) put it bluntly by saying, "Learning cannot occur without feedback" (p. 59). Other researchers agree that feedback has an important role in the learning process (Pieron, 1979; Rink, 1985; Siedentop, 1983).

Although definitions of feedback vary, a well accepted version in motor-skill performance defines feedback as "information generated about a response that is used to modify (or maintain) the next response" (Siedentop, 1983, p. 7). The information generated can be related to either skill performance or behaviour.

Rink (1985) and Docheff (1990) suggested that feedback has three functions. Firstly, feedback can reinforce the strengths or weaknesses of a particular performance, which should produce a repetition of the correct skills; secondly, feedback can provide information, not obvious to the students, which will

assist them to improve their skill or behaviour; and finally, feedback can be used as an incentive to increase skill performance or to improve behaviour. In addition to facilitating skill acquisition, feedback can improve a student's self-esteem; increase desirable behaviour and decrease undesirable behaviour; and create and maintain a positive classroom environment.

### Teacher Distribution of Verbal Feedback

Considerable research has been conducted in the area of teacher/coach-student interaction to reveal differential teacher interactions with female and male students. These studies have dealt largely with interactions as a category, and few have dealt with feedback as a subcategory of interaction. Most of the studies described the frequency and type of interactions.

Much of the research into teacher-student interaction patterns is found in the areas of mathematics and science. Good, Sikes and Brophy (1973) claimed "Male and female students are not treated the same way, since important student gender differences appear regularly" (p. 83). Further, boys received both more positive and negative communication from teachers than did girls. In addition, more negative feedback was



directed to male students, possibly because boys are more difficult to manage than girls (Spender, 1982, p. 54). Brophy (1985) supported these earlier claims by stating that teachers criticized and punished boys (negative interactions) more often than girls for misbehaviour, and that teachers initiated more interactions with male students to monitor and control their activities. He suggested that this was not surprising as boys misbehaved more often and more seriously than girls, and thus teachers needed to react more often.

Becker (1981), in a study of interactions with male and female students in mathematics classes, concluded that males received 70% of all positive interactions, and that females received almost 90% of all discouraging interactions. These results contradict those found by Brophy (1985), who claimed that male students received a greater proportion of the negative interactions. Becker's findings appear to be unique, as Stallings and Robertson (1979) reported that teachers acknowledge, praise, encourage, and provide corrective feedback more frequently to male students than to female students. Sadker and Sadker (1986) supported the finding that male students received a

significantly greater quantity of praise than female students.

Some studies have revealed few gender differences (Fennema and Peterson, 1986; Stake and Katz, 1982). Stake and Katz (1982) reinforced the idea that boys received more reprimands than girls, but reported similar treatment in the areas of praise and encouragement for girls and boys. Fennema and Peterson (1986) found few significant differences between girls and boys in the kinds of feedback teachers gave to mathematics students.

A study conducted by Pflaum, Pascarella, Boswick and Auer (1980) found that girls received somewhat more instruction than boys. Sadker and Sadker (1986) argued that this was not the case, and stated "Teacher interactions, involving precise feedback were more likely to be directed to male students" (p. 513). They claimed that the quantity as well as the quality of teacher interactions were also distributed inequitably.

Croll (1985) summarized his findings by stating, "Recent American research has concluded that the differences between boys and girls with regard to teacher attention are smaller than earlier studies

suggested, and one recent study could find no sex differences in levels of pupil-teacher interaction" (p. 220).

Kelly (1988) conducted a meta-analytic review of 81 studies on teacher-pupil interactions and concluded that boys had significantly more interactions with teachers than did girls. Praise was distributed almost equally but a higher proportion of criticism was directed at boys for behaviour. She indicated, "There were, in fact, no studies reporting more teacher interactions with girls than with boys, ...." (p. 7).

Research conducted in the field of physical education reflects the findings of other subject areas. Dunbar and O'Sullivan (1986) analyzed video-recordings of teacher behaviour in elementary physical education classes. They concluded from their collection of baseline data that there was a "major discrepancy in the distribution of feedback to boys and girls, with the boys consistently receiving a higher proportion of all teacher feedback" (p. 174). Rate (1987) researched the topic of gender equity in secondary coeducational physical education, particularly in the area of gender-role dependent and gender-role independent behaviour. Her results were similar to those of Dunbar and O'Sullivan. She also claimed that boys received

more interactions in the control/discipline category than girls. This finding is congruent with the findings of research in the areas of mathematics and science.

Owen (1989) conducted similar research in primary schools which supported Rate's findings. He suggested that girls are disadvantaged through the teacher's need to interact more with boys. A recent study by Macdonald (1990) found that "In mixed-gender classes, boys had a greater proportion of verbal interactions as well as more positive interactions with the teacher than girls did" (p. 152).

It is possible that the age of students is a factor requiring consideration when analyzing the preferential treatment that male students appear to receive. Galejs and Hegland (1982) found evidence of a contradictory nature to that already presented. This study conducted in a preschool setting claimed that girls received more favourable comments than boys. However, this trend tends to be reversed as children attend primary schools, secondary schools, colleges and universities, as illustrated by results of research presented earlier (Becker, 1981; Croll, 1985; Dunbar & O'Sullivan, 1986; Owen, 1989; Rate, 1987; Stake & Katz, 1982).

The area of teacher distribution of verbal feedback requires further research to clarify conflicting evidence. The fact that there has been no 'local' research conducted on feedback, an area of major concern in the gender equity debate, indicates the need for further research.

### The Influence of the Teacher's Gender

Research involving the influence or effect of the gender of the teacher on distribution patterns of feedback has been predominantly focussed on mathematics and science. There is conflicting evidence on whether teachers of one gender favoured either girls or boys. Findings already suggest that regardless of the gender of the teacher, male students tend to be favoured in all areas of verbal feedback distribution. However, is this inequality affected by the gender of the teacher?

The majority of research findings agree with Brophy who, after reviewing many research studies in the field, claimed, "Teachers do not systematically discriminate against students of the opposite sex" (1985, p. 137). A study on the effects of gender of the teacher and gender of the student on classroom interactions found that male and female teachers do

behave differently (Good, Sikes and Brophy, 1973). However, this data did not reveal different patterns in the treatment of boys and girls when comparing male and female teachers. Stake and Katz (1982) supported this idea in claiming, "female teachers were more positive than male teachers in their attitudes and behaviours toward their pupils" (p. 465). However, female teachers did not appear to be more positive to girls than boys.

Examples of the different ways in which female and male teachers treated their students were described by Good et al. (1973, p. 78). They found that male teachers were more likely to praise boys than girls, while female teachers treated the two genders more equally. Female teachers failed more often to give feedback to the boys than the girls, whilst the difference displayed by male teachers was negligible. It was concluded;

.... several important differences were noted in the classroom behaviour of male and female teachers, but the data on interaction between teacher sex and student sex provided no support for the idea that teachers favour students of their own sex or that female teachers are biased against male students (p. 78).

Doenau (1987), who reviewed many research studies, supported and reinforced the conclusion made by Good

et al. (1973) stating that, "There is no evidence that the sex of teachers affect the style of their interactions with male and female students" (p. 171).

Stake and Katz (1982) suggested that female teachers were more positive and gave more praise and encouragement to students. This conclusion was supported by Good et al. (1973), who claimed male and female teachers behaved differently, but did not treat male and female students significantly differently in any way. Further, female teachers may give considerably more feedback when compared to male teachers, but the greater quantity of feedback was distributed equitably to students of both genders, rather than the feedback being directed towards students of one gender. Opposing these conclusions, Fagot (1981) argued that female teachers interacted with students less than male teachers, and male teachers gave more positive comments to both boys and girls.

Another researcher to present a different view from the general consensus was Kelly (1988), who argued that the gender of the teacher did influence the way that teachers interacted with students. She claimed that, ".... male teachers direct substantially less of their classroom interactions to girls than do female

teachers. This was particularly true for feedback, praise, and criticism, where male teachers virtually ignore their female pupils" (p. 17).

It is difficult to understand how Kelly made this conclusion since many of the studies previously mentioned formed the basis of her review, and these studies did not reveal differences to the degree that Kelly described. Many of the studies revealed small differences which Kelly may have combined to arrive at her conclusion. Kelly further suggested that there was no general tendency for teachers of either gender to treat boys and girls differently, but that the differences displayed were due to the gender-role related differences in the behaviour of the students themselves (p. 18).

From the literature cited above, a general conclusion can be made. It is recognised that female and male teachers may interact and teach differently, but there is little evidence to suggest that collectively by gender they treat boys and girls differently.

In the area of physical education few studies have been conducted dealing with the influence of the gender of the teacher, and few mention feedback. The



studies have focussed on the broader theme of teacher-student interaction patterns.

From previous discussion, teachers, both male and female, interact more with boys than with girls. Research conducted in the area of physical education revealed similar findings to those described in mathematics and science. Cheffers and Mancini (1978) and Lombardo, Faraone and Pothier (1983) claimed that male teachers and male coaches gave more verbal feedback and provided significantly more praise and encouragement than female teachers and coaches. Macdonald's research (1990) did not support this finding. She claimed that female teachers have more interactions with small groups and individuals and that these interactions are more positive and skill-based than those of male teachers. Again this finding indicated that male and female teachers may behave in different ways but it does not suggest that either male or female teachers gave greater quantity or more qualified verbal feedback to students of one particular gender. McBride (1990) found only one significant interaction difference between the gender of the teacher, and this occurred in the area of management. Furthermore, he claimed, "female teachers

provided their students with more managerial cues than did male teachers" (p. 259).

Rate (1987) found that differences existed between the behaviour patterns of female and male teachers, but concluded that these differences were not attributable to the gender of the students. That is, teachers may have displayed certain patterns of behaviour, but these patterns did not vary for male and female students.

The majority of research suggests that the influence of the gender of the teacher has little effect in the teaching of physical education. Differences do exist between male and female teachers but the majority of these differences are consistent for both female and male students. The conflicting findings in this area highlight the need for further research.

#### Instrumentation

The focus of this research is on one aspect of interaction analysis. For this reason, only the methodologies that relate to interaction analysis will be discussed.

There are several ways in which data can be collected to determine whether, and in which areas, teachers are equitable in the distribution of verbal feedback.

These include student interviews; becoming a participant observer; distributing questionnaires to teachers and students; asking students and teachers to complete rating scales; and carrying out some form of systematic observation. Some of these methods of data collection have been used by previous researchers to ascertain information on the distribution of verbal feedback.

Firstly, data have been collected concerning student and teacher beliefs, perceptions and attitudes on the equality of feedback distribution. To collect these data researchers have most commonly used interviews, and conducted questionnaires and rating scales (McBride, 1990; Roberts & Nolen-Hoeksema, 1989).

Secondly, and of greatest relevance to this study, researchers have used systematic observation to describe current classroom practices. Almost all of the research studies reviewed, which described the quantity and types of interactions, used systematic observation techniques. Flanders (1970) developed one of the first and most widely used systems for the analysis of teaching behaviour. The Flanders Interaction Analysis System (FIAS) was broad, covering many aspects of interaction. Cheffers and Mancini (1978) made several modifications to FIAS in order to

increase its sensitivity in a variety of situations. The modified instrument, known as Cheffers Adaptation of the Flanders Interaction Analysis System (CAFIAS), has been extensively used by researchers analysing teaching behaviours and interaction patterns.

Siedentop (1983) developed one appropriate instrument which was used largely by college students to analyze classroom behaviour. All instruments used systematic observation techniques to record data.

Three forms of systematic observation relevant to the collection of data on verbal feedback distribution are available. These are live-coding, analysis of video-recordings and analysis of audio-recordings. The most commonly used have been live-coding and video-recording. Many of the researchers used a live-coding technique to collect data regarding teacher-student interaction patterns (Becker, 1981; Fennema and Peterson, 1986; McBride, 1990; Stake and Katz, 1982; Sternglanz and Lyberger-Ficek, 1977). Most of this research has been conducted in the confines of a classroom which may help to explain why data in similar studies for physical education have been collected using video-recordings. Researchers such as Dunbar and O'Sullivan (1986), Owen (1989) and Macdonald (1990) chose to use video-recordings.

Problems exist with live-coding in that feedback distribution is dynamic and can occur rapidly. The major advantage of video-recording is that the researcher has a permanent record and can review the video-recording as many times as necessary to record all data accurately. The collection of data through video-recordings appeared to be the most effective method of data collection for this study.

## CHAPTER 3

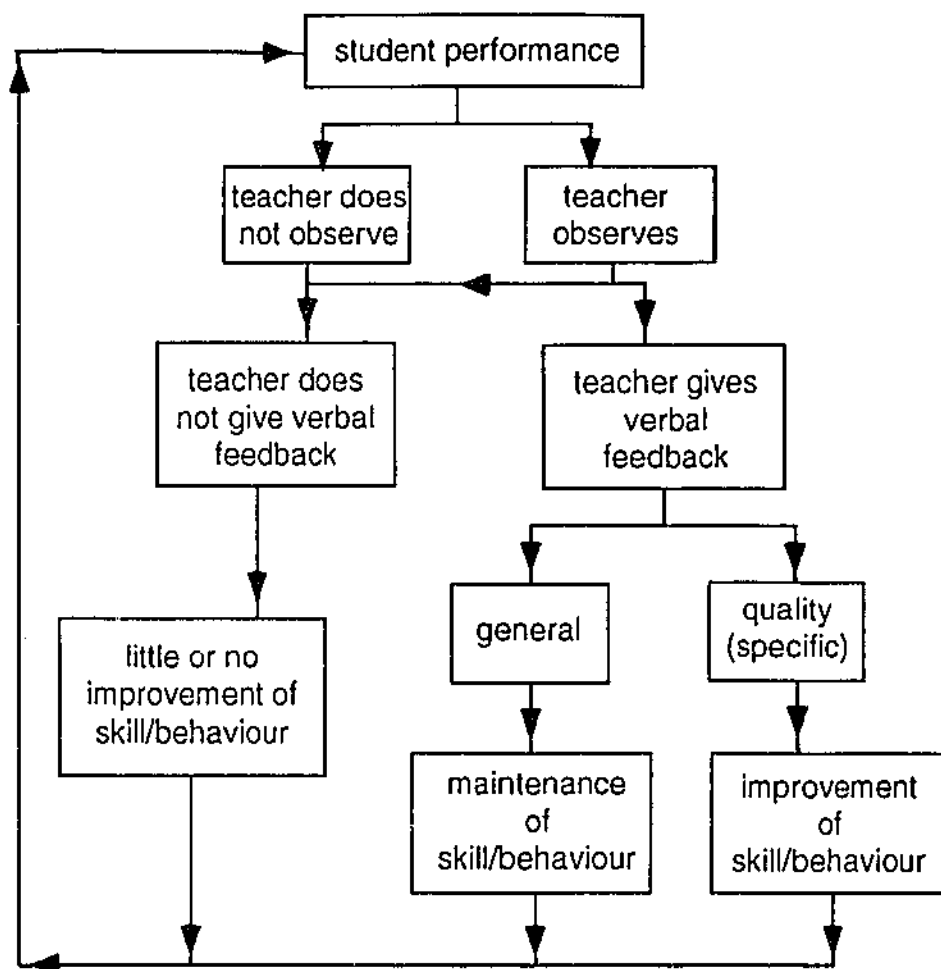
### CONCEPTUAL FRAMEWORK

This chapter develops a conceptual framework pertinent to this research study.

Assuming feedback is a powerful factor in controlling and facilitating learning as indicated throughout the literature, the following model was devised to illustrate the effect of receiving and not receiving verbal feedback from teachers on student motor-skill performance .

The majority of literature indicated that boys continually received more feedback than girls. An examination of this finding in relation to the model presented in Figure 1, illustrates the effect on the learning outcomes of girls. The model begins with a student performance, which the teacher may or may not observe. If the teacher does not observe the performance there is little or no improvement in skill/behaviour. However if a teacher observes the performance, he/she may or may not give verbal feedback on that performance. If the teacher does not give feedback, little or no improvement in skill/behaviour will occur. Keeping in mind that a teacher is less likely to give feedback to girls, it

is more likely that feedback for girls will follow this path. On the other hand, when a teacher gives feedback about a performance (which is more likely to be directed to male students) the performance will be maintained or improved, depending on the type of verbal feedback given. If the feedback is 'general' in nature it will only maintain the current level of performance. However, if it is quality(specific) feedback there is greater likelihood of improvement, providing it is understood and acted upon by the learner. Figure 1 provides a flow chart outlining the probable effects of the presence or absence of feedback on student performance. The independent variables for this study are gender of students and gender of teachers and the dependent variable is verbal feedback.



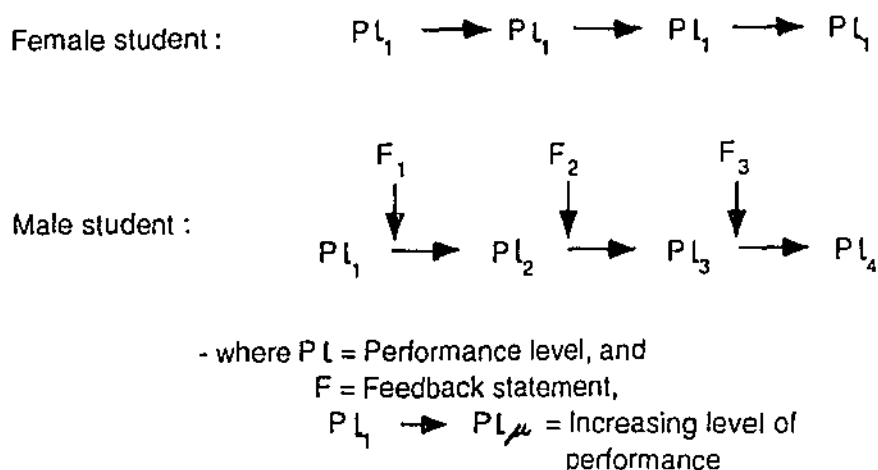
**Figure 1:** Flow-chart outlining the effects of the presence or absence of feedback on student performance.

An unequal distribution of verbal feedback is likely to produce significant differences in learning outcomes displayed by girls and boys. If boys receive a greater amount of feedback, they are provided with a



greater chance of improvement than girls, and hence, an advantage over girls in skill acquisition.

An extension of the first model can be used to describe the effect of greater amounts of verbal feedback given to boys. Figure 2 shows a female student who does not receive feedback, and after four performances has not improved her level of performance. A male student, who receives quality feedback after each performance, progresses to the next performance level. After four attempts this student has reached a higher level of performance than the female student. This model assumes that the two students had the same performance level at the beginning of the trial.



**Figure 2:** A model showing a comparison between the performance levels reached by female and male students if differential amounts of feedback are provided by the teacher.

Once initial instruction on performing a skill has been given, it is possible for students to improve their levels of performance with practice. Repeated trials of a skill by a student can improve performance irrespective of teacher verbal feedback. However, the rate at which improvement occurs is substantially slower than if that student were to receive positive and corrective skill feedback.

## CHAPTER 4

### METHODOLOGY

This chapter is divided into five sections. The first section details the subjects and settings. The next section details the observational instrument used and modifications made to the instrument. Section three describes the data collection methods including the use of a video camera, instrument reliability and validity, and problems encountered during recording and coding. Ethical issues and considerations associated with the study, are then discussed. The final section is concerned with limitations of the study.

#### Subjects and Settings

One Perth Metropolitan Government secondary school utilizing a comprehensive coeducational-based physical education programme was selected. The school allocates one 80 minute and one 40 minute session of physical education for lower school students each week. The school's student population is drawn from six 'feeder' primary schools, based in three metropolitan suburbs. Utilizing a Socio-Economic Status Index (SESI) as released by the Australian Bureau of Statistics (1989), this region is one of the highest ranked, out

of a total 315 suburbs in Western Australia (1 = low S.E.S. and 315 = high S.E.S.). Hence, the student population is drawn from a high Socio-Economic Status Index area.

Initial contact was made by the researcher through the Deputy Principal. The Head of the Physical Education Department at the school was then approached and permission gained to undertake research in physical education. Three male and three female teachers were approached and agreement reached regarding their participation in the study. Five lessons were observed for each of two male and two female teachers, and four lessons were observed from both the remaining male and female teacher. The reasons for fewer lessons being observed for the latter teachers were illness and commitments to a school camp conducted during the time of data collection.

Classes were conducted in the typical school environment and utilized available school physical education equipment. Observations were made on the school oval and tennis courts, areas normally used for physical education lessons, during fourth term of the school year from the 29<sup>th</sup> of October to the 27<sup>th</sup> of November, 1991.

### The Observational Instrument

The instrument used for this study was adapted from Siedentop (1983) (see Appendix A). The instrument utilizes frequency recording to measure teacher distribution of verbal feedback to male and female students. Applying the definitions of the various feedback categories provided, the instrument measures all possible appropriate areas of verbal feedback as indicated in the literature. These areas include skill and behaviour feedback; positive and corrective feedback; individual, group and class feedback; and general, specific and value feedback (see Appendix B). The instrument utilized in this study is essentially a re-arrangement of Siedentop's original instrument, and is similar in design to other established instruments, described in Darst, Zakrajsek and Mancini (1989).

For this data analysis the specific and value feedback categories were combined because of their small incidence in the pilot study, to form one category termed 'quality' verbal feedback. This allowed comparisons between 'general' and 'quality' feedback.

### Data Collection

The teacher behaviour observation sheet, adapted from Siedentop (1983, p. 272), utilizes frequency recording techniques. This technique requires the researcher to

record the frequency of occurrence of each behaviour being observed over a certain period of time. For this research study the time period was the duration of the lesson, either 80 minutes or 40 minutes.

All data were collected by the researcher. Each lesson was recorded on video tape using a VHS colour video camera, and the teacher's voice was recorded directly by means of a small cordless remote microphone. The microphone was attached to the teacher's shirt and the small transmitter clipped to the teacher's belt. The researcher wore headphones to ensure that the sound equipment was working and to assist in directing the video camera in the direction of the teacher's attention. The number of male and female students was noted for each lesson.

In order to set up the equipment and check that it was functional the researcher arrived approximately 30 minutes before the commencement of the lesson to be observed. The wireless microphone was clipped to the teacher before he/she began 'teaching'. The video camera was positioned in such a way as to be able to observe the entire teaching station, yet not interfere with or distract students. The camera followed the teacher and focussed on the student(s) with whom the teacher was interacting.

### Use of video-recording method

Griffin (1980) in her study felt that video-taped lessons were less effective than live observations. The problems she encountered were not experienced by the researcher of this study. Problems encountered by Griffin included poor quality of vision due to inclement weather, limited experience of the researcher in utilizing video equipment, and restrictions of field of view due to the nature and placement of the equipment.

The present researcher possessed a high level of knowledge of this type of equipment and agreed with Owen (1989) who stated, ".... the quality and effectiveness of video-recording was at a level commensurate with live observational recording (techniques)" (p. 36).

An additional reason for video-recording lessons is to enhance reliability. Each lesson or section of a lesson was viewed as many times as was necessary to code all verbal feedback statements as they occurred dynamically throughout a lesson. This close scrutiny of lessons was made possible by using the pause and rewind functions of the video cassette recorder. The

careful scrutiny of lessons substantially increased the reliability of analysis of recordings.

#### **Instrument reliability and validity**

The instrument used for this study was adapted from Siedentop (1983). Instrument validity was established using face, content and concurrent validity techniques. Dr. A. Taggart, who has considerable expertise in the area of systematic observation, attested to the face validity of the instrument in claiming that it appeared to measure what it intended to measure, that is, teacher distribution of verbal feedback to male and female students. The instrument possesses content validity to the extent that it included all the appropriate areas of verbal feedback as indicated in the literature. These areas included skill and behavioural feedback; positive and corrective feedback; individual, group and class feedback; and general and specific feedback. The concurrent validity was not determined, but it was predicted that results produced from this instrument would correlate highly with results on established instruments. The fact that it was essentially a re-arrangement of Siedentop's original instrument, and was similar in design to other established instruments, described in Darst, Zakrajsek and Mancini



(1989), reinforced the view that it had predictive concurrent validity.

A pilot study to test the reliability of the instrument was conducted. Inter-observer reliability, between two post-graduate student assistants, was calculated using the inter-observer agreement formula (Siedentop, 1983, p. 265):

$$\frac{\text{Agreement}}{\text{Agreement} + \text{Disagreement}} \times 100$$

Inter-observer reliability was calculated to be above the 90% criterion which Griffin (1980) indicated as necessary for inter-coder agreement. Intra-observer reliability was determined by coding the same lesson from video-recordings on two separate days. A high level of reliability (87.4%) was found using the same formula.

#### **Problems encountered during recording and coding**

Some problems encountered by the researcher during coding were inherent in the context of the 'natural' setting. The complexity and dynamic rate at which interactions occurred affected data collection even though all lessons were video recorded. A small number of verbal feedback statements were unable to be coded, as a result of the statement not 'fitting' one of the

feedback categories, or the researcher being unable to identify the recipient as male or female when the student was distant or out of frame. Sixteen out of a total of 2206 statements recorded (.007 %) were unable to be coded into a category of feedback and were subsequently coded in the 'other' category on the observational instrument. The dynamics of teacher-student interaction complicated the process of coding data. On many occasions, the researcher was required to stop and then record the position at which the playing of the video tape ceased, rewind the tape, pause the timing, analyze the revised section of tape, and then commence timing and coding again at the correct point in order to record all interactions accurately.

Although the researcher had a complete schedule of activities for each day during the observation period, there were occasional schedule changes due to inclement weather. As a result, the observation period had to be extended and only four lessons were observed from one male and one female teacher, instead of the proposed five. The observation period could not be further extended for these teachers as they left school for one week on a school camp and when they returned their classes were into the 'game' section of

the module which was an undesirable time to collect data for this study due to the decreased rate of interactions as teachers adopt more of a 'supervisory' role.

No difficulties or malfunctions of the recording equipment were experienced by the researcher. Equipment used in recording observations was designed to facilitate accuracy and objectivity of the data collection. One problem was encountered as a result of the natural setting. Tennis lessons conducted by one teacher required careful scrutiny and concentration on the researcher's part to ensure accuracy in coding data. This was due to increased levels of 'static' in the voice-recording caused by the enclosing wire mesh fencing.

#### Ethical Issues and Considerations

The school and teachers observed during this study are not identified by name in order to protect their identity. Teachers were informed of the nature of the research and gave their authorization by signing a letter of consent to participate. Analysis of data does not compare or contrast individual teacher's patterns of verbal feedback distribution or gender bias in teaching methods. The difference between male and female teachers' distributions of verbal feedback

was examined by gender grouping. The skill level of teacher or students, standards of teaching, and lesson preparation were not evaluated or reported on during this study.

The teachers were not required to alter their normal teaching practices. That is, they were not required to prepare special lessons, use special equipment, or teach in an area other than the one they would normally use in their physical education programme. Similarly, students were not required to alter their participation in the schools' physical education programme in any way. That is, they were not required to perform special activities, wear name tags, or wear clothing other than that which is typically worn during physical education lessons. They had been informed that only their teachers were being observed. The physical education programme operated 'normally' because any changes to the normal teaching environment and practices would inhibit the effectiveness of this research study.

#### Limitations of the Study

Due to the research being conducted in the 'natural' setting, several limitations became evident. The study undertaken contains two independent variables and one dependent variable. The independent variables are

gender of students and gender of teachers and the dependent variable is verbal feedback. Variables that would otherwise be extraneous have been controlled as far as possible. Activities taught by specific teachers are shown in Table 1. The activity chosen was controlled by selecting gender-neutral activities. The gender-typing of the activity may be responsible for the type of feedback and ways in which it is distributed. This problem was minimized as far as possible by selecting reasonably gender-neutral activities (tennis, hockey, softball) as described by Browne (1991).

A further variable 'controlled' in the study was the experience of teachers. Siedentop (1991) claimed more experienced teachers gave greater amounts of skill feedback and had good classroom management skills, whilst inexperienced teachers gave substantially more behavioural feedback. This variable was 'controlled', as far as the teachers selected were of similar age and experience. The combined teaching experience of male teachers and female teachers, was also similar. The teachers participating in the study could not be considered as 'specialists', that is the teachers did not specialize in one particular teaching field, and all taught students in a variety of sports. The

teachers did have specific expertise in certain 'sports', but these were not chosen for data collection.

The position of a lesson within the module can affect the quantity and quality of feedback given by a teacher. For example, more feedback is usually given at the beginning of a module and emphasizes skill development, whilst at the end of a module, games are emphasized and hence feedback is more 'supervisory' and related to the development of the game. This variable was 'controlled' by commencing data collection at the beginning of all modules. That is, each teacher from whom data was obtained was commencing a new module.

Some variables could not be controlled and these are acknowledged as limitations of the study. One such limitation is that the instrument does not determine why teachers distribute feedback in the way they do. It does not determine if differences in feedback are caused by the teacher or the student. It could be that the gender of the child is not the important variable, but rather, the behaviour or even the ability level of that child is the determining factor. For example, if half of the class comprised aggressive girls and the other half passive boys, it would be possible that the

girls would receive more feedback. The researcher agrees with Croll's conclusion:

The fact that the imbalance arises from the disproportionate amount of attention given to a few boys may account for the much larger estimates of the imbalance given by some researchers, as a few incidents involving high levels of teacher interaction with certain boys may disguise the equal treatment given to most boys and most girls (1985, p. 223).

A further possible extraneous variable has been controlled to some extent; the matter of choosing gender neutral activities does not ensure that activities are 'feedback neutral'. That is, some activities lend themselves to greater amounts of teacher verbal feedback. As already mentioned, the activity chosen and the stage in the module were controlled as far as possible, which assists in ensuring 'feedback neutrality'. However, the researcher felt that it was the activities employed by a teacher to allow students to acquire and improve their skills, that affected the level of 'feedback neutrality'. For example, one teacher used group activities for students to practise tennis skills, and was likely to walk up and down the courts giving feedback to one or maybe two (out of four) students on each court. Conversely, another teacher used individual activities (for example, hitting with the teacher, one student at a time) for students to

practise tennis skills, and was likely to give feedback to each student following his/her performance. It could be the practice activities employed by the teacher that affects 'feedback neutrality'. It is difficult to control this variable any further, since different teachers had different styles of teaching, and hence, used different practice activities to achieve the same goals.



## CHAPTER 5

### DATA ANALYSIS AND DISCUSSION OF RESULTS

This chapter describes the process of analyzing the data, and then discusses the results obtained.

#### Data Analysis

Analysis of data occurred after several preliminary procedures were performed. Firstly, feedback interactions were recorded on the coding sheet. A teacher may highlight many things in a segment of feedback, corresponding to different categories of verbal feedback. In such cases the feedback statement was analyzed to determine which category of feedback was most predominant and the statement was recorded for that category. Secondly, data from the coding sheet were tallied to determine frequencies for each area of feedback for male and female students. Thirdly, these frequencies for male and female students were divided by the respective number of students attending the lesson. This procedure was performed to determine the mean number of feedback comments given to male and female students respectively to take account of the unequal numbers of male and female students in most classes. The mean number of feedback comments received by male and

female students was divided by the number of minutes in each lesson. The frequency of feedback comments per student was converted to a rate per minute due to the variation in lesson duration. These procedures provided a mean number of feedback comments per student per minute for male and female students for the various categories of feedback for each lesson.

Descriptive statistics in the form of frequency tables and mean values are included. Raw data for the individual teachers in the form of frequency tables have been included (see Appendices E, F, G, H, I, J) Results from this section will be discussed and will serve as an introduction to the inferential statistical procedures to be applied.

In order to perform inferential statistical calculations the mean number of feedback comments per student per minute for male and female students were determined and entered into a spreadsheet on the computer. The statistical package 'Minitab' was used to analyze the data. Using 'gender of student' and 'gender of teacher' as the independent variables, a 2x2 Analysis of Variance (ANOVA) was performed on the following dependent variables:

- total number of feedback comments
- total number of 'positive' feedback comments

- total number of 'corrective' feedback comments
- total number of 'general' feedback comments
- total number of 'quality' feedback comments
- total number of 'individual' feedback comments
- total number of 'group' feedback comments
- total number of 'skill' feedback comments
- total number of 'behaviour' feedback comments.

### Main Findings

Data were analyzed to determine whether:

- a) there was a significant difference in the amount of verbal feedback received by male and female students
- b) there was a significant difference in the amount of verbal feedback given by male and female teachers
- c) there was any significant interaction (relationship) between gender of student and gender of teacher in the distribution of verbal feedback.

Table 1 displays combined frequencies of verbal feedback in each category for the individual teachers.

Frequency of verbal feedback comments												
TEACHER	Male 1		Male 2		Male 3		Female 1		Female 2		Female 3	
Activity taught	hockey		hockey		softball		tennis		hockey		tennis	
Sum of Lesson Durations (min.)	155		109		83		122		98		103	
Student Gender	M	F	M	F	M	F	M	F	M	F	M	F
Sum of students attending lessons	81	47	45	52	43	20	66	57	40	54	16	35
<u>FEEDBACK</u>												
<u>CATEGORY</u>												
- Total	230	160	139	199	148	81	251	224	182	235	132	225
- Positive	132	68	83	107	83	43	149	134	118	161	53	120
- Corrective	98	92	56	92	65	38	102	90	64	74	79	105
- General	140	92	87	127	105	53	167	136	117	133	71	133
- Quality	90	68	52	72	43	28	84	88	65	102	61	92
- Skill	199	124	123	179	144	78	228	219	171	230	106	223
- Behaviour	31	36	16	20	4	3	23	5	11	5	26	2
- Individual	209	139	126	183	147	80	242	219	167	211	132	218
- Group	21	21	13	16	1	1	9	5	15	24	0	7

Table 1: Total frequency of verbal feedback comments distributed by male and female teachers to male and female students.

It is difficult to compare and contrast frequencies in Table 1 due to the variation in numbers of male and female students present in each class. For this reason, the frequencies have been divided by the respective number of male and female students to determine the mean number of verbal feedback statements delivered to each student over the duration of the data collection period. These mean values are presented in Table 2.

Comparing and contrasting the mean values of verbal feedback delivered to male students and female students in each of the categories revealed only few examples of significantly inequitable feedback distribution. Other than the categories described below, distribution of verbal feedback appeared to be equitable to male and female students.

There appears to be an interaction between the 'gender of teacher' and 'gender of students' in the 'behavioural' category of feedback. This interaction between 'gender of teacher' and 'gender of students' indicates that teachers of one gender give more feedback to students of the opposite gender. For example, in the category of 'behavioural' feedback all male teachers gave greater amounts of feedback to female students, whereas all female teachers gave more feedback to male students.

Mean number of verbal feedback comments													
TEACHER	Male 1		Male 2		Male 3		Female 1		Female 2		Female 3		
Sum of Lesson Durations (min.)	155		109		83		122		98		103		
Student Gender	M	F	M	F	M	F	M	F	M	F	M	F	
<u>FEEDBACK</u>													
<u>CATEGORY</u>													
- Total	2.84	3.40	3.09	3.83	3.44	4.05	3.80	3.93	4.55	4.35	8.25	6.43	
- Positive	1.63	1.45	1.84	2.06	1.93	2.15	2.26	2.35	2.95	2.98	3.31	3.43	
- Corrective	1.21	1.96	1.24	1.77	1.51	1.90	1.55	1.57	1.60	1.37	4.94	3.00	
- General	1.73	1.96	1.93	2.44	2.44	2.65	2.53	2.39	2.93	2.46	4.44	3.80	
- Quality	1.11	1.47	1.16	1.38	1.00	1.40	1.27	1.54	1.63	1.89	3.81	2.63	
- Skill	2.46	2.64	2.73	3.44	3.35	3.90	3.45	3.84	4.28	4.26	6.63	6.37	
- Behaviour	0.38	0.77	0.36	0.38	0.09	0.15	0.35	0.09	0.28	0.09	1.63	0.06	
- Individual	2.58	2.96	2.80	3.52	5.42	4.00	3.67	3.84	4.18	3.91	8.25	6.23	
- Group	0.26	0.45	0.29	0.31	0.02	0.05	0.14	0.09	0.38	0.44	0.00	0.20	

Table 2: Mean number of verbal feedback comments distributed  
by male and female teachers to male and female students.

The difference in the amount of 'behavioural' feedback given to male and female students by male teachers, although present, was only minor in nature, when compared to the differences in amounts of 'behavioural' feedback given by female teachers to male and female students. All female teachers gave significantly more 'behavioural' feedback to male students, hence highlighting the interaction between 'gender of teacher' and 'gender of students'.

The 'total' category of feedback revealed a similar interaction between the 'gender of teacher' and 'gender of students' which was also reflected in the 'corrective' and 'general' categories. However, these differences were only minor in nature.

Other gender differences were found in the 'positive' and 'quality' categories of feedback. The 'positive' category revealed five out of the six teachers gave more feedback to female students than to male students. However, once again, these differences were relatively small. Similarly, five of the six teachers distributed more 'quality' feedback to female students than to male students. Female Teacher 3 was the only teacher who consistently distributed inequitable amounts of feedback to male and female students. In seven out of the nine categories of feedback Female

Teacher 3 delivered more verbal feedback statements to the male students. These categories of feedback in which inequitable distribution were displayed included 'total', 'corrective', 'general', 'quality', 'skill', 'behavioural' and 'individual'.

Table 3 displays the mean number of feedback statements delivered to male and female students by either male teachers or female teachers collectively.

Mean number of verbal feedback comments				
	Male Teachers		Female Teachers	
Sum of Lesson Durations (min.)	347		323	
Student Gender	M	F	M	F
Sum of students attending lessons	169	119	122	146
<u>FEEDBACK</u>				
<u>CATEGORY</u>				
- Total	3.06	3.70	4.63	4.69
- Positive	1.76	1.83	2.62	2.85
- Corrective	1.30	1.87	2.01	1.84
- General	1.96	2.29	2.91	2.75
- Quality	1.10	1.41	1.72	1.94
- Skill	2.76	3.20	4.14	4.61
- Behaviour	0.30	0.50	0.49	0.08
- Individual	2.85	3.38	4.43	4.44
- Group	0.21	0.32	0.20	0.25

Table 3: Mean number of verbal feedback comments distributed by male teachers and female teachers collectively to male and female students.



Analysis of these results reveals once again, interactions between 'student gender' and 'teacher gender' in the 'corrective' and 'behavioural' categories of verbal feedback. In each case male teachers distributed more feedback to female students and female teachers distributed more feedback to male students. However, the difference is more pronounced in the 'corrective' category with male teachers giving significantly more feedback to female students. In the 'behavioural' category this interaction is largest from female teachers to male students.

Male teachers distributed substantially more verbal feedback to female students in the 'total' and 'individual' feedback categories. The only other major finding in teacher distribution of verbal feedback occurred in the 'skill' category. Within this category both male and female teachers distributed more feedback to female students.

It is not possible to compare mean values of feedback between teachers since the total duration of lessons for each teacher varied. For this reason, mean values were further divided by the total duration of lessons, to obtain the mean rate of feedback delivered per student per minute.

Analysis of Variance (2x2 ANOVA's) were performed on the categories of verbal feedback to ensure a more detailed analysis. To provide an overview for this section, the 'total' number of feedback comments was analyzed. Results indicate that female teachers distributed significantly more verbal feedback statements ( $M = 0.242$ ) than their male counterparts ( $M = 0.155$ ),  $F(1, 52) = 12.48$ ,  $p < .01$  (where  $M$  = mean number of verbal feedback statements per student per minute). Results from this 2x2 ANOVA are represented in Figure 3.

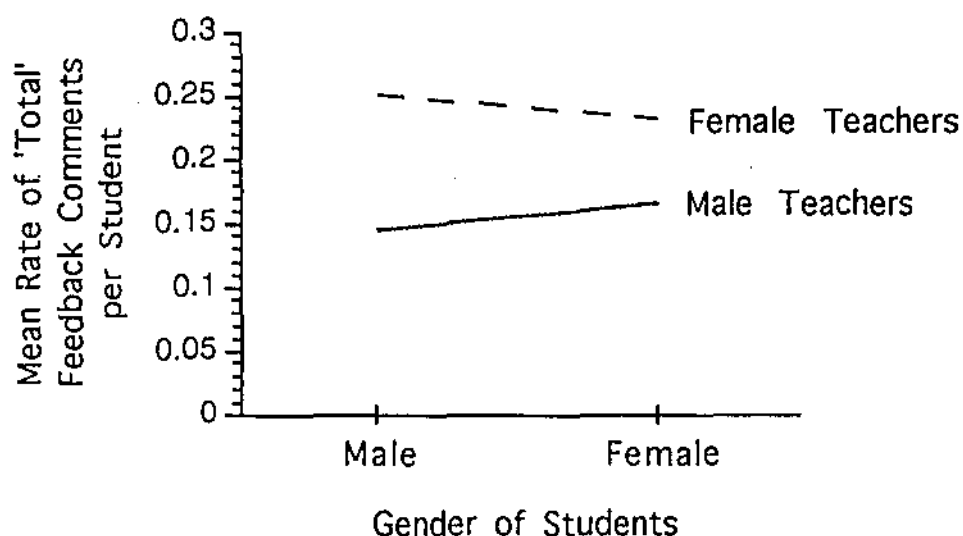


Figure 3: The mean rate of 'total' verbal feedback comments to male and female students by female and male teachers.

Results did not indicate any significant patterns for either the proportions of verbal feedback statements received by male and female students or any significant interaction between gender of students and gender of teachers in the distribution of verbal feedback statements.

The second analysis dealt with 'positive' verbal feedback comments, and results indicate that female teachers distributed significantly more 'positive' verbal feedback statements ( $M = 0.138$ ) than male teachers ( $M = 0.086$ ),  $F(1, 52) = 10.55$ ,  $p < .01$ . No significant differences were found in the proportion of 'positive' verbal feedback received by male and female students. Similarly, no significant interaction between gender of teacher and gender of student was found for the 'positive' feedback category. Results from this 2x2 ANOVA are represented in Figure 4.

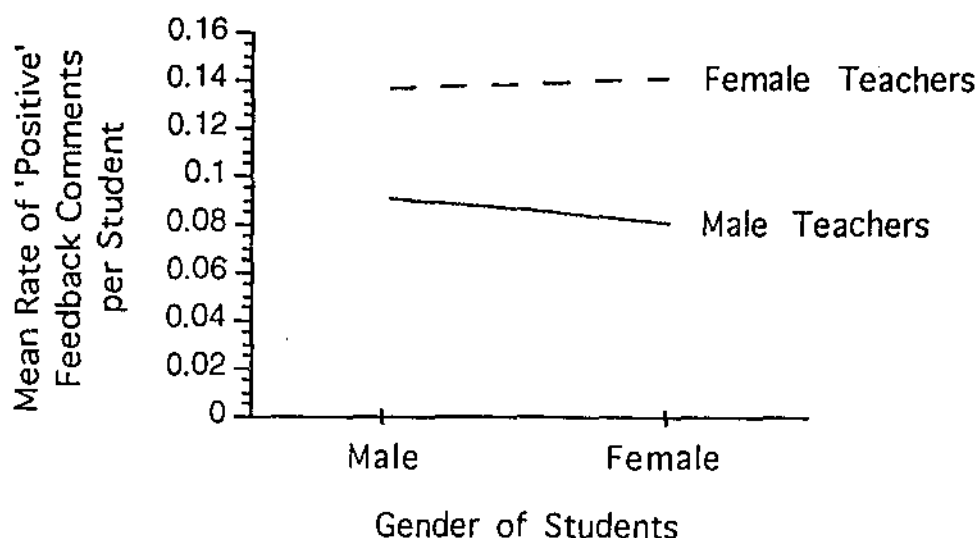


Figure 4: The mean rate of 'positive' verbal feedback comments to male and female students by female and male teachers.

An analysis of the distribution of 'corrective' verbal feedback revealed only one significant finding. Results indicate that female teachers distributed significantly more 'corrective' verbal feedback statements ( $M = 0.104$ ) than male teachers ( $M = 0.069$ ),  $F(1, 52) = 6.36$ ,  $p < .05$ . No significant differences were found in the proportion of 'corrective' verbal feedback received by male and female students. Figure 5 suggests an interaction, with female teachers giving more corrective feedback

to male students and male teachers giving less corrective feedback to male students. However the interaction was not significant. Results from this 2x2 ANOVA are represented in Figure 5.

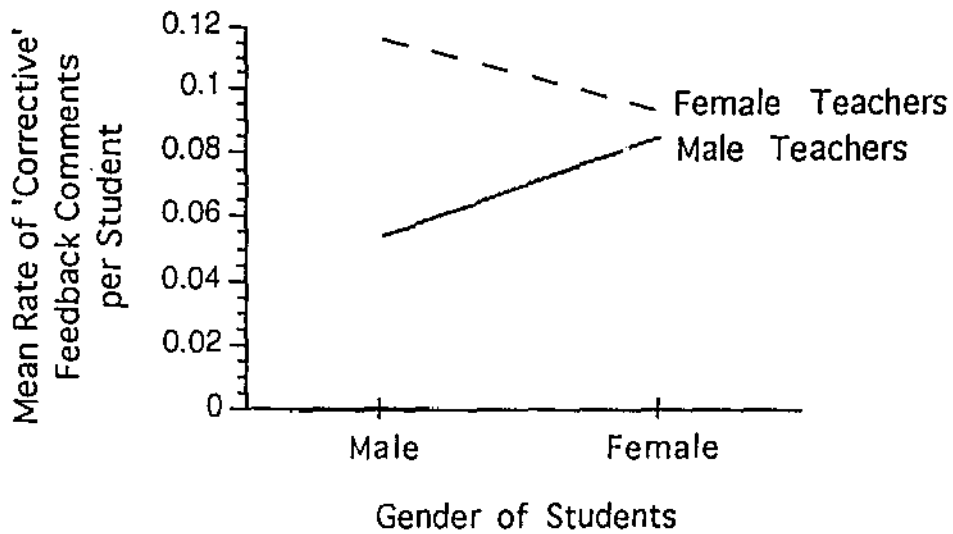


Figure 5: The mean rate of 'corrective' verbal feedback comments to male and female students by female and male teachers.

The category of 'general' verbal feedback comments was analyzed to determine if any differences existed in the distribution of this type of feedback. Results showed no significant difference in the distribution of feedback to female and male students and showed no interaction between gender of teacher and gender of student. However, one significant finding was evident. Female teachers distributed significantly more

'general' verbal feedback statements ( $M = 0.148$ ) than male teachers ( $M = 0.101$ ),  $F(1, 52) = 7.69$ ,  $p < .01$ . Results from this 2x2 ANOVA are represented in Figure 6.

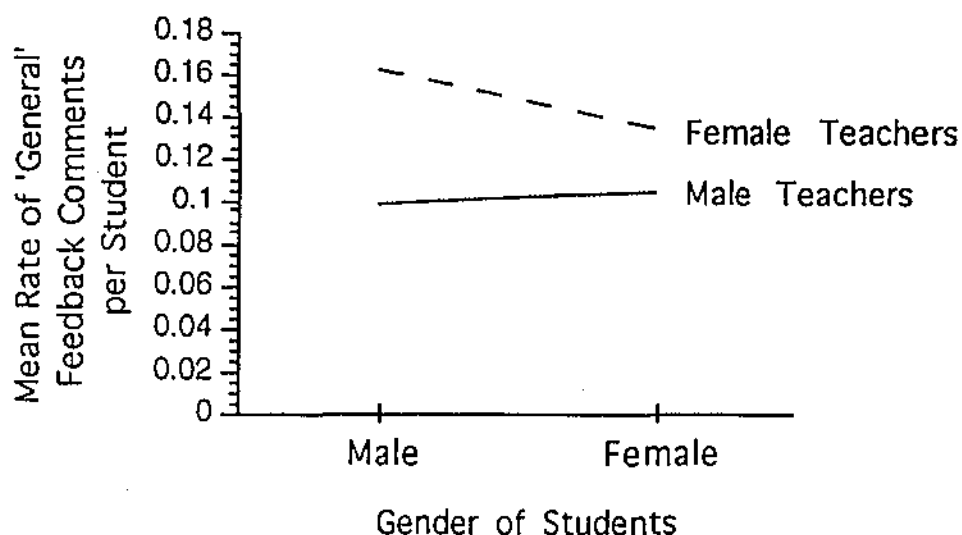


Figure 6: The mean rate of 'general' verbal feedback comments to male and female students by female and male teachers.

The amounts of 'quality' verbal feedback comments were analyzed and revealed female teachers distributed significantly more 'quality' verbal feedback statements ( $M = 0.094$ ) than male teachers ( $M = 0.053$ ),  $F(1, 52) = 13.07$ ,  $p < .01$ . Figure 7 suggests female students received more feedback than male students. However the difference was not significant. Similarly, no significant interaction between gender of teacher

and gender of student was found for the 'quality' feedback category. Results from this 2x2 ANOVA are represented in Figure 7.

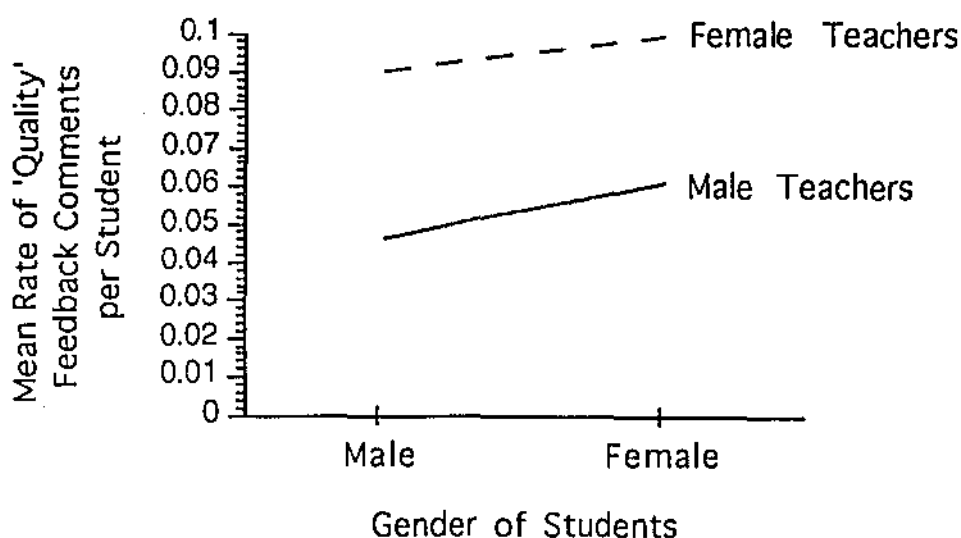


Figure 7: The mean rate of 'quality' verbal feedback comments to male and female students by female and male teachers.

Analysis of the distribution of 'individual' verbal feedback revealed female teachers distributed significantly more 'individual' verbal feedback statements ( $M = 0.228$ ) than male teachers ( $M = 0.144$ ),  $F(1, 52) = 11.70$ ,  $p < .01$ . No significant differences were found in the proportion of 'individual' verbal feedback received by male and female students. Similarly, no significant interaction between gender of teacher and gender of student was found for the

'individual' feedback category. Results from this 2x2 ANOVA are represented in Figure 8.

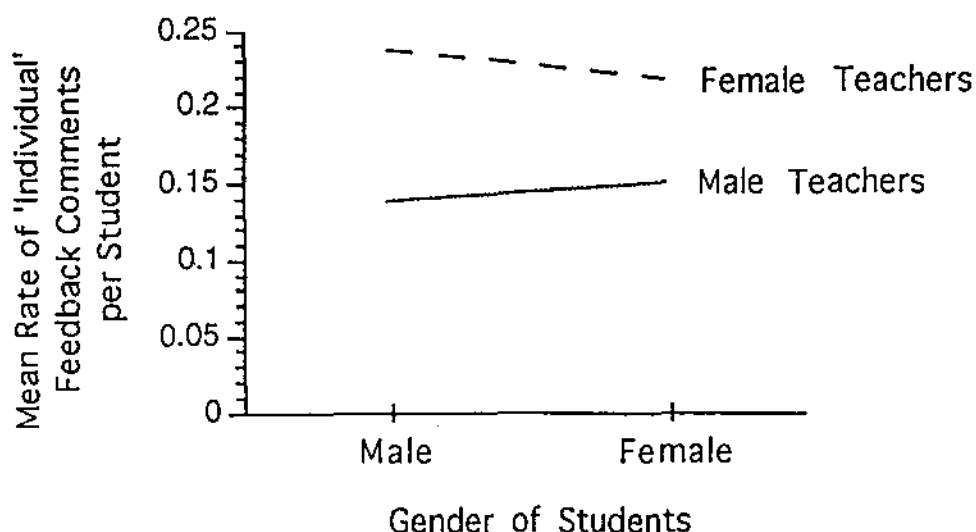
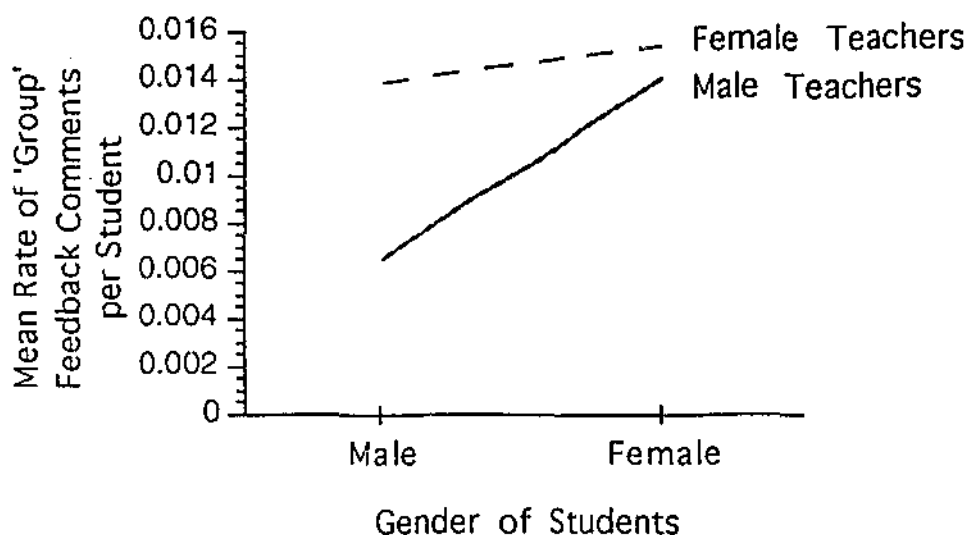


Figure 8: The mean rate of 'individual' verbal feedback comments to male and female students by female and male teachers.

The category of 'group' verbal feedback did not reveal any significant findings. That is, students of one gender did not receive significantly higher proportions of feedback; teachers of one gender did not distribute significantly higher proportions of feedback; and there was no interaction between gender of student and gender of teacher. This finding could be the result of a low incidence of 'group' feedback. Results for this analysis are represented in Figure 9.





**Figure 9:** The mean rate of 'group' verbal feedback comments to male and female students by female and male teachers.

Analysis of the category of 'skill' verbal feedback illustrated that female teachers distributed significantly more 'skill' verbal feedback statements ( $M = 0.226$ ) than male teachers ( $M = 0.140$ ),  $F(1, 52) = 12.76$ ,  $p < .01$ . There was however, no significant difference in distribution of 'skill' feedback to male and female students, and no significant interaction between gender of teacher and gender of student in the distribution of 'skill' feedback. Results from this 2x2 ANOVA are represented in Figure 10.

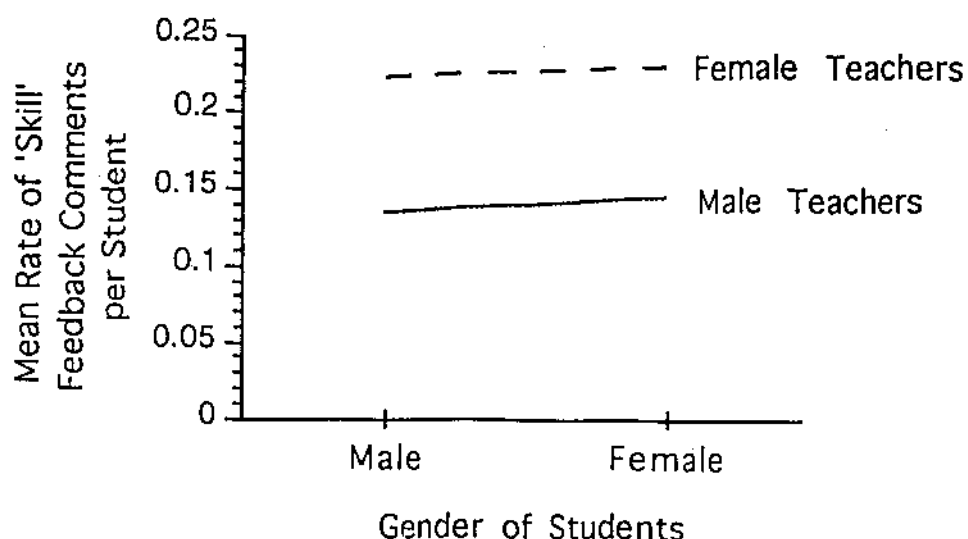


Figure 10: The mean rate of 'skill' verbal feedback comments to male and female students by female and male teachers.

Figure 11 suggests female teachers give more 'behavioural' verbal feedback to male students than to female students, however this finding was not significant. The category of 'behavioural' verbal feedback was the only one to show a significant interaction between gender of student and gender of teacher. This interaction revealed that female teachers distributed significantly more 'behavioural' verbal feedback statements to male students ( $M = 0.029$ ) than to female students ( $M = 0.003$ ),  $F(1, 52) = 17.01$ ,  $p < .01$ , whereas, male teachers gave almost the

same number of 'behavioural' verbal feedback comments to male and female students. Results from this 2x2 ANOVA are represented in Figure 11.

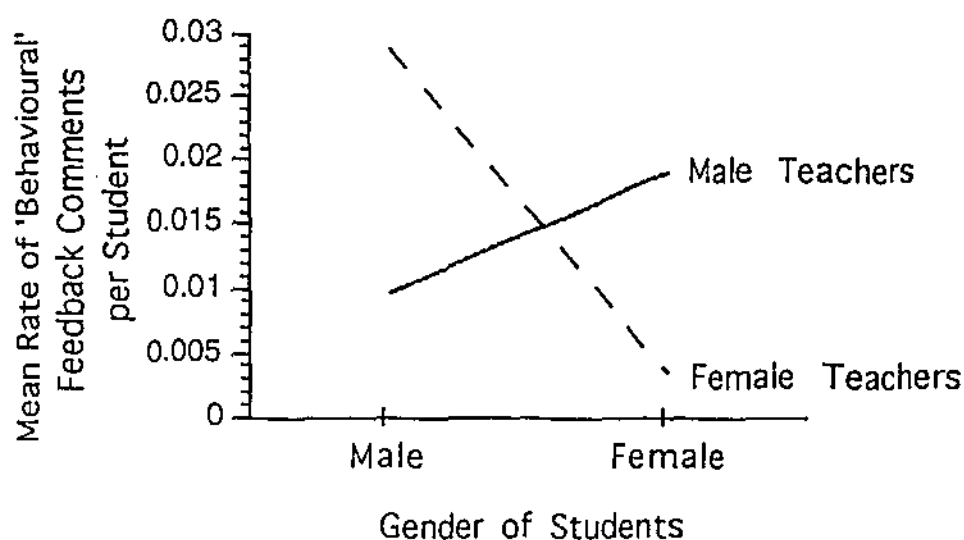


Figure 11: The mean rate of 'behavioural' verbal feedback comments to male and female students by female and male teachers.

The above analyses highlight one pertinent finding which is consistent through most verbal feedback categories and illustrates that female teachers give significantly more verbal feedback in the following categories: 'total', 'positive', 'corrective', 'general', 'quality', 'individual' and 'skill'. There was no significant difference with regard to teacher distribution of verbal feedback in the 'group' category, probably due to the small number of comments

in this category. One interaction between gender of teacher and gender of student was evident and this occurred in the 'behaviour' category, indicating that female teachers give significantly more 'behavioural' verbal feedback to male students than to female students, whereas, male teachers distribute 'behavioural' verbal feedback equitably to female and male students. This might indicate that female teachers are more conscious of, or react more often to male student misbehaviour than male teachers may.

Throughout all categories of verbal feedback there were no statistically significant differences in the proportions of feedback received by male and female students. Students of one particular gender were not receiving significantly more verbal feedback in any of the categories. The results illustrate that female teachers distribute significantly more verbal feedback in many categories. However, it is important to note that they distribute this feedback equitably to male and female students. The one exception to this which illustrated a significant interaction between gender of teacher and gender of student, was the 'behaviour' category.

## CHAPTER 6

### SUMMARY, DISCUSSION AND IMPLICATIONS OF THE STUDY

This section summarizes the study, compares and contrasts results obtained with findings of previous researchers, and describes implications of the study.

#### Summary

The major intention of this study was to examine whether verbal feedback distribution patterns of teachers in coeducational secondary physical education lessons were gender equitable. The implementation of the Equal Opportunity Act (1984) in Western Australia highlighted the necessity and importance of equality of opportunity in the provision of education for girls and boys. Practice has shown that the integration of boys and girls in physical education has not ensured the conduct of gender equitable physical education classes. There was a need to determine the extent to which gender equity is being achieved in co-educational physical education classes with respect to verbal feedback. Systematic observation techniques were used to collect data which allowed analysis of differences in verbal feedback received by male and female students, verbal feedback distributed by male and female teachers, and interactions existing between

the gender of students and the gender of teachers, in the proportions and types of verbal feedback given in coeducational secondary physical education. The results of this study are important in order to assist teachers in displaying equitable teaching behaviours towards girls and boys.

One secondary school in the Perth metropolitan area was selected as representative of schools utilizing a comprehensive coeducational based physical education programme. A total of six teachers (three male and three female) were observed teaching their classes in the normal school environment. Each lesson was video-recorded onto video tape and analyzed using a modified version of the feedback instrument developed by Siedentop (1983). The recording of lessons onto video tape enhanced the effectiveness of the instrument. It allowed the researcher to code accurately the frequency of all verbal feedback statements given by teachers, thereby increasing the reliability and validity of results.

Results indicate that female teachers distribute significantly more verbal feedback than male teachers, in the 'total', 'positive', 'corrective', 'general', 'quality', 'individual', and 'skill' categories. However it is important to note that they distribute

this feedback equitably to both male and female students. One exception to this, which illustrated a significant interaction between gender of teacher and gender of student, was the 'behaviour' category. Results indicated that female teachers gave significantly more 'behavioural' verbal feedback to male students than to female students, whereas male teachers distributed almost the same number of 'behavioural' verbal feedback comments to male and female students. Throughout all categories of verbal feedback there were no significant differences in the proportions of feedback received by male and female students. Hence, students of one particular gender were not receiving significantly more verbal feedback in any of the categories.

### Discussion

The findings in this study support the findings of Stake and Katz (1982), Croll (1985), and Fennema and Peterson (1986), who found few or no differences in the treatment of male and female students by teachers. That is, students of one gender were not favoured in the quantity or quality of feedback they received. In this study the integration of male and female students in physical education classes did not result in an inequitable distribution of teacher verbal feedback in

the selected school. No differences existed between the quantity or quality of verbal feedback statements received by male and female students in any of the verbal feedback 'categories'.

The findings of the present study may be evidence of 'changes' occurring (both in the school context and more broadly in the community) regarding gender equity related issues. It is possible that physical education teachers have either deliberately or unconsciously adopted teaching styles ensuring equitable feedback distribution, as a result of the 1984 legislation and ensuing policy statements. Croll's (1985) conclusion illustrated that 'trends' in the behaviour of teachers towards students are changing:

Recent American research has concluded that the differences between boys and girls with regard to teacher attention are smaller than earlier studies suggested, and one recent study could find no sex differences in levels of pupil-teacher interaction (p. 220).

The results of this study contrast with those of many previous researchers (Becker, 1981; Dunbar et al., 1986; Good et al., 1973; Good, 1985; Macdonald, 1990; Owen, 1989; Sadker et al., 1986; Stallings et al., 1979; and Rate, 1987), who found that teachers gave more feedback to students of one gender in various 'categories' of verbal feedback. Stallings and



Robertson (1979), Dunbar and O'Sullivan (1986), and Rate (1987) claimed male students received greater amounts of all verbal feedback. Most of this inequitable distribution of verbal feedback was to the benefit of male students and occurred mainly in the 'positive', 'corrective', 'quality' and 'behavioural' categories. Results of the present study do not support such findings; providing no evidence of differences in the quantity and quality of verbal feedback given to male and female students by teachers.

Application of the above mentioned results to 'Model 1' in the conceptual framework suggests that at the bottom of the model (the end product) male and female students will 'graduate' in the same place. That is, knowing male and female students are equitably receiving verbal feedback, both in quantity and quality, male and female students should follow the same pathways. Hence, there is no preferential treatment of, or advantage to, students of either gender. It is no longer appropriate to compare a male student following for example the 'improvement of skill/behaviour' pathway to a female student following the 'little or no improvement of skill/behaviour' pathway, as this suggests that male and female

students are receiving different types of feedback, which was not indicated in the results of this study. Model 2 compared the predicted performance level achieved for a male student who received verbal feedback to a female student who did not receive any verbal feedback. This model is no longer applicable because results of this study show that male and female students received equitable amounts of feedback.

A second area of the study dealt with differences in verbal feedback distribution by male and female teachers. Previous researchers such as Fagot (1981) and Cheffers et al. (1978) found male teachers had more interactions with students and gave more verbal feedback statements (overall) as well as more 'positive' verbal feedback statements, to their students. Stake and Katz (1982) and Macdonald (1990) provided contradictory evidence, claiming that female teachers had more interactions and provided more 'positive' and 'skill' verbal feedback to their students.

Results of the present study support the findings of Stake and Katz (1982) and Macdonald (1990) and do not support the findings of Fagot (1981) and Cheffers et al.(1978), demonstrating that in seven of the nine

feedback categories female teachers gave significantly more feedback than their male counterparts. These categories of verbal feedback included 'total', 'positive', 'corrective', 'general', 'quality', 'individual', and 'skill'. It is important to remember that whilst female teachers distribute significantly more verbal feedback in many of the categories, they do not distribute verbal feedback inequitably to male and female students. It is recognized that female and male teachers may interact and teach differently, but, there is little evidence to suggest that they treat boys and girls differently.

A further aspect of the study determined whether any interactions existed between gender of student and gender of teacher. Previous research had indicated that both male and female teachers interact more with boys than with girls. The present study found that discrimination occurred only in the distribution of 'behavioural' feedback. Female teachers gave significantly more 'behavioural' verbal feedback to male students than to female students, whereas male teachers distributed feedback equally. This finding supported McBride's research (1990) which indicated that the one significant interaction difference by

teacher gender was in the area of behavioural management.

### Implications of the Study

This study has established that teacher distribution of verbal feedback in a selected coeducational secondary school during physical education was in the main equitable. In this school teachers were not 'discriminatory' in their distribution of verbal feedback and distributed verbal feedback equitably to male and female students.

A systematic teacher behaviour observation instrument was shown to be an effective and appropriate means of monitoring teacher verbal feedback. Results obtained could then be utilized as necessary to promote change in current practices displayed by teachers. Once areas of concern have been identified strategies to change the specified teacher behaviour could be designed and implemented.

The major finding, that female teachers give significantly more 'behavioural' verbal feedback to male students, requires further investigation to determine the reasons for this pattern. Such research could utilize 'qualitative' methodology such as student and teacher interviews, which allows the

researcher to determine reasons why teachers behave in certain ways. It could well be that the problem does not lie entirely with teacher behaviour, but also with student behaviour. Research into different behaviour patterns of male and female students could help explain the present inequality in verbal feedback distribution.

Instruction in the use of the instrument used for this research study could be included in teacher education programmes, and preservice and inservice courses in order to increase teacher sensitivity to gender-related issues and assist teachers to evaluate their patterns of verbal feedback distribution to students. Teachers trained in the use of the instrument could observe each other to identify areas in which they may not be distributing feedback equitably. Modifications to inappropriate 'discriminatory' teaching behaviours could then be made, resulting in more equitable physical education for all students.

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## APPENDICES

- \* Appendix A - Feedback data collection sheet.
- \* Appendix B - Feedback categories, definitions and examples.
- \* Appendix C - Mean rate of feedback comments per minute, per male student, by teachers for feedback categories.
- \* Appendix D - Mean rate of feedback comments per minute, per female student, by teachers for feedback categories.
- \* Appendix E - Table showing frequency of verbal feedback comments distributed to students by "Male Teacher - 1".
- \* Appendix F - Table showing frequency of verbal feedback comments distributed to students by "Male Teacher - 2".
- \* Appendix G - Table showing frequency of verbal feedback comments distributed to students by "Male Teacher - 3".
- \* Appendix H - Table showing frequency of verbal feedback comments distributed to students by "Female Teacher - 1".
- \* Appendix I - Table showing frequency of verbal feedback comments distributed to students by "Female Teacher - 2".
- \* Appendix J - Table showing frequency of verbal feedback comments distributed to students by "Female Teacher - 3".

Appendix A: Feedback data collection sheet.

# **FEEDBACK DATA COLLECTION SHEET**

FEEDBACK TYPE			SKILL					BEHAVIOUR					EXAMPLES	OTHER		
			INDIVIDUAL		GROUP			CLASS	INDIVIDUAL		GROUP				CLASS	
			MALE	FEMALE	MALE	FEMALE	MIXED		MALE	FEMALE	MALE	FEMALE				MIXED
EVALUATIVE	POSITIVE	General														
		Information (specific)														
		Value														
	CORRECTIVE	General														
		Information (specific)														
		Value														

Observer: \_\_\_\_\_

Date: \_\_\_\_\_

Teacher: \_\_\_\_\_

- gender \_\_\_\_\_

- lesson \_\_\_\_\_

Activity: \_\_\_\_\_

Year: \_\_\_\_\_

No. male students: \_\_\_\_\_

No. female students: \_\_\_\_\_

CATEGORY	FREQUENCY		MEAN ( $\bar{X}$ )	
	male	female	male	female
* POSITIVE				
- general				
- specific				
- value				
* CORRECTIVE				
- general				
- specific				
- value				
* General				
* Quality				
* Individual				
* Group				
* Skill				
* Behaviour				

## Appendix B: Feedback categories, definitions and examples.

"Feedback is usually defined as information generated about a response that is used to modify (or maintain) the next response" (Siedentop, 1983, p. 7).

The overall category of feedback can be divided into many subcategories. Feedback is evaluative and can be positive or corrective, general, contain specific information, or can have value content.

\* Positive feedback builds on the strengths of student performance by providing feedback on those aspects of the performance or behaviour that were appropriate, done well or correctly.

- general; feedback that does not include specific information.  
eg: yes; good; well done; good effort;  
nice shot; that's the right idea.
- specific; feedback that includes specific information (often related to the teaching points).  
eg: thanks for paying attention  
Julie; great, you shot from right behind the screen; good, you kept your arms straight.
- value; feedback that is specific in nature, but also states why it was important to do it the way it was done.  
eg: that's the way to listen, now we can get on with the game;  
terrific, when you kept your head up you could see what your team-mates were doing.

\* Corrective feedback provides the learner with information on what to do or not to do in future performance. It tries to modify the subsequent performance.

- general; a statement given that will attempt to improve the student's next response.  
eg: bad; incorrect; not good enough;  
come on; this group could be working better; hurry up; quicker now; I can't believe it.

- **specific**; contains specific information on what is needed to improve the performance (often related to the teaching points).  
eg: next time keep your arms a little straighter; you must watch the ball; you should stop when the whistle blows.
  - **value**; provides the reason behind the correction.  
eg: when you get the equipment out quickly you will have more time to play a game at the end;  
if you watch the ball you will be more likely to hit it in the middle of the racket.
- 
- \* Skill feedback - feedback related to the performance of motor skills; usually related to technique.
  - \* Behavioural feedback - feedback related to the social and organizational behaviour of students.
  - \* Individual feedback - Feedback directed to an individual student.
  - \* Group feedback - feedback directed to a group consisting of 2 or more students (group size is usually 3 to 6 students).
  - \* Class feedback - feedback directed to the whole class.

## Appendix C

**Table 4: Mean minute rate of feedback comments per male student,  
by teachers for feedback categories, by lesson.**

	Teacher Gender	Positive General	Positive Specific	Positive Value	Corrective General	Corrective Specific	Corrective Value	Total Positive	Total Corrective	General	Quality	Individual	Group	Skill	Behaviour	Total Feedback
1	M	0.027	0.007	0.000	0.009	0.037	0.006	0.034	0.052	0.036	0.050	0.068	0.012	0.064	0.016	0.086
2	M	0.056	0.009	0.006	0.009	0.026	0.000	0.071	0.035	0.065	0.041	0.104	0.003	0.104	0.003	0.106
3	M	0.047	0.006	0.002	0.023	0.018	0.000	0.055	0.041	0.070	0.026	0.089	0.006	0.076	0.019	0.096
4	M	0.092	0.015	0.000	0.021	0.031	0.000	0.107	0.052	0.113	0.046	0.159	0.000	0.149	0.011	0.159
5	M	0.056	0.011	0.004	0.016	0.027	0.004	0.071	0.047	0.072	0.046	0.101	0.018	0.107	0.011	0.118
6	M	0.076	0.011	0.000	0.017	0.052	0.014	0.087	0.083	0.093	0.077	0.146	0.024	0.149	0.021	0.170
7	M	0.049	0.009	0.000	0.016	0.013	0.000	0.058	0.029	0.065	0.022	0.084	0.003	0.075	0.013	0.087
8	M	0.015	0.000	0.000	0.000	0.000	0.000	0.015	0.000	0.015	0.000	0.015	0.000	0.015	0.000	0.015
9	M	0.236	0.055	0.000	0.000	0.000	0.000	0.291	0.000	0.236	0.055	0.291	0.000	0.291	0.000	0.291
10	M	0.071	0.021	0.000	0.033	0.059	0.004	0.092	0.096	0.104	0.084	0.167	0.021	0.163	0.025	0.188
11	M	0.128	0.028	0.000	0.033	0.022	0.000	0.156	0.055	0.161	0.050	0.211	0.000	0.211	0.000	0.211
12	M	0.043	0.011	0.004	0.018	0.043	0.000	0.058	0.061	0.061	0.058	0.116	0.004	0.112	0.007	0.119
13	M	0.045	0.008	0.000	0.076	0.023	0.015	0.053	0.114	0.121	0.046	0.167	0.000	0.167	0.000	0.167
14	M	0.112	0.012	0.000	0.054	0.035	0.000	0.124	0.089	0.166	0.047	0.212	0.000	0.204	0.008	0.213
15	F	0.089	0.000	0.000	0.018	0.036	0.004	0.089	0.058	0.107	0.040	0.143	0.004	0.129	0.018	0.147
16	F	0.068	0.004	0.002	0.013	0.031	0.009	0.074	0.053	0.081	0.046	0.118	0.008	0.111	0.015	0.127
17	F	0.097	0.006	0.000	0.016	0.042	0.003	0.103	0.061	0.113	0.051	0.159	0.006	0.156	0.009	0.164
18	F	0.125	0.006	0.000	0.018	0.077	0.006	0.131	0.101	0.143	0.089	0.221	0.012	0.214	0.018	0.232
19	F	0.089	0.003	0.000	0.015	0.042	0.009	0.092	0.066	0.104	0.054	0.158	0.000	0.146	0.012	0.158
20	F	0.078	0.016	0.003	0.019	0.033	0.000	0.097	0.052	0.097	0.052	0.147	0.003	0.137	0.013	0.149
21	F	0.119	0.044	0.000	0.007	0.037	0.007	0.163	0.051	0.126	0.088	0.207	0.007	0.215	0.000	0.214
22	F	0.115	0.057	0.000	0.031	0.057	0.000	0.172	0.088	0.146	0.114	0.255	0.005	0.245	0.016	0.260
23	F	0.219	0.011	0.000	0.022	0.077	0.011	0.230	0.110	0.241	0.099	0.297	0.044	0.319	0.022	0.340
24	F	0.156	0.000	0.000	0.104	0.065	0.013	0.156	0.182	0.260	0.078	0.234	0.104	0.312	0.026	0.338
25	F	0.095	0.011	0.005	0.037	0.137	0.016	0.111	0.190	0.132	0.169	0.301	0.000	0.258	0.042	0.301
26	F	0.181	0.014	0.000	0.056	0.125	0.000	0.195	0.181	0.237	0.139	0.375	0.000	0.306	0.059	0.376
27	F	0.188	0.000	0.000	0.125	0.125	0.000	0.188	0.250	0.313	0.125	0.438	0.000	0.375	0.063	0.438
28	F	0.101	0.000	0.000	0.061	0.088	0.027	0.101	0.176	0.162	0.115	0.277	0.000	0.196	0.081	0.277

Note : Computations performed were to 9 decimal places, however for the purpose of data representation, values are shown to 3 decimal places.

## Appendix D

**Table 5: Mean minute rate of feedback comments per female student, by teachers for feedback categories, by lesson.**

	Teacher Gender	Positive General	Positive Specific	Positive Value	Corrective General	Corrective Specific	Corrective Value	Total Positive	Total Corrective	General	Quality	Individual	Group	Skill	Behaviour	Total Feedback
1	M	0.024	0.003	0.003	0.033	0.045	0.012	0.030	0.090	0.057	0.063	0.104	0.015	0.077	0.042	0.120
2	M	0.051	0.000	0.000	0.025	0.045	0.010	0.051	0.080	0.076	0.055	0.116	0.015	0.091	0.040	0.131
3	M	0.039	0.005	0.000	0.023	0.030	0.002	0.044	0.055	0.062	0.037	0.075	0.023	0.082	0.016	0.099
4	M	0.050	0.008	0.000	0.042	0.042	0.000	0.058	0.084	0.092	0.050	0.133	0.008	0.108	0.033	0.142
5	M	0.042	0.013	0.003	0.013	0.018	0.000	0.058	0.031	0.055	0.034	0.083	0.005	0.081	0.008	0.089
6	M	0.058	0.012	0.002	0.017	0.043	0.000	0.072	0.060	0.075	0.057	0.125	0.007	0.123	0.010	0.132
7	M	0.052	0.016	0.000	0.036	0.052	0.004	0.068	0.092	0.088	0.072	0.087	0.071	0.119	0.040	0.160
8	M	0.161	0.021	0.000	0.084	0.035	0.007	0.182	0.126	0.245	0.063	0.287	0.021	0.301	0.007	0.308
9	M	0.101	0.000	0.000	0.000	0.030	0.000	0.101	0.030	0.101	0.030	0.131	0.000	0.131	0.000	0.131
10	M	0.083	0.013	0.004	0.038	0.050	0.008	0.100	0.096	0.121	0.075	0.188	0.008	0.175	0.021	0.196
11	M	0.140	0.010	0.000	0.040	0.060	0.010	0.150	0.110	0.180	0.080	0.260	0.000	0.260	0.000	0.260
12	M	0.052	0.000	0.009	0.009	0.026	0.000	0.061	0.035	0.061	0.035	0.096	0.000	0.096	0.000	0.096
13	M	0.023	0.000	0.000	0.068	0.136	0.000	0.023	0.204	0.091	0.136	0.205	0.023	0.182	0.045	0.227
14	M	0.115	0.006	0.006	0.038	0.051	0.000	0.127	0.089	0.153	0.063	0.218	0.000	0.212	0.006	0.216
15	F	0.083	0.004	0.004	0.004	0.046	0.008	0.091	0.058	0.087	0.062	0.146	0.004	0.150	0.000	0.149
16	F	0.097	0.005	0.003	0.013	0.056	0.000	0.105	0.069	0.110	0.064	0.171	0.003	0.171	0.003	0.174
17	F	0.080	0.011	0.000	0.004	0.053	0.000	0.091	0.057	0.084	0.064	0.140	0.008	0.140	0.008	0.148
18	F	0.093	0.000	0.000	0.021	0.071	0.000	0.093	0.092	0.114	0.071	0.179	0.007	0.179	0.007	0.185
19	F	0.085	0.011	0.000	0.011	0.036	0.014	0.096	0.061	0.096	0.061	0.157	0.000	0.154	0.003	0.157
20	F	0.081	0.012	0.007	0.007	0.029	0.000	0.100	0.036	0.088	0.048	0.125	0.012	0.130	0.007	0.136
21	F	0.178	0.111	0.006	0.006	0.106	0.011	0.295	0.123	0.184	0.234	0.394	0.022	0.411	0.006	0.418
22	F	0.094	0.052	0.000	0.016	0.063	0.021	0.146	0.100	0.110	0.136	0.240	0.005	0.240	0.005	0.246
23	F	0.154	0.019	0.000	0.019	0.045	0.006	0.173	0.070	0.173	0.070	0.205	0.038	0.244	0.000	0.243
24	F	0.109	0.000	0.000	0.036	0.027	0.000	0.109	0.063	0.145	0.027	0.100	0.073	0.173	0.000	0.172
25	F	0.094	0.006	0.003	0.003	0.067	0.023	0.103	0.093	0.097	0.099	0.193	0.003	0.196	0.000	0.196
26	F	0.157	0.000	0.000	0.000	0.130	0.009	0.157	0.139	0.157	0.139	0.287	0.009	0.296	0.000	0.296
27	F	0.299	0.014	0.000	0.042	0.208	0.021	0.313	0.271	0.341	0.243	0.556	0.028	0.576	0.007	0.584
28	F	0.081	0.008	0.000	0.019	0.046	0.008	0.089	0.073	0.100	0.062	0.158	0.004	0.158	0.004	0.162

Note : Computations performed were to 9 decimal places, however for the purpose of data representation, values are shown to 3 decimal places.



**Table 6: Frequency of verbal feedback comments distributed to students by "Male Teacher - 1".**

Frequency of verbal feedback comments												
LESSON	1		2		3		4		5		Total	
Lesson Duration (min.)	42		22		44		15		32		155	
Student Gender	M	F	M	F	M	F	M	F	M	F	M	F
Number of students attending	16	8	14	9	14	10	13	8	14	12	81	47
<u>FEEDBACK CATEGORY</u>												
- Total	54	40	33	26	59	43	31	17	53	34	230	160
- Positive	23	10	22	10	34	19	21	7	32	22	132	68
- Corrective	31	30	11	16	25	24	10	10	21	12	98	92
- General	24	19	20	15	43	26	22	11	31	21	140	92
- Quality	30	21	13	11	16	17	9	6	22	13	90	68
- Skill	43	26	32	18	47	36	29	13	48	31	199	124
- Behaviour	11	14	1	8	12	7	2	4	5	3	31	36
- Individual	46	35	32	23	55	33	31	16	45	32	209	139
- Group	8	5	1	3	4	10	0	1	8	2	21	21

**Table 7: Frequency of verbal feedback comments distributed to students by "Male Teacher - 2".**

Frequency of verbal feedback comments												
LESSON	1		2		3		4		5		Total	
Lesson Duration (min.)	32		28		13		12		24		109	
Student Gender	M	F	M	F	M	F	M	F	M	F	M	F
Number of students attending	9	13	11	9	10	11	5	9	10	10	45	52
<u>FEEDBACK CATEGORY</u>												
- Total	49	55	27	40	2	44	16	13	45	47	139	199
- Positive	25	30	18	17	2	26	16	10	22	24	83	107
- Corrective	24	25	9	23	0	18	0	3	23	23	56	92
- General	27	31	20	22	2	35	13	10	25	29	87	127
- Quality	22	24	7	18	0	9	3	3	20	18	52	72
- Skill	43	51	23	30	2	43	16	13	39	42	123	179
- Behaviour	6	4	4	10	0	1	0	0	6	5	16	20
- Individual	42	52	26	32	2	41	16	13	40	45	126	183
- Group	7	3	1	8	0	3	0	0	5	2	13	16

**Table 8:** Frequency of verbal feedback comments distributed to students by "Male Teacher - 3".

Frequency of verbal feedback comments										
LESSON	1		2		3		4		Total	
Lesson Duration (min.)	20		23		14		26		83	
Student Gender	M	F	M	F	M	F	M	F	M	F
Number of students attending	9	5	12	5	12	4	10	6	43	20
<u>FEEDBACK</u>										
<u>CATEGORY</u>										
- Total	38	26	33	11	22	10	55	34	148	81
- Positive	28	15	16	7	7	1	32	20	83	43
- Corrective	10	11	17	4	15	9	23	14	65	38
- General	29	18	17	7	16	4	43	24	105	53
- Quality	9	8	16	4	6	6	12	10	43	28
- Skill	38	26	31	11	22	8	53	33	144	78
- Behaviour	0	0	2	0	0	2	2	1	4	3
- Individual	38	26	32	11	22	9	55	34	147	80
- Group	0	0	1	0	0	1	0	0	1	1

**Table 9: Frequency of verbal feedback comments distributed to students by "Female Teacher - 1".**

Frequency of verbal feedback comments												
LESSON	1		2		3		4		5		Total	
Lesson Duration (min.)	20		38		22		14		28		122	
Student Gender	M	F	M	F	M	F	M	F	M	F	M	F
Number of students attending	14	12	14	10	14	12	12	10	12	13	66	57
<u>FEEDBACK CATEGORY</u>												
- Total	41	36	67	66	51	39	39	26	53	57	251	224
- Positive	25	22	39	40	32	24	22	13	31	35	149	134
- Corrective	16	14	28	26	19	15	17	13	22	22	102	90
- General	30	21	43	42	35	22	24	16	35	35	167	136
- Quality	11	15	24	24	16	17	15	10	18	22	84	88
- Skill	36	36	59	65	48	37	36	25	49	56	228	219
- Behaviour	5	0	8	1	3	2	3	1	4	1	23	5
- Individual	40	35	63	65	49	37	37	25	53	57	242	219
- Group	1	1	4	1	2	2	2	1	0	0	9	5

**Table 10: Frequency of verbal feedback comments distributed to students by "Female Teacher - 2".**

LESSON	Frequency of verbal feedback comments										Total	
	1		2		3		4		5			
Lesson Duration (min.)	34		15		24		13		12		98	
Student Gender	M	F	M	F	M	F	M	F	M	F	M	F
Number of students attending	9	12	9	12	8	8	7	12	7	10	40	54
<b>FEEDBACK CATEGORY</b>												
- Total	46	56	29	75	50	47	31	38	26	19	182	235
- Positive	30	41	22	53	33	28	21	27	12	12	118	161
- Corrective	16	15	7	22	17	19	10	11	14	7	64	74
- General	30	36	17	33	28	21	22	27	20	16	117	133
- Quality	16	20	12	42	22	26	9	11	6	3	65	102
- Skill	42	53	29	74	47	46	29	38	24	19	171	230
- Behaviour	4	3	0	1	3	1	2	0	2	0	11	5
- Individual	45	51	28	71	49	46	27	32	18	11	167	211
- Group	1	5	1	4	1	1	4	6	8	8	15	24

**Table 11: Frequency of verbal feedback comments distributed to students by "Female Teacher - 3".**

Frequency of verbal feedback comments										
LESSON	1		2		3		4		Total	
Lesson Duration (min.)	38		12		16		37		103	
Student Gender	M	F	M	F	M	F	M	F	M	F
Number of students attending	5	9	6	9	1	9	4	8	16	35
<u>FEEDBACK CATEGORY</u>										
- Total	57	67	27	32	7	84	41	42	132	225
- Positive	21	35	14	17	3	45	15	23	53	120
- Corrective	36	32	13	15	4	39	26	19	79	105
- General	25	41	17	17	5	49	24	26	71	133
- Quality	32	26	10	15	2	35	17	16	61	92
- Skill	49	67	22	32	6	83	29	41	106	223
- Behaviour	8	0	5	0	1	1	12	1	26	2
- Individual	57	66	27	31	7	80	41	41	132	218
- Group	0	1	0	1	0	4	0	1	0	7